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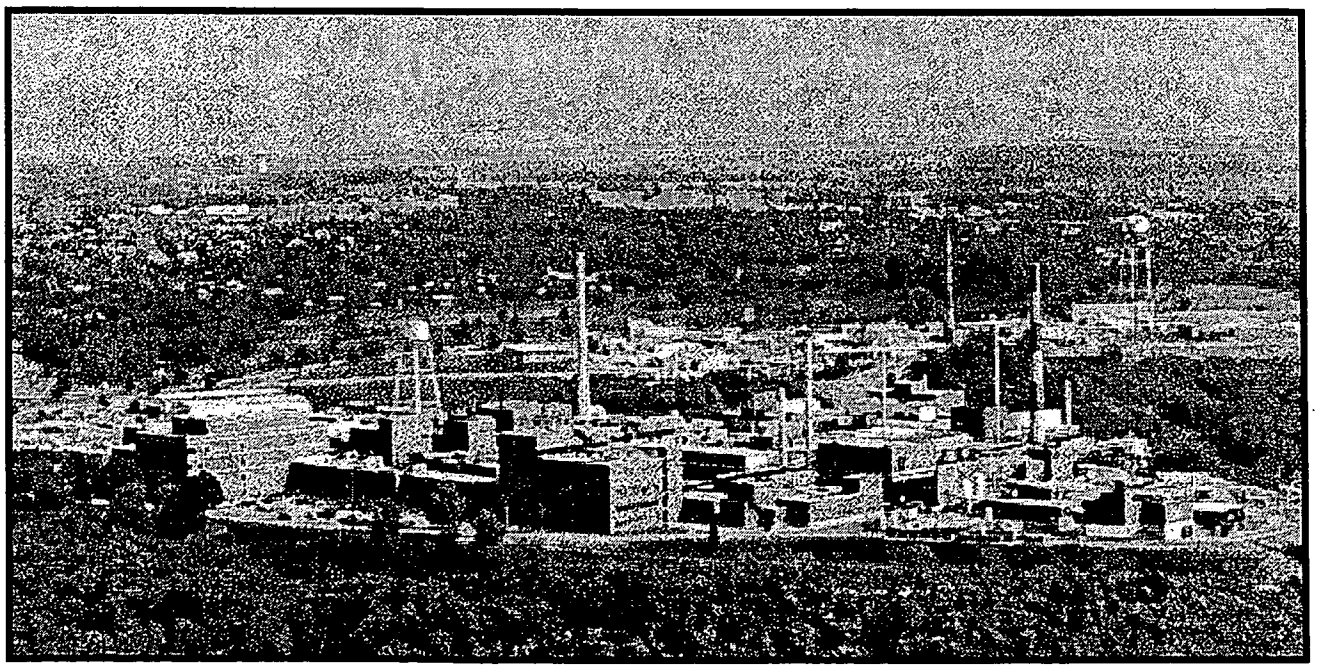
Environmental
Restoration
Program

Miamisburg Closure Project
Building Data Package

Buildings 31 (PRS 268) and 31A

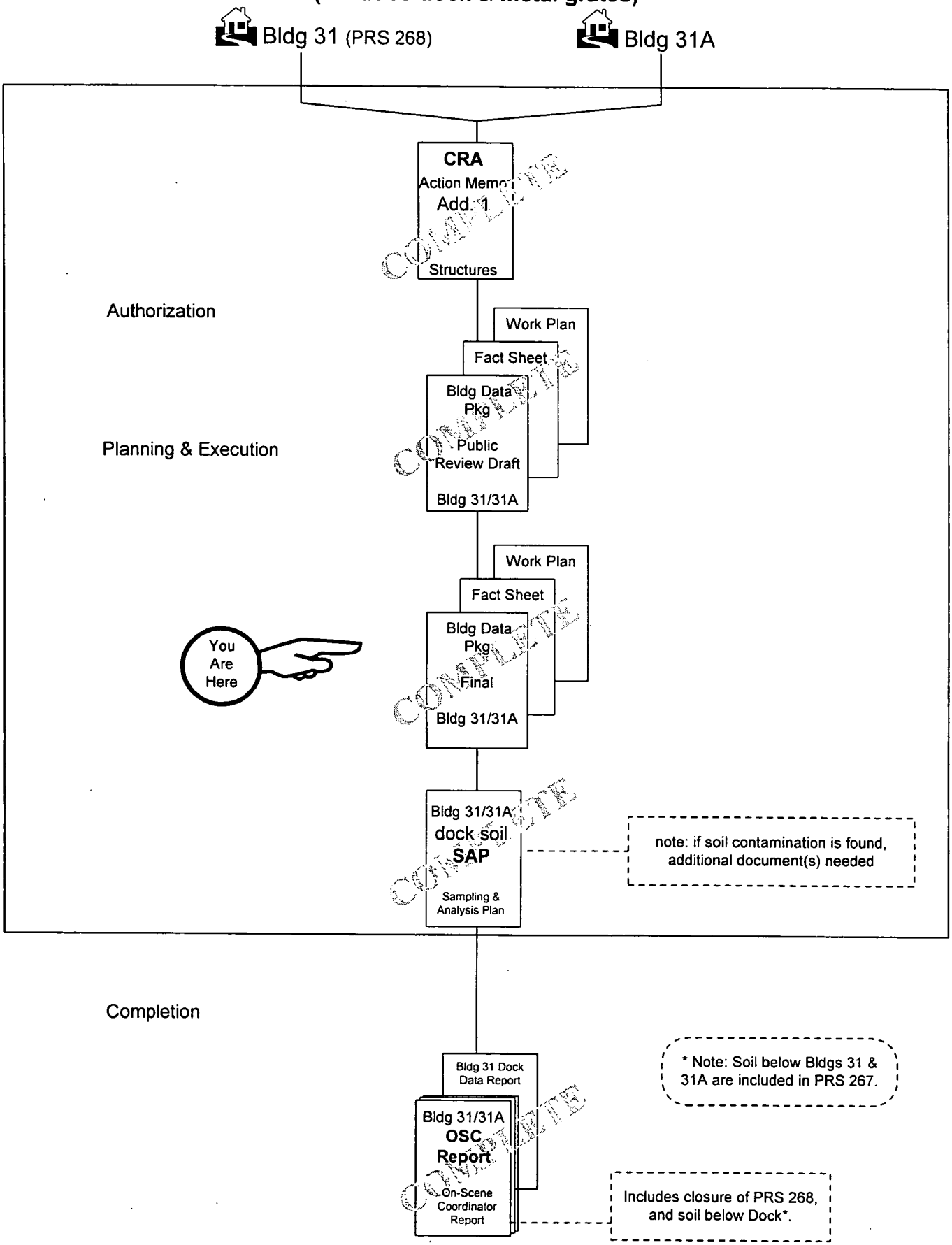
(Demolition in accordance with Action Memo / EE/CA for Contingent Removal Actions for Contaminated Soils, Addendum 1: Structures)

Final
January 2006



Buildings 31 & 31A

(includes dock & metal grates)



19Jan06

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The Mound Core Team
500 Capstone Circle
Miamisburg, OH 45342

December 2004

Mr. Frank Bullock, PE
Director of Operations
Miamisburg Mound Community Improvement Corporation
720 Mound Road
COS Bldg. 4221
Miamisburg, Ohio 45342-6714

Dear Mr. Bullock:

The Core Team, consisting of the U.S. Department of Energy Miamisburg Closure Project (DOE-MCP), U.S. Environmental Protection Agency (USEPA), and the Ohio Environmental Protection Agency (OEPA), appreciates your comments on the Building 31/31A Building Data Package, Public Review Draft, June 2004.

Attached is our response.

Should the responses to comments require additional detail, please contact Paul Lucas at (937) 847-8350, x314 and we will gladly arrange a meeting or telephone conference.

Sincerely,

DOE/MCP:	Paul Lucas Paul Lucas, Remedial Project Manager	12/16/04 date
USEPA:	Timothy J. Fischer Timothy J. Fischer, Remedial Project Manager	12/15/04 date
OEPA:	Brian K. Nickel Brian K. Nickel, Project Manager	12/16/04 date

Response to MMCIC/ EHS Technology Group, LLC Comments on the Building 31/31A Building Data Package
Public Review Draft
June 2004

Comment 1.

Reference Document: Buildings 31 (PRS 268) and 31 A (Demolition in accordance with Action Memo/EE/CA for Contingent Removal Acton s for Contaminated Soils, Addendum 1: Structures) ; Public Review Draft, June 2004

Purpose: The purpose of this document is to notify the public of the Demolition Activity proposed for Buildings 31 and 31A. In addition to the removal of these two structures and their slabs, the asphalt staging area, and the metal grates and truck dock to the south of Building 31 will be removed. This Building Data Package, with Fact Sheet included, satisfies the Public Notification requirements as outlined in the Action Memorandum/Engineering Evaluation/Cost Analysis, Contingent Removal Action for Contaminated Soil, June 2002, Final.

Assessment of Review: Buildings 31, constructed in 1965, and 31A, constructed as an addition to Building 31 in 1984, had been used to store, stage, and prepare for offsite shipment of low level radioactive wastes generated from SM building; store thorium drums; decontaminations and decommissioning (D&D) projects, environmental restoration projects, wastewater treatment processes, and laboratory activities.

In addition, an asphalt staging area completely surrounds Buildings 31 and 31A. This asphalt area roughly matches the boundary of PRS 268. A truck dock, constructed of concrete, is located about 80 feet south of Building 31. The truck dock, which appears from the aerial views of the site to have been constructed between 1983 and 1994 was used to load boxes of contaminated soil onto semi-trailers through the rear doors of the trailers.

The staging area between Building 31 and the truck dock (south of Building 31) is covered with interlocking metal grates. The metal grates were installed about 1988 to cover a deteriorating asphalt staging area that was covering soils contaminated with thorium. Each metal grate is approximately 20 inches wide and 12.5 feet long. The interlocking metal grates cover a staging area that measures about 63 feet wide by 80 feet long.

These two structures and their slabs, the asphalt staging area, and the metal grates and truck dock to the south of Building 31 will be removed. Contaminants found include plutonium-238 and thorium-232.

Technical Analysis: In 2002, the Action Memorandum, Engineering Evaluation/Cost Analysis was prepared as a Contingent Removal Action for Contaminated Soils. The idea was to streamline the cleanup process for specific types of soils contamination. The soils considered for the CRA would have similar properties including type of contamination, contaminant concentrations, and isolated areas of contamination. The

Action Memorandum for these cleanups would be presented in the form of a Fact Sheet. The Fact Sheet would include all pertinent information associated with the PRS and cleanup, including a description/history of the PRS, contaminants of concern (COCs), risk criteria, background levels, cleanup objectives, environmental surveillance measures, verification sampling, schedule of activities, and cost estimate. This Building Data Package, with associated Fact Sheet, fulfills these requirements.

The Cleanup could be performed in conjunction with the public review of the Fact Sheets. The public would still have the opportunity to comment on all aspects of the Removal Action. Verification sampling would not be performed until after the public comment period, allowing regulators to consider all comments before verifying the Removal Action is complete. Cleanup of this area is scheduled for summer 2004.

EHS has had the opportunity to review and comment on this Building Data Package and associated Fact Sheet. We concur with the planned removal action (RA) for the buildings, asphalt staging area, truck dock and metal grates due to elevated levels of plutonium-238 and thorium-232 found throughout this area. This area roughly represents the area known as PRS 268.

As always, coordination between CH2M Hill, the cleanup contractor at the Mound Site, and Miamisburg Mound Community Improvement Corp. (MMCIC -developer of the Mound site) will result in the return of these areas to the proposed use in the Mound Comprehensive Reuse Plan.

Substantive Comments: EHS concurs with the planned removal action (RA) for Buildings 31 and 31A, the asphalt staging area, the truck dock and the associated metal grates. Coordination between CH2M Hill, the DOE and MMCIC to ensure the building area is left in a condition consistent with the Mound Reuse Plan.

If EHS's understandings are correct, no specific response to the above comment is necessary, and we understand that these comments will be included in the OSC report.

Response 1. Thank you for your review and input to the document. Public comments are included in the final version of the document to which they pertain; accordingly, these comments will not be included in an OSC Report as your comment indicated, but are included in the Final version of the Building 31/31A BDP.

MMCIC is encouraged to coordinate with DOE and the clean-up contractor regarding demolition activities. The individual demolition Work Plans will specify any site restoration activities following structure removal. The Core Team understands MMCIC's request and encourages MMCIC to meet with DOE to obtain an agreeable end state.

Technical Review of the Mound Site
Summary
by **EHS TECHNOLOGY GROUP, LLC**

Reference Document: Buildings 31 (PRS 268) and 31 A (Demolition in accordance with Action Memo/EE/CA for Contingent Removal Acton s for Contaminated Soils, Addendum 1: Structures) ; Public Review Draft, June 2004

Purpose: The purpose of this document is to notify the public of the Demolition Activity proposed for Buildings 31 and 31A. In addition to the removal of these two structures and their slabs, the asphalt staging area, and the metal grates and truck dock to the south of Building 31 will be removed. This Building Data Package, with Fact Sheet included, satisfies the Public Notification requirements as outlined in the Action Memorandum/Engineering Evaluation/Cost Analysis, Contingent Removal Action for Contaminated Soil, June 2002, Final.

Assessment of Review: Buildings 31, constructed in 1965, and 31A, constructed as an addition to Building 31 in 1984, had been used to store, stage, and prepare for offsite shipment of low level radioactive wastes generated from SM building; store thorium drums; decontaminations and decommissioning (D&D) projects, environmental restoration projects, wastewater treatment processes, and laboratory activities.

In addition, an asphalt staging area completely surrounds Buildings 31 and 31A. This asphalt area roughly matches the boundary of PRS 268. A truck dock, constructed of concrete, is located about 80 feet south of Building 31. The truck dock, which appears from the aerial views of the site to have been constructed between 1983 and 1994 was used to load boxes of contaminated soil onto semi-trailers through the rear doors of the trailers.

The staging area between Building 31 and the truck dock (south of Building 31) is covered with interlocking metal grates. The metal grates were installed about 1988 to cover a deteriorating asphalt staging area that was covering soils contaminated with thorium. Each metal grate is approximately 20 inches wide and 12.5 feet long. The interlocking metal grates cover a staging area that measures about 63 feet wide by 80 feet long.

These two structures and their slabs, the asphalt staging area, and the metal grates and truck dock to the south of Building 31 will be removed. Contaminants found include plutonium-238 and thorium-232.

Technical Analysis: In 2002, the Action Memorandum, Engineering Evaluation/Cost Analysis was prepared as a Contingent Removal Action for Contaminated Soils. The idea was to streamline the cleanup process for specific types of soils contamination. The soils considered for the CRA would have similar properties including type of contamination, contaminant concentrations, and isolated areas of contamination. The Action Memorandum for these cleanups would be presented in the form of a Fact Sheet. The Fact Sheet would include all pertinent information associated with the PRS and cleanup, including a description/history of the PRS, contaminants of concern (COCs), risk criteria, background levels, cleanup objectives, environmental surveillance measures, verification sampling, schedule of activities, and cost estimate. This Building Data Package, with associated Fact Sheet, fulfills these requirements.

The Cleanup could be performed in conjunction with the public review of the Fact Sheets. The public would still have the opportunity to comment on all aspects of the Removal Action. Verification sampling would not be performed until after the public comment period, allowing regulators to consider all comments before verifying the Removal Action is complete. Cleanup of this area is scheduled for summer 2004.

EHS has had the opportunity to review and comment on this Building Data Package and associated Fact Sheet. We concur with the planned removal action (RA) for the buildings, asphalt staging area, truck dock and metal grates due to elevated levels of plutonium-238 and thorium-232 found throughout this area. This area roughly represents the area known as PRS 268.

As always, coordination between CH2M Hill, the cleanup contractor at the Mound Site, and Miamisburg Mound Community Improvement Corp. (MMCIC -developer of the Mound site) will result in the return of these areas to the proposed use in the Mound Comprehensive Reuse Plan.

Substantive Comments: EHS concurs with the planned removal action (RA) for Buildings 31 and 31A, the asphalt staging area, the truck dock and the associated metal grates. Coordination between CH2M Hill, the DOE and MMCIC to ensure the building area is left in a condition consistent with the Mound Reuse Plan.

If EHS's understandings are correct, no specific response to the above comment is necessary, and we understand that these comments will be included in the OSC report.

From: "Dann Bird" <DBird@mound.com>
To: "Paul Lucas (E-mail)" <Paul.lucas@ohio.doe.gov>
Date: 7/12/04 3:45PM
Subject: Building Data Package Reviews - 30, 31 & #1A

Paul,

Attached for your information and review are the evaluations of Building Data Packages 30, 31 & 31A.
Effective July 19th
Frank Bullock will be the MMCIC contact for Environmental Reviews and Site Issues.

Dann Bird <<Expericenter - Building 30.doc>> <<Expericenter - Building 31 and 31A.doc; PRS 268.doc>>

CC: "Sue Smiley (E-mail)" <sue.smiley@ohio.doe.gov>, "Frank Schmaltz (E-mail)" <frank.schmaltz@ohio.doe.gov>, "Dave Rakel (E-mail)" <Rakeda@doe-md.gov>, "Ellen Stanifer (E-mail)" <estanifer@ehstech.com>, "Frank Bullock" <FBullock@mound.com>, "Becky Burrell (E-mail)" <blbstellar@aol.com>

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AFFIDAVIT OF PUBLICATION

State of Ohio

SS: CH2MHILL

Montgomery County

MIAMISBURG CLOSURE PROJECT
BUILDING DATA PACKAGES and PUBLIC FACT SHEET

The following documents are available (June 12, 2004) for public review in the CERCLA Public Meeting Room, 305 E. Central Ave., Miamisburg, Ohio.

BDP and Public Fact Sheet
Buildings 31 and 31A:
31-Contaminated Materials Storage Building/LSA and TRU Waste Storage Building, and 31A-LSA and TRU Waste Storage
and
BDP Building 30: Health Physics Count Lab/SM (Special Metallurgical) Storage Building

Questions can be referred to Paul Lucas at (937) 847-8350 ext. 314.

U.S. Department of Energy
Ohio Environmental Protection Agency
45284
6-11/04

Before me, the undersigned, a Notary public in and for said County, personally came Tina Sears, who being first duly sworn says she is the Legal Advertising Agent of the DAYTON DAILY NEWS, which she says is a newspaper of general circulation in Montgomery, Clark, Warren, Butler, Clinton, Greene, Preble, Miami, Darke, Mercer, Shelby,

25 Lines, **1** Time(s), last day of publication

being **6/11/04**, and he/she furthur says

that the bona fide daily paid circulation of the said DAYTON DAILY NEWS was over Twenty-five Thousand (25,000) at the time the said advertisement was published, and that the price charged for same does not exceed the rates charged on annual contract for the like amount of space to other advertisers in the general display advertising columns.

Signed Tina Sears

Sworn or affirmed to, and subscribed before me, this

11 day of **June** 2004

In Testimony Whereof, I have hereunto set my hand and affixed my official seal, the day and year aforesaid.

Kelly Jones

Notary Public in and for the State of Ohio

NOTARIAL SEAL
STATE OF OHIO

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PUBLIC FACT SHEET

Buildings 31 and 31A

This Fact Sheet satisfies the Public Notification requirement set forth in the Contingent Removal Action Memorandum[1] and is developed in accordance with Addendum 1[2].

Background. Buildings 31 (Contaminated Materials Storage Building/Low Specific Activity [LSA] and Transuranic [TRU] Waste Storage Building) and 31A (LSA and TRU Waste Storage) are located in the eastern central portion of the site (see Figure 1). The buildings had been used to store, stage, and prepare for offsite shipment of the low-level wastes (LLW) generated from Special Metallurgical (SM) Building, the thorium drum storage area, decontamination and decommissioning (D&D) projects, environmental restoration projects, wastewater treatment processes, and laboratory activities. These two structures and their slabs, the asphalt staging area, and the metal grates and truck dock to the south of Building 31 will be removed per the Buildings 31 and 31A demolition work package[3]. The asphalt staging area is asphalt pavement that completely surrounds Buildings 31 and 31A and roughly matches the boundary of PRS 267 (Figure 1).

Characterization. Radiological contamination has been found in Building 31, and could be present in portions of Building 31A. The highest observed activity found (on the floor of Building 31) was 3,880,000 dpm/100cm^2 (disintegrations per minute/100 centimeters^2) alpha (compared with surface release criteria of 100 dpm/100cm^2) and 180,000 dpm/100cm^2 beta (compared with surface release criteria of 5,000 dpm/100cm^2). Loose surface contamination was found at one location at 166 dpm/100cm^2 alpha (compared with surface release criteria of 20 dpm/100cm^2). The major isotope identified by alpha spec is plutonium–238.

The metal grates to the south of Building 31 were put in place to prevent disturbance of the soil, which is known to be contaminated with thorium-232.

Radiological contamination has been found on the truck dock. The highest observed activity was 20 dpm/100cm^2. The major isotope identified by alpha spec is plutonium–238.

Based on the above information, the Department of Energy determined that a **Removal Action (RA)** was warranted and the Core Team agreed to apply the Contingent Removal Action Memorandum Addendum 1[2]. The RA contaminants of concern are plutonium-238 and thorium-232. The RA will consist of demolition and removal of the Buildings 31 and 31A structures and slabs, the asphalt staging area, and the metal grates and truck dock south of Building 31, and shipping of debris to approved disposal facilities.

The structures to be removed in this RA (except the dock) are located within the boundary of PRS 267, which is a separate RA. The PRS 267 RA is authorized per Potential Release Site Package for PRS 267, Final, August 2003. Removal of contaminated soil in the area will be per a Core Team approved PRS 267 Work Plan as authorized per the Building 38 Action Memorandum. Soil sampling will be performed per a Core Team approved Verification Sampling & Analysis Plan (VSAP) for Building 38 Soil.

The soil below and around the truck dock is not within the PRS 267 boundary and has not been evaluated. As part of this RA, soil sampling will be conducted per a Core Team approved Building 31 Dock Sampling and Analysis Plan (SAP).

Schedule. This Fact Sheet will be in public review for 30 days, ending July 12, 2004. The RA is planned for Summer 2004. A summary of the RA will be included in the Buildings 31 and 31A On-Scene Coordinator (OSC) Report. The OSC Report will be placed in the public reading room after approval by the Core Team.

Building and structure demolition, and removal and disposal of approximately 24,600 ft^3 LLW debris and 20,400 ft^3 construction debris are expected to cost less than $411,000.

Additional information can be found in the Buildings 31 and 31A Building Data Package[3], attached, or by contacting Frank Schmaltz at 937-847-8350 ext. 304.

1: Action Memorandum/Engineering Evaluation/Cost Analysis, Contingent Removal Action for Contaminated Soil, June 2002, Final
2: Action Memo /EE/CA for Contingent Removal Actions for Contaminated Soils Addendum 1, Structures, April 2004, Public Review Draft
3: Building 31/31A Building Data Package and Work Package, June 2004

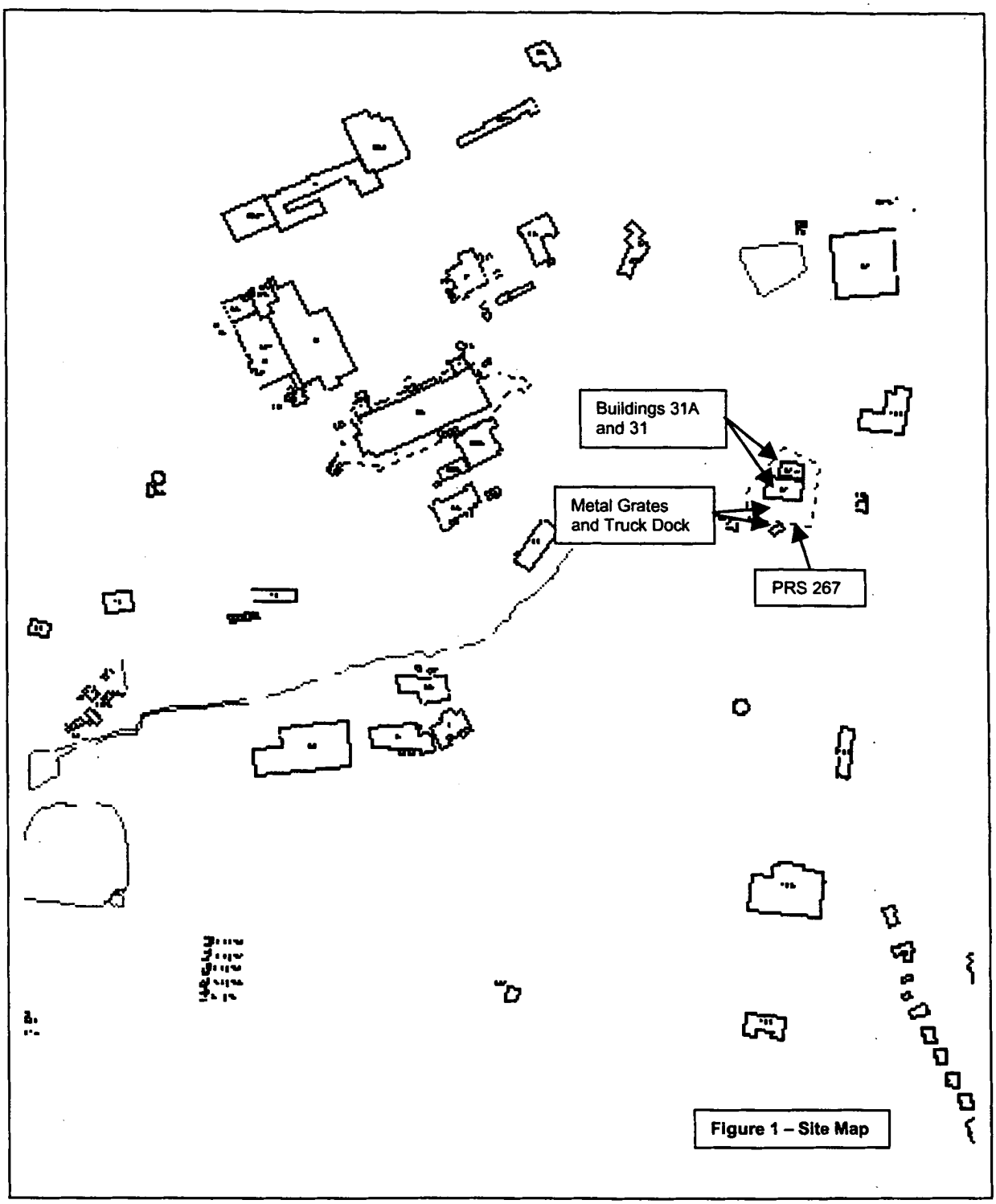

Figure 1 – Site Map

1: Action Memorandum/Engineering Evaluation/Cost Analysis, Contingent Removal Action for Contaminated Soil, June 2002, Final
2: Action Memo /EE/CA for Contingent Removal Actions for Contaminated Soils Addendum 1, Structures, April 2004, Public Review Draft
3: Building 31/31A Building Data Package and Work Package, June 2004

Recommendation for Buildings 31, 31A, and Truck Dock

Buildings 31 (also known as PRS 268) (Contaminated Materials Storage Building/LSA and TRU Waste Storage Building) and 31A (LSA and TRU Waste Storage) are located in the eastern central portion of the site (see Figure 1 on the Fact Sheet). The buildings had been used to: store, stage, and prepare for offsite shipment of low-level radioactive wastes generated from SM Building; store thorium drums; decontamination and decommissioning (D&D) projects; environmental restoration projects; wastewater treatment processes; and, laboratory activities. These two structures and their slabs, the asphalt staging area, and the metal grates and truck dock to the south of Building 31 will be removed per the Buildings 31 and 31A demolition work package.

Radiological contamination has been found in Building 31, and could be present in portions of Building 31A. The highest observed activity found (on the floor of Building 31) was 3,880,000 dpm/100cm^2 alpha (compared with surface release criteria of 100 dpm/100cm^2) and 180,000 dpm/100cm^2 beta (compared with surface release criteria of 5,000 dpm/100cm^2). Loose surface contamination was found at one location at 166 dpm/100cm^2 alpha (compared with surface release criteria of 20 dpm/100cm^2). The major isotope identified by alpha spec is plutonium–238.

The metal grates to the south of Building 31 were put in place to prevent disturbance of the soil, which is known to be contaminated with thorium-232.

Radiological contamination has also been found on the truck dock. The highest observed activity was 20 dpm/100cm^2. The major isotope identified by alpha spec is plutonium-238.

Based on the above information, the Department of Energy determined that a **Removal Action (RA)** was warranted and the Core Team agreed to apply the Contingent Removal Action Memorandum Addendum 1. The RA contaminants of concern are plutonium-238 and thorium-232.

This Removal Action will be performed under the Action Memorandum for Contingent Removal Actions, dated June 2002, and Addendum 1, dated April 2004. Successful completion of the Removal Action will be documented via an On-Scene Coordinator (OSC) Report signed by the Core Team, which will be placed in the Public Reading Room. A Public Fact Sheet along with this recommendation, signed by the Core Team, will be placed in the Public Reading Room for a 30-day review period. Upon closure of the public review comments, if any, the Fact Sheet will be issued as a final document and made available in the Public Reading Room.

CONCURRENCE:

DOE/MCP: Paul Lucas — 6/17/04
Paul Lucas, Remedial Project Manager (date)

USEPA: David P. Seely — 6/16/04
David P. Seely, Remedial Project Manager (date)

OEPA: Brian K. Nickel — 6/17/04
Brian K. Nickel, Project Manager (date)

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BDP Buildings 31 and 31A

REV	DESCRIPTION	DATE
WORKING DRAFT (to DOE)	Demolition of Buildings 31 and 31A (superstructures and slabs), the asphalt staging area, and the truck dock and metal grates south of Building 31 will be handled as a CERCLA Removal Action in accordance with the Contingent Removal Action Addendum 1: Structures. The Fact Sheet and Core Team Recommendation authorizing the Removal Action are provided at the front of this document.	**May 2004**
DRAFT (to Core Team)	The Core Team review period will be from June 2, 2004 through July 4, 2004.	**June 2004**
DRAFT PROPOSED FINAL (incorporates Core Team comments)	Text changes were made in response to Ohio EPA and US EPA comments.	**June 2004**
PUBLIC REVIEW DRAFT	The public review period is 12 June 2004 through 12 July 2004.	**June 2004**
FINAL	The Core Team response to public comments is provided at the front of this document.	**January 2006**

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1.0 GENERAL OVERVIEW

1.1 Introduction

The purpose of this Building Data Package (BDP) is to prepare for the demolition of Buildings 31 (also known as PRS 268) (Contaminated Materials Storage Building/Low Specific Activity [LSA] and Transuranic [TRU] Waste Storage Building) and 31A (LSA and TRU Waste Storage), the asphalt staging area, and the truck dock and metal grates and to identify, if possible, any recognized environmental conditions (defined below) that may affect the subject property and buildings.

Recognized Environmental Condition: The presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a likely release, a past release, or a material threat of a release of any hazardous substances or petroleum into structures, or into the air, ground, groundwater, or surface water near the buildings.

Radiological contamination is present in Building 31 and on the truck dock. No contamination was found on Building 31A surfaces. The asphalt staging area and metal grates will be removed, radiologically surveyed, and dispositioned in accordance with the survey results.

This demolition project will be handled as a CERCLA Removal Action in accordance with the Contingent Removal Action Addendum 1: Structures. The Fact Sheet and Core Team Recommendation authorizing the Removal Action are provided at the front of this document. The Removal Action will consist of demolition and removal of the Buildings 31 and 31A structures and slabs, the asphalt staging area, and the metal grates and truck dock south of Building 31, and shipping of debris to approved disposal facilities. Post-demolition soil sampling in the vicinity of the dock will be performed in accordance with the Core Team approved Building 31 Dock Sampling and Analysis Plan (SAP).

PRS 267 (which includes the soil below and around the buildings, asphalt staging area, and metal grates) has already been evaluated by the Core Team. Please refer to PRS 267 PRS Package, Work Plan, and Building 38 Area VSAP for further information.

1.2 Scope

This document has been prepared in accordance with the agreements and requirements as specified in the *Work Plan for Environmental Restoration of the DOE Mound Site, The Mound 2000 Approach*. This document is a BDP for Buildings 31 and 31A located at the Department of Energy (DOE) Miamisburg Closure Project (MCP) in Miamisburg, Ohio. The investigation performed to support this BDP models procedures found in *ASTM Standard Practice for Environmental Site Assessments; Phase I Environmental Site Assessment Process* (Designation E 1527-00).

The scope of the investigation included Buildings 31 and 31A, the soil beneath, and a 15-foot wide perimeter border around the buildings. The investigation of Buildings 31 and 31A included the following:

A) A building and perimeter inspection.
B) An examination of historical aerial photographs and maps.
C) A review of federal and state regulatory agency records.
D) Personnel interviews.
E) A review of site records for:

1) History of spills, releases and chemical inventories
2) Past sampling data

- Radiological survey
- Soil sampling
- Lead-based paint
- Asbestos
- Radon

In addition to the building investigation conducted by site contractor personnel, documents were reviewed. Information used to compile BDPs includes the following:

- Characterization of Mound's Hazardous, Radioactive, and Mixed Wastes, August 1990
- Operable Unit 9 (OU-9) Site Scoping Report, Volumes 1-12
- Mound Facility Physical Characterization, December 1992
- Active Underground Storage Tank Plan, November 1994
- OU-9 Hydrological Investigation, Bedrock Report, January 1994
- OU-9 Hydrological Investigation, Buried Valley Aquifer Report, March 1994
- Environmental Appraisal Report of the Mound Plant, March 1996
- Title Search
- Lease Information
- EDR Report - Radius Map
- Building Prints
- Potential Release Site (PRS) information
- MD-22153, Mound Site Radionuclides By Location, June 1995 Contaminant Surveys
- MLM-3791, Mound Facility Physical Characterization, December 1993

2.0 BUILDINGS 31 AND 31A OVERVIEW

Building 31 is adjacent to and just south of Building 31A. The two-building complex is situated in the east central portion of the site (Figure 1) and has a combined total of 8,740 square feet of floor space. South of Building 31 is an area (approximately 63 by 80 feet)

that is covered by interlocking metal grates, and south of the metal grates is the free-standing concrete truck dock.

Building 31

Built in 1965, Building 31 is a one-story prefabricated building constructed on top of a six-inch thick concrete floor. The building is constructed with steel I-beams supporting a peaked roof. The walls of the building are preformed metal siding and the roof is preformed metal decking. Door and wall foundations were set on approximately 3' 8" deep concrete footers. Building 31 contains 6,090 square-feet of floor space (floor plan provided in Appendix D).

Building 31A

Built in 1984, Building 31A is a one-story prefabricated building constructed on top of an asphalt floor. The building is constructed with a wood frame and prefabricated wood trusses supporting a peaked roof. The walls of the building are preformed metal siding and the roof is preformed metal decking. The foundation consists of concrete grade beams poured on top of caissons that were sunk into the ground. The foundation ranges in depth from four to five feet along the eastern side to approximately eight feet along the western side of the building. Building 31A contains 2,650 square feet of floor space (floor plan provided in Appendix D).

Building Utilities

Buildings 31 and 31A use central steam for heating and central chilled water for cooling. Electric service to the buildings is 480 volts. Neither service water nor potable water is supplied to the buildings, and the buildings have no sanitary services. The buildings have fire sprinkler systems and are serviced by storm drains; however, there are no interior connections to the storm system.

Metal Grates

The staging area between Building 31 and the truck dock (south of Building 31) is covered with interlocking metal grates. The metal grates were installed about 1988 to cover a deteriorating asphalt staging area that was covering soil contaminated with thorium. Each metal grate is approximately 20 inches wide and 12.5 feet long. The interlocking metal grates cover a staging area that measures about 63 feet wide by 80 feet long.

Asphalt Staging Area

The asphalt staging area is asphalt pavement that completely surrounds Buildings 31 and 31A and roughly matches the boundary of PRS 267 (Appendix C, Figure 2).

Truck Dock

A truck dock, constructed of concrete, is located about 80 feet south of Building 31. The truck dock, which appears from the aerial views of the site to have been constructed

between 1983 and 1994, is approximately 20 feet wide, 35 feet long, and 4 feet high. The dock was used to load boxes of contaminated soil onto semi-trailers through the rear doors of the trailers.

2.1 Past Uses of Buildings 31 and 31A

Building 31 was designed and built in 1965 as a radioactive waste staging center and Building 31A was built as an addition to Building 31 in 1984. Building 31 was originally used to store recoverable plutonium wastes that had been moved from the SM storage field east of Building 21. In the mid-1960s, Building 31 was also used to store recovered drums from the thorium storage area. In the late 1970s, Building 31 was used for storage of new waste packaging containers and interim storage of packaged radioactive waste waiting final disposition. The radioactive waste storage area was separated from the rest of the building by a wall and contains three bays for waste storage. Originally, Building 31A was used for the storage of empty waste packages. However, by the late 1980s and early 1990s, both Buildings 31 and 31A were being used for storing sealed containers of transuranic (TRU) waste, and as a staging area for metal LSA boxes. During 2002 and 2003, Building 31A was used as a storage and staging area for raw materials and equipment from the Heat Source/Radioisotope Thermoelectric Generator (HS/RTG) program. Except for the use of Building 31A by the HS/RTG Program, Buildings 31 and 31A have been used for the same purpose since construction. Low-level radioactive wastes generated from environmental restoration, decontamination and decommissioning (D&D), wastewater treatment processes, and laboratory activities were stored, staged, and prepared for transportation in Buildings 31 and 31A prior to shipment offsite.

2.2 Current Uses of Buildings 31 and 31A

Buildings 31 and 31A are currently inactive. The equipment is in the process of being removed. All required equipment will be removed from the buildings (in accordance with 41 CFR 101-200), and any remaining equipment will be left in place and demolished/disposed of with the buildings. Safe Shutdown activities will be conducted prior to the commencement of demolition.

2.3 Summary of Environmental Concerns and Findings – Buildings 31 and 31A

Table 1: Summary of Environmental Concerns and Findings

Description	Comment	Resolution
Lead-Based Paint	No previous lead surveys or sampling data could be found for Buildings 31 and 31A. Since the buildings are scheduled for imminent demolition, painted surfaces will be tested for lead content as planned work indicates the need for such testing in order to avoid worker exposure to lead. Although untested paint coatings must be assumed to contain lead, the observed condition of the untested paint indicates that there are currently no lead paint hazards within the buildings. (Appendix J).	No further action would be necessary to protect occupant or worker health unless any coatings were to be disturbed by close worker contact (sanding, grinding, scraping, torch cutting, etc.). If these types of activities are planned, the affected paint coatings should be tested to verify the absence of lead. Waste Management performed worst-case scenario calculations to determine that building demolition debris containing lead-based paint meets the waste acceptance criteria at Envirocare, Nevada Test Site, and Stoney Hollow Landfill.
Chemicals	Appendix K provides a list of chemicals and products reportedly used or stored in Buildings 31 and 31A.	All chemicals will be removed prior to demolition, and dispositioned by Waste Management.
Fluorescent Lamps and PCBs	Fluorescent lamps were used in the building. Ballasts may contain polychlorinated biphenyls (PCBs).	Ballasts that may contain PCBs will be removed prior to demolition, and disposed of by Waste Management.
Air Emissions	N/A	N/A
Asbestos	During July of 2002 a comprehensive walk-through survey of all areas of Buildings 31 and 31A were performed in order to identify all asbestos-containing materials (ACMs) prior to demolition of the facility (Appendix I). Five fire-rated doors within Building 31 were assumed to contain asbestos and were identified as requiring removal prior to building demolition. No ACMs were identified in connection with Building 31A.	The five fire-rated doors will be removed in accordance with NESHAP requirements prior to commencement of demolition activities, and disposed of per Waste Management direction. All work will be performed in accordance with current state and federal regulations.
Drainage Sumps	N/A	N/A
Lead	N/A	N/A
Mercury	N/A	N/A

Table 1: Summary of Environmental Concerns and Findings

Description	Comment	Resolution
Radiological	Radiological contamination above surface release criteria was found in Building 31 (on the floor, in the insulation on the inside surface of the exterior walls, and under the insulation on the inside surfaces of the exterior walls), and on the truck dock. Extensive remediation of these structures is not considered practical. No contamination was found on Building 31A surfaces. The metal grates cannot be effectively surveyed in place on the ground. Radiological survey findings are presented in Section 2.4, and the Predemolition Characterization Report is provided in Appendix G.	The demolition debris from Building 31 and from the truck dock will be disposed of as low level waste. Demolition debris from Building 31A and the metal grates will be segregated into debris piles during demolition. All debris piles will be radiologically surveyed to determine disposition. Debris not meeting surface release criteria will be disposed of as low level waste. Demolition of Buildings 31 and 31A (superstructures and slabs), the truck dock, and the metal grates south of Building 31 will be handled as a CERCLA Removal Action in accordance with the Contingent Removal Action Addendum 1: Structures. The Fact Sheet and Core Team Recommendation authorizes the Removal Action.
Septic System	N/A	N/A
Wastewater	Handled by site wastewater facility.	N/A
Stains & Corrosion	N/A	N/A
Storage Tanks	N/A	N/A
Solid Waste Disposal	N/A	N/A
Migratory Hazards	N/A	N/A
Radon	Radon level is not applicable for open air demolitions.	N/A
HVAC	HVAC refrigerant will be drained and disposed of during Safe Shutdown.	No further action required.
Energetic Materials	N/A	N/A

Table 1: Summary of Environmental Concerns and Findings

Description	Comment	Resolution
Soil Contamination	Appendix L of industrial demolition BDPs traditionally provides a graphic showing all historic soil sample locations within 15 feet of the perimeter of a building, tables for detected and non-detected compounds, and a table of all soil sample results above screening levels. However, since Buildings 31 and 31A, the asphalt staging area, and the metal grating are within the boundary of PRS 267 (binned a Removal Action), the soil data for the entire area has already been evaluated and is not included in the scope of this effort.	The contaminated soil in PRS 267 will be removed per a separate Removal Action. For information regarding the evaluation of the PRS 267 soil data and the Core Team recommendation for a Removal Action, please refer to Potential Release Site Package, PRS 267, Final, August 2003. For details of the soil removal work, please refer to Work Package #ER/ST-04-010, PRS 267 Soils Removal. For details of the verification sampling and analysis, please refer to the Building 38 Area VSAP, Final, March 2004.
	In this BDP, Appendix L provides Figure 24 from the Building 38 Area VSAP. This figure shows the soil results by location of the specific areas of contamination in the vicinity. The removal of contaminated soil at the locations shown on the graphic will commence after the completion of the building removal described in this BDP.	
	The soil below and around the truck dock is not within the PRS 267 boundary and has not been evaluated.	As part of the building demolition project, soil sampling will be conducted per the Core Team approved Building 31 Dock Sampling and Analysis Plan (SAP). Verification of structure removal will be via photographs provided in the Structure On-Scene Coordinator (OSC) Report.

N/A: Not applicable

2.4 Radiological Information for Buildings 31 and 31A

A radiological assessment of Buildings 31 and 31A was performed by reviewing the operational history and preliminary radiological survey information. Although the two buildings were constructed at different times (Building 31 in 1965 and Building 31A in 1984), Buildings 31 and 31A share much of the same history. Building 31 was originally used to store recoverable plutonium wastes that had been moved from the SM storage field east of Building 21. Throughout its history it was used for interim storage of packaged radioactive waste waiting final disposition. Building 31A provided a location to store and stage low level waste containers prior to shipment from the Mound Plant. The containers are off loaded from Mound vehicles, inspected for damage and proper labeling, weighed, stored, staged for shipment, and reloaded onto transports for shipment to an approved waste disposal site.

Radiological contamination has been found in Building 31. The highest observed activity found (on the floor of Building 31) was 3,880,000 dpm/100cm^2 alpha (compared with surface release criteria of 100 dpm/100cm^2) and 180,000 dpm/100cm^2 beta (compared with surface release criteria of 5,000 dpm/100cm^2). Loose surface contamination was found at one location on the floor at 166 dpm/100cm^2 alpha (compared with surface release criteria of 20 dpm/100cm^2). The major isotope identified by alpha spec is plutonium–238. Contamination was also found in the insulating material on the inside of the exterior walls and on the walls under the insulation. Building 31 demolition debris will be disposed of as low level waste.

No contamination was found on Building 31A surfaces. The debris from Building 31A demolition will be placed into piles and radiologically surveyed to determine disposition. Debris not meeting surface release criteria will be disposed of as low level waste.

A characterization survey was performed on the truck dock. Elevated alpha measurements were observed at multiple locations. Four of the locations with the highest readings (ranging from 100 to 270 dpm/100cm^2) were acid etch sampled and found to be contaminated with Pu-238. The truck dock will be removed as low level waste. The fill material under the dock will be surveyed and sampled when it is accessible to determine if residual contamination is present under the dock.

The metal grates to the south of Building 31 were put in place to prevent disturbance of the soil, which is known to have areas that are contaminated with thorium-232. The grates will be radiologically surveyed to determine disposition. Grates not meeting the surface release criteria will be disposed of as low level waste.

A Predemolition Characterization Report for Buildings 31 and 31A, which includes the truck dock and metal grates, is provided in Appendix G.

Based on the above information, the Department of Energy determined that a Removal Action (RA) was warranted and the Core Team agreed to apply the Contingent Removal Action Memorandum Addendum 1. The RA contaminants of concern are plutonium-238 and thorium-232. The RA will consist of demolition and removal of the Building 31 and 31A structures and slabs, and the metal grates and truck dock south of Building 31, and shipping of debris to an approved disposal facility.

Buildings 31 and 31A, the asphalt staging area, and the metal grates are within the boundary of PRS 267 (binned a Removal Action). The soil data for this entire area has already been evaluated and is not included in the scope of this effort. For information regarding the evaluation of the PRS 267 soil data and the Core Team recommendation for a Removal Action, please refer to Potential Release Site Package, PRS 267, Final, August 2003. For details of the soil removal work, please refer to Work Package #ER/ST-04-010, PRS 267 Soils Removal. For details of the verification sampling and analysis, please refer to the Building 38 Area VSAP, Final, March 2004.

The soil below and around the truck dock is not within the PRS 267 boundary and has not been evaluated. Accordingly, as part of the building demolition project, soil sampling will be conducted per the Core Team approved Building 31 Dock Sampling and Analysis Plan

(SAP). Verification of structure removal will be via photographs provided in the Structure OSC Report.

3.0 SITE DESCRIPTION

3.1 Site/Vicinity Location and Characteristics

Buildings 31 and 31A are located at the DOE MCP site, formerly known as the Mound Plant. The MCP site is situated in the City of Miamisburg, Miami Township, Montgomery County, State of Ohio as shown in Appendix B.

The Mound Plant at one time was situated on approximately 300 acres of land and contained approximately 130 buildings with a total of approximately 1.4 million square feet of floor space (the number of buildings is constantly diminishing as buildings are decommissioned and either sold or demolished). The original 182-acre site, purchased by the Manhattan Engineering District in 1946, consisted of two hills and an intervening valley that runs approximately east and west. The 124-acre tract acquired in 1981 was an undeveloped mixture of fields and woods that undulates and slopes downward to the west, away from the main site. This area was acquired to serve as a buffer and has been used as a staging area and parking area for contractors working onsite.

To the west lie a railroad line and the north south trending Miami-Erie Canal. The northern boundaries of the site abut the residential area of Miamisburg, Ohio. Mound Road marks the northern half of the eastern perimeter of the facility then veers east, away from the southern half of the eastern boundary. A public golf course (belonging to the City of Miamisburg), the Miamisburg Mound Memorial Park, old agricultural fields, residential lots, and vacant wooded lots border the facility along Mound Road. Benner Road formed the southern property line of the Mound Plant (at the 300-acre stage), with agricultural fields and farms occupying the lands beyond.

3.2 Description of Structures, Roads, and Other Improvements in Proximity to Buildings 31 and 31A

Buildings 31 and 31A are adjacent structures with Building 31A located to the north of Building 31. The complex is bordered by an asphalt roadway and a down gradient grass-covered hillside on the north; an asphalt parking area and Building 126 on the northeast; an asphalt staging area, an asphalt roadway, and Building 128 on the east; a staging area covered by interlocking metal plates, a truck dock, and an asphalt roadway on the south; an asphalt roadway and Building 30 on the southwest; and an asphalt roadway and a down gradient hillside on the west (Figures 1 and 3). Buildings 36 and 37 were previously located to the east of the Building 31/31A complex, but were recently demolished.

3.3 Current and Past Uses of Buildings in Proximity to Buildings 31 and 31A

Buildings currently in proximity to Buildings 31 and 31A include:

- Building 126 (Power Systems Technologies [PST] Administration Building), located northeast of Buildings 31 and 31A, is a 12,500 square-foot single-story office building constructed in 2001.

- Building 128 (PST Boiler Building), located east of Buildings 31 and 31A, is a 900 square-foot single-story building that houses the boilers for the hot water heating system for Building 126 (and for the recently demolished Buildings 36, 37, and 50).

- Building 30 (Health Physics/Special Metallurgical [SM] Storage Building), located southwest of Buildings 31 and 31A, is a 740 square-foot single-story structure which has housed a counting facility for the analysis of radionuclides, a scanning facility for drums and boxes of radioactively contaminated materials, and prior to that, an office/storage facility for SM area storage. This building is in the process of Safe Shutdown and is scheduled for demolition in 2004 under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) removal action process.

- Building 33 (Maintenance/Storage Facility), which was located south of Buildings 31 and 31A, was a 1,344 square-foot single-story slab-on-grade structure that was originally used as a maintenance shop and was later used as a maintenance and storage facility for the Decontamination and Decommissioning (D & D) process. The building superstructure was demolished in February 1998 as an industrial demolition project. The slab and foundation will be removed with the Building 38 soil removal action.

Buildings previously in the vicinity of Buildings 31 and 31A

- Building 36 (PST Assembly and Testing Support Facility), demolished in January 2004, had been located east of Buildings 31 and 31A. It was a 4,255 square-foot single-story structure with a penthouse that supported the general purpose heat source (GPHS) assembly and testing program. Building 36 was demolished as an industrial demolition project. Radiological contamination was discovered on the surface of the dock outside of Building 36 (as detailed in the Building 36 Dock Fact Sheet, April 2004).

- Building 37 (Heat Source Testing Facility), demolished in March 2004, had been located east of Buildings 31 and 31A. It was a 2,464 square-foot single-story structure with a penthouse that was used for three purposes: research, development, and production in conjunction with the US Advanced Battery Consortium; converting processes with freon and other hazardous materials to processes that use safer materials; and a machine shop in support of the heat source program. Building 37 was demolished as an industrial demolition project.

- Building 88 was a 7,200 square-foot, single-story modular structure that was located to the northeast of Buildings 31 and 31A. It was constructed in 1984 to provide administrative offices for the RTG program, and demolished in April 2000 to make room for the construction of Building 126. Other projects that were located in

Building 88 include the Health Physics group, and later the Environmental Restoration (ER) project. The Building 88 demolition effort was considered an industrial demolition, however the Core Team waived the requirement to generate a Building Data Package per the Core Team meeting of December 1999.

- SM Building was a 21,700 square-foot, single-story metal structure with a penthouse that was located southeast of Buildings 31 and 31A. It was constructed in 1963 as a plutonium production facility. In 1972, a decontamination and decommissioning project removed the interior of the building along with the soil beneath the floor. During the 1990s, the outer shell of the building was taken down, with the last remnants being removed in 1995 under the CERCLA removal action process. Approximately 60 to 100 feet of the SM Building foundation remains near the former Building 38 stack location. It will be removed with the Building 38 soil removal action.

- Buildings WH-3/WH-4 (Warehouses 3 and 4) were temporary structures built in 1947 and demolished in 1949 (WH-3) and in the 1950s (WH-4). The buildings were constructed with wood-framed exterior walls and sat on wood pilings. Building WH-3, which had approximately 5,050 square-feet of floor space, may have been used as a storage warehouse, and Building WH-4, which had approximately 3,150 square-feet of floor space, may have been used as an office. Both buildings were located north of Buildings 31 and 31A.

- Buildings WH-5/WH-6 (Warehouses 5 and 6) were temporary structures built in 1947, and demolished in 1949. WH-5 was used as a garage and had approximately 6,000 square feet of floor space. WH-6 was used as a repair shop and had approximately 2,800 square feet of floor space. These structures were located in the approximate location of the current Buildings 31 and 31A.

- Building WH-14 (Warehouse 14), was a temporary structure built in 1947 and demolished in 1966 or 1967. The building, which was located south southwest of Buildings 31 and 31A, was used for storage and had approximately 6,100 square feet of floor space. In the early 1950s, Warehouse 14 was used for the storage of polonium-contaminated equipment from the Dayton Units. In May and June of 1965, approximately 485 drums of plutonium-contaminated materials were moved to Warehouse 14 and to the open area east of where Warehouse 14 was located. These materials were relocated to Building 31 in 1966.

It is unclear as to how the residual radiological contamination present in Building 31 was introduced into the building. It is believed that the contamination is a result of the building uses, which were to store, stage, and prepare for offsite shipment low-level radioactive wastes generated from SM Building, the thorium drum storage area, D&D projects, ER projects, wastewater treatment processes, and laboratory activities.

4.0 RECORDS REVIEW

4.1 General/Historical CERCLA Information

In compliance with permit requirements under Resource Conservation and Recovery Act (RCRA), the Clean Water Act (CWA), the Safe Drinking Water Act (SDWA), and the Clean Air Act (CAA), Mound Plant has applied for or has received permits for its surface water discharges, air emissions, and hazardous waste program. The site also maintains a National Pollutant Discharge Elimination System (NPDES) surface water discharge permit with Facility I.D. number OH 0009857. Operations that produce particulate or vaporous emissions are either permitted or registered with RAPCA and the Ohio Environmental Protection Agency (OEPA). The site also submits annual Emergency and Hazardous Chemical Inventory forms to OEPA, pursuant to the Superfund Amendment and Reauthorization Act (SARA), Title III, the Emergency Planning and Community Right-to-Know Act. The March 2002 version of this report indicated that no reportable chemicals are stored in Buildings 31 and 31A.

The Mound Plant was identified as a contaminated site on the National Priorities List (NPL) under CERCLA (Superfund) in 1989. The Mound Plant was originally listed due to volatile organic compound (VOC) contamination in the western end of the lower valley area. The cleanup of the site was originally to be accomplished under the CERCLA mandated procedures for regulating Superfund Sites using the operable unit (OU) system to define and characterize cleanup areas. As the cleanup effort went forward, it became apparent that the site did not fit the profile for a cleanup strategy based on the operable units. The DOE, the United States Environmental Protection Agency (USEPA), and OEPA designed a new decision making process for the cleanup of the site.

The new process is known formally as a "removal site evaluation process" and informally as the "Mound 2000 Process." For a more detailed description, refer to the *Work Plan for Environmental Restoration of the DOE Mound Site, the Mound 2000 Approach*. The Mound 2000 Process system divided the site into geographical parcels containing more than 400 PRSs with approximately equal numbers of PRSs concerned with potentially contaminated soil and with potential contamination in or associated primarily with building operations. A PRS is an area where knowledge of historic or current use indicates that the site may have had releases of radioactive and/or hazardous materials. The PRSs were initially identified and documented as part of the Mound site scoping process under the Federal Facility Agreement (FFA). The original list of PRSs can be found in the OU9- Site Scoping Report Volume 12, Site Summary Report, 1994. One of the objectives of the Site Scoping report was to provide a comprehensive summary of PRSs identified through the scoping process. Subsequent to the 1994 Site Scoping Report, additional PRSs have been identified as information became available. The assignment of a PRS does not necessarily mean that there is a threat to human health or the environment. The tabulation of all PRSs simply provides an explicit means of tracking and evaluating all potential releases onsite, the need for further action, and the identification of the authority responsible for action.

Through the process described above, the specific PRSs in the vicinity of Buildings 31 and 31A (Section 4.2.3) are listed in Table 2 along with their binning status. Their locations are

shown on Figure 2. Of the five PRSs in the vicinity of Buildings 31 and 31A, one is an active Removal Action (RA); one is a completed RA; two have been determined by the Core Team to require No Further Assessment (NFA), and the remaining PRS (for the Building 31 structure itself) is unbinned. For a PRS to be binned NFA or as a completed RA, the Core Team has reviewed the PRS data and agrees that all existing environmental issues associated with that PRS have been resolved and the PRS is protective of human health and the environment. No other PRSs associated with Buildings 31 and 31A have been identified.

4.2 Specific Record Sources for Buildings 31 and 31A

4.2.1 Occurrence Reports

A search of the occurrence reporting system revealed six reports, all of which were minor and without environmental impact

Building 31

- legacy contamination on pad outside WD Building (The stanchions of a trailer that was located on the pad were contaminated, and the trailer was moved to Building 31 for storage and disposal) (Appendix M);
- Building 31, ruptured sprinkler line (Appendix M);
- boxes of contaminated soil slide off a flatbed truck during onsite transport (this incident did not take place in the vicinity of Buildings 31 or 31A).

Building 31A

- discovery of inadequate safety analysis;
- noncompliance with safety authorization basis for transuranic waste transfer (USQ);
- leak in sprinkler system line in Building 31A (audible air leak coming from the 'dry' sprinkler fire suppression system. Leak was not large enough to activate the water release valve).

4.2.2 Spills and Releases

- None

4.2.3 Associated PRS Overview

As a result of the investigations and documentation accomplished to comply with the CERCLA cleanup process via the Federal Facilities Agreement (FFA)/DOE ER Program, DOE and the site contractor tabulated all the PRSs identified under the various regulatory programs in effect at the site. Five PRSs are at or near Buildings 31 and 31A, as identified in Table 2. The PRS locations are shown on Figure 2, and recommendation sheets are provided in Appendix N.

Table 2 - PRSs in Proximity to Buildings 31 and 31A

PRS	CERCLA or Bldg. Related	Binning Status	Comments
266	CERCLA	RA Complete	Area 8, Thorium-Contaminated Soils from Area 1 and 9
267	CERCLA	RA	Area 9, Thorium Storage and Redrumming Area
268*	Building	Unbinned	Building 31, Contaminated Material Storage Building
392	CERCLA	NFA	Elevated Soil Gas Location
394	CERCLA	NFA	Elevated Soil Gas Location

- *Building 31 (PRS 268) will be demolished and removed per the Contingent Removal Action, Addendum 1 Structures; the Core Team recommendation is provided in Appendix N. After completion of the demolition activities described in the Work Package (Appendix O), the Removal Action will be closed out via a Structure On-Scene Coordinator (OSC) Report.*

  The soil below and around Buildings 31 and 31A are within the PRS 267 boundary, which is binned a Removal Action. Documentation of the soil removal action activities will be provided in the Building 38 Soil OSC Report.

4.3 Review of Building Prints

Building prints were reviewed and no significant items were identified. Floor plans are included in Appendix D.

4.4 Aerial Photographs

Aerial photographs from 1965 (prior to construction of Building 31), 1968 (following construction of Building 31), 1983 (prior to construction of Building 31A), 1994 (following construction of Building 31A), and 1996 (most recent aerial photo) were reviewed and no significant items were identified. Aerial photographs are presented in Appendix E.

4.5 Interviews

Past Building Manager, L.T. Lamsa, was interviewed via a building manager questionnaire (included in Appendix F). The current Building Manager, Gary Weidenbach, was also interviewed regarding past facility operations and current conditions. No significant items in the building were identified based on the questionnaire or interviews.

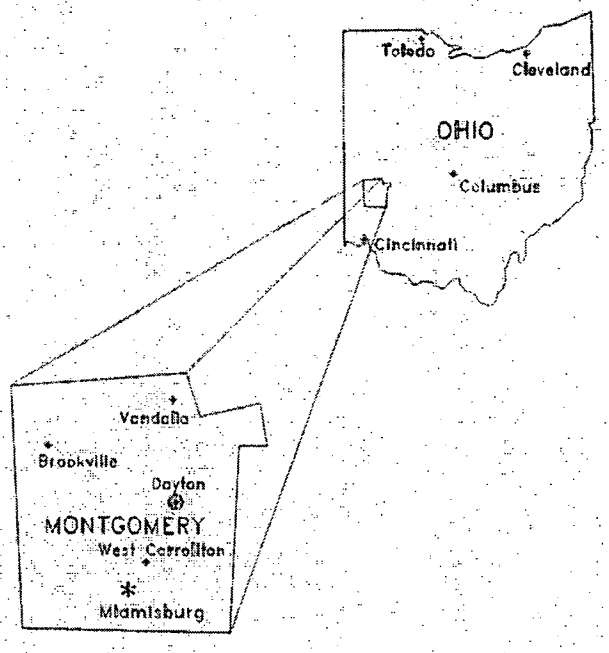
Appendix A

General Listing of Acronyms

ASTM	American Society for Testing and Materials
BDP	Building Data Package
CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response, Compensation & Liability Act
cm^2	centimeters squared
CWA	Clean Water Act
DOE	United States Department of Energy
DPM	disintegrations per minute
EPA	United States Environmental Protection Agency
ER	Environmental Restoration (Program)
FFA	Federal Facility Agreement
HAZMAT	hazardous materials
MARSSIM	Multi-Agency Radiation Survey and Site Investigation Manual
MCP	Miamisburg Closure Project
N/A	not applicable
NPDES	National Pollutant Discharge Elimination System
OEPA	Ohio Environmental Protection Agency
OU	Operable Unit
PCB	polychlorinated biphenyl
pCi/L	picoCuries per liter
PRS	Potential Release Site
RI/FS	Remedial Investigation/Feasibility Study
RAPCA	Regional Air Pollution Control Agency
RCRA	Resource Conservation and Recovery Act
RSDS	Radiological Survey Data Sheet
SARA	Superfund Amendments and Reauthorization Act
SDWA	Safe Drinking Water Act
USEPA	United States Environmental Protection Agency
VOC	volatile organic compound

Appendix B

Map of Montgomery County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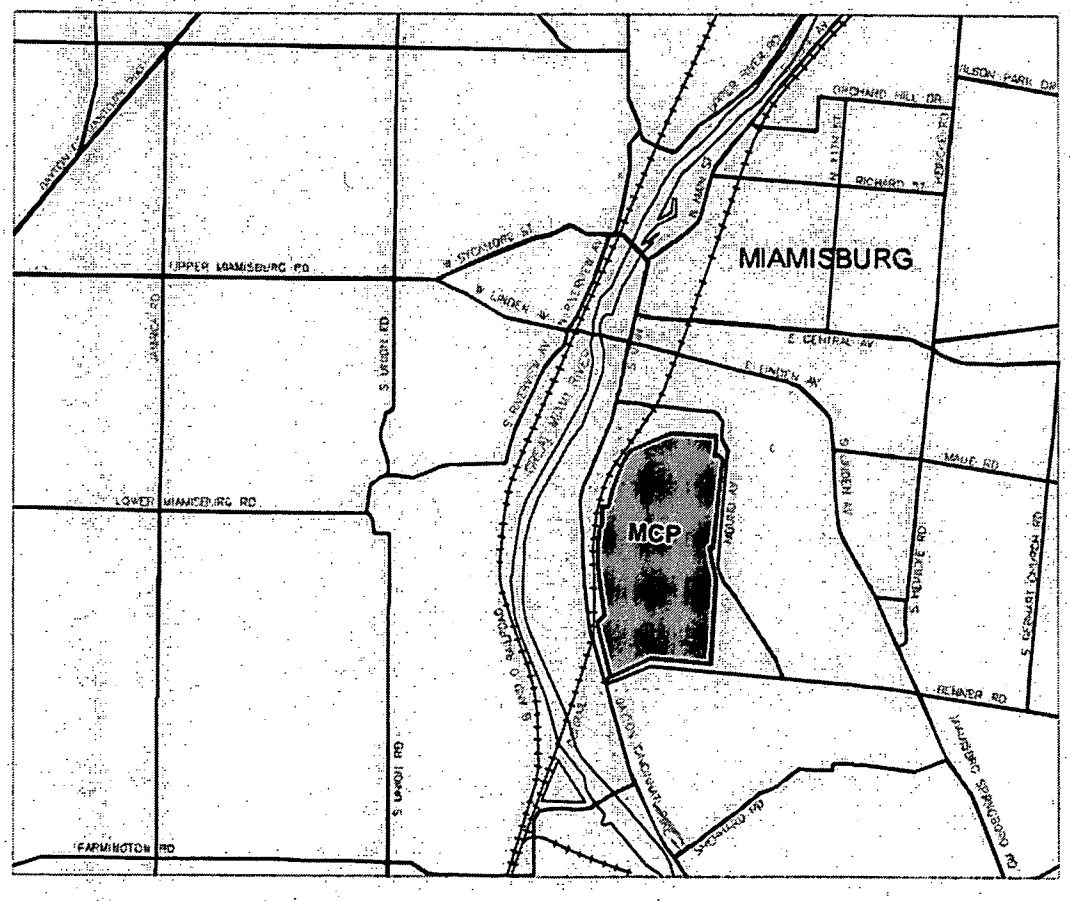
Cleveland
OHIO
Columbus
Cincinnati
Vandalia
Brookville
Dayton
MONTGOMERY
West Carrollton
Miamisburg


MIAMISBURG
MCP
UPPER MIAMISBURG RD
LOWER MIAMISBURG RD
FARMINGTON RD
S UNION RD
S LAND RD
W SYCAMORE ST
W LINDEN AV
E CENTRAL AV
E LINDEN AV
MAUL RD
REMNER RD
RICHARD ST
ORCHARD HILL DR
WILSON PARK DR
S DEFIANCE RD
S VERNER RD
HOUSER AV
SYCAMORE RD
DAYTON PACIFIC RR
UPPER RIVER RD

B 1 of 1

Appendix C

Figures

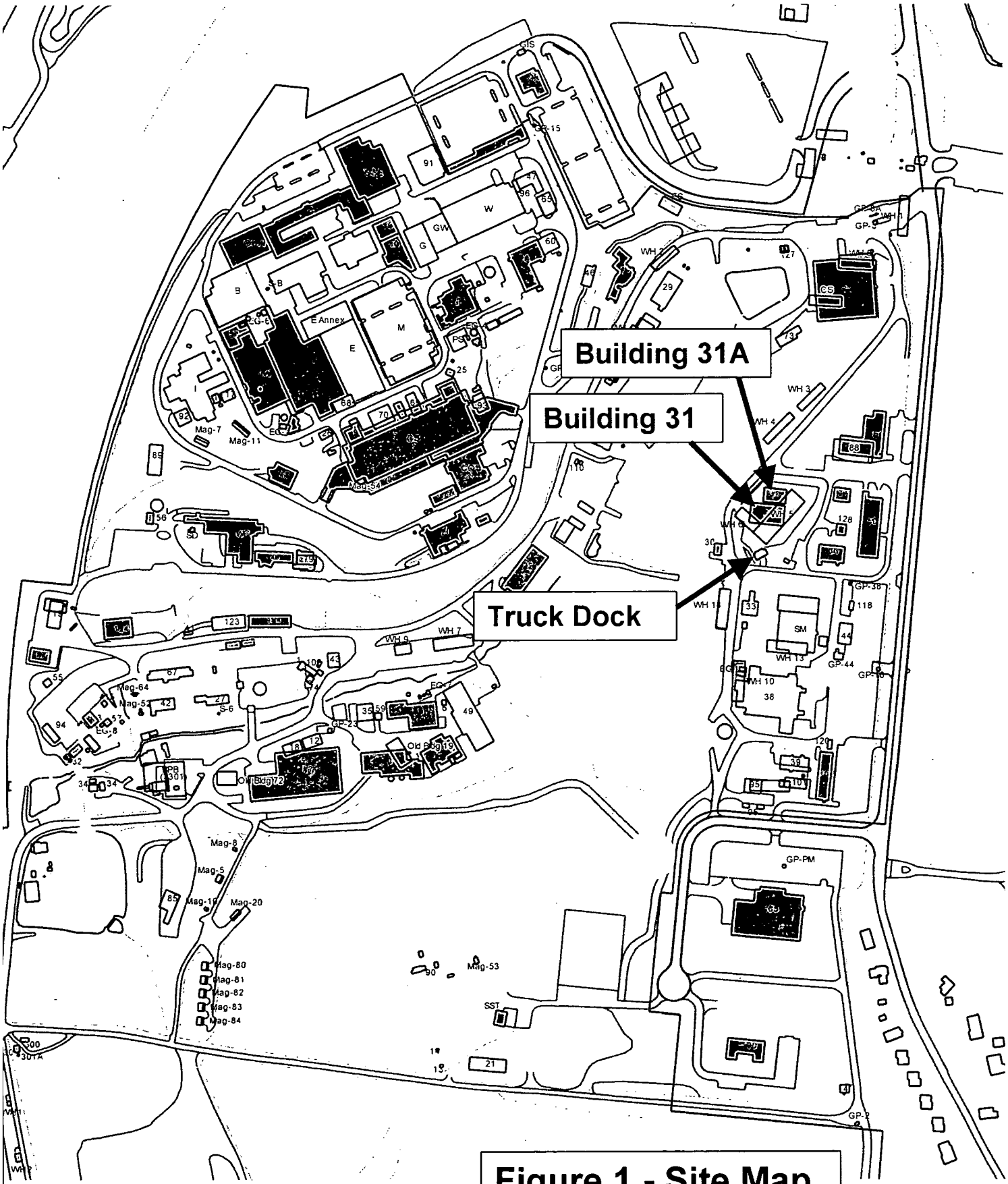
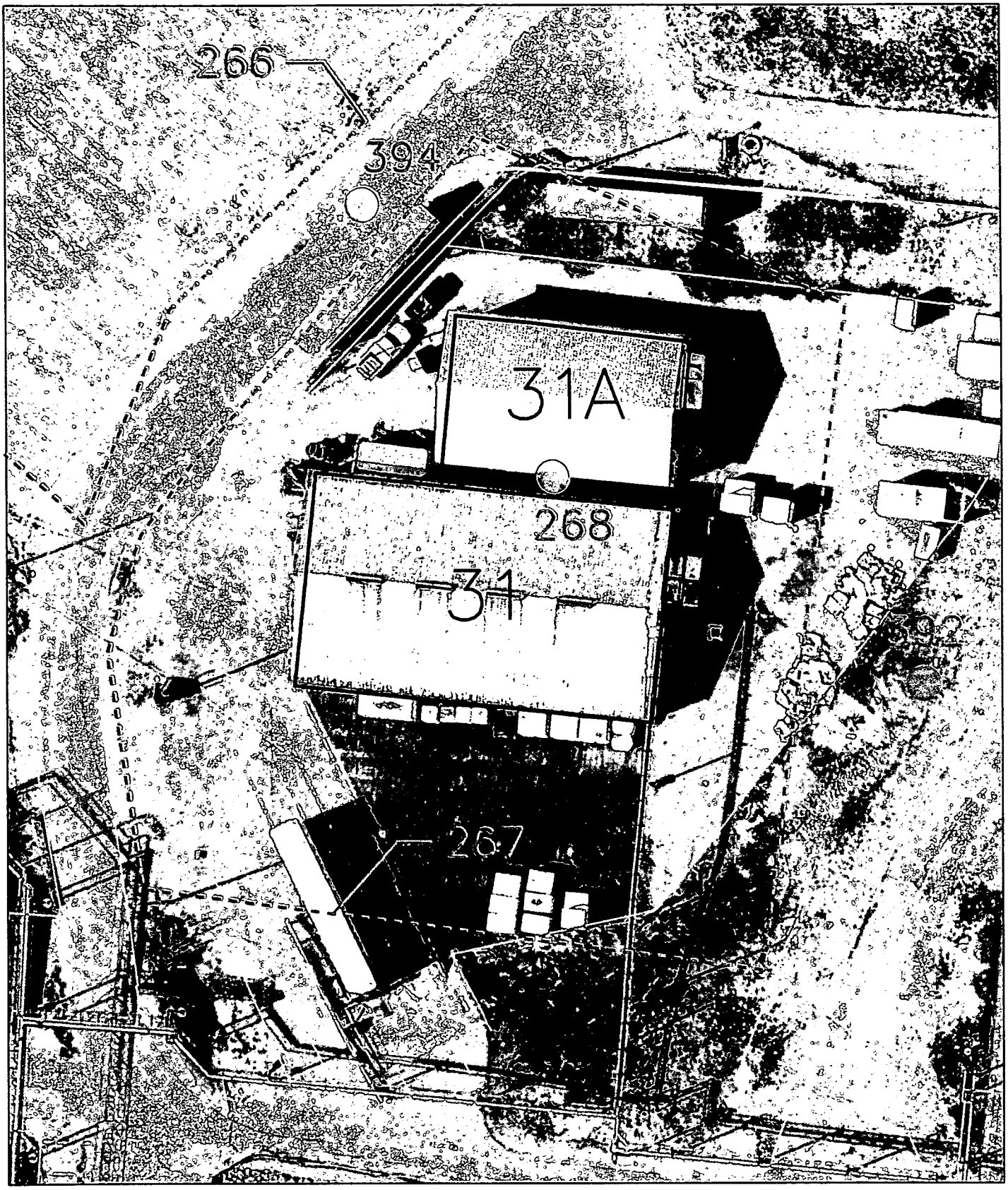


Figure 1 - Site Map



PRS Point

PRS Area

PRS Line

MOUND

Environmental Restoration Geographic Information System

SHEET	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
ISSUE																					
SHEET	1	2	3	4	5	6															
ISSUE																					

PART CLASSIFICATION

Figure 2
Building 31/31A
and Vicinity

DOCUMENT CLASSIFICATION: UNCLASSIFIED

SIZE | DRAWING NUMBER: vicinity.dgn | JOB NUMBER

DGN TYPE: STE | PROJ: ER-GIS | DATE | SCALE | SHEET 1 OF

STATUS: MD-REL-**/**/** | ORIGIN: MSTATION / J

ISS	DATE	REVISION	BY	CHKD	DWN	DRFT	APVD	⊥
	05/06/04		SSF					

C2of4

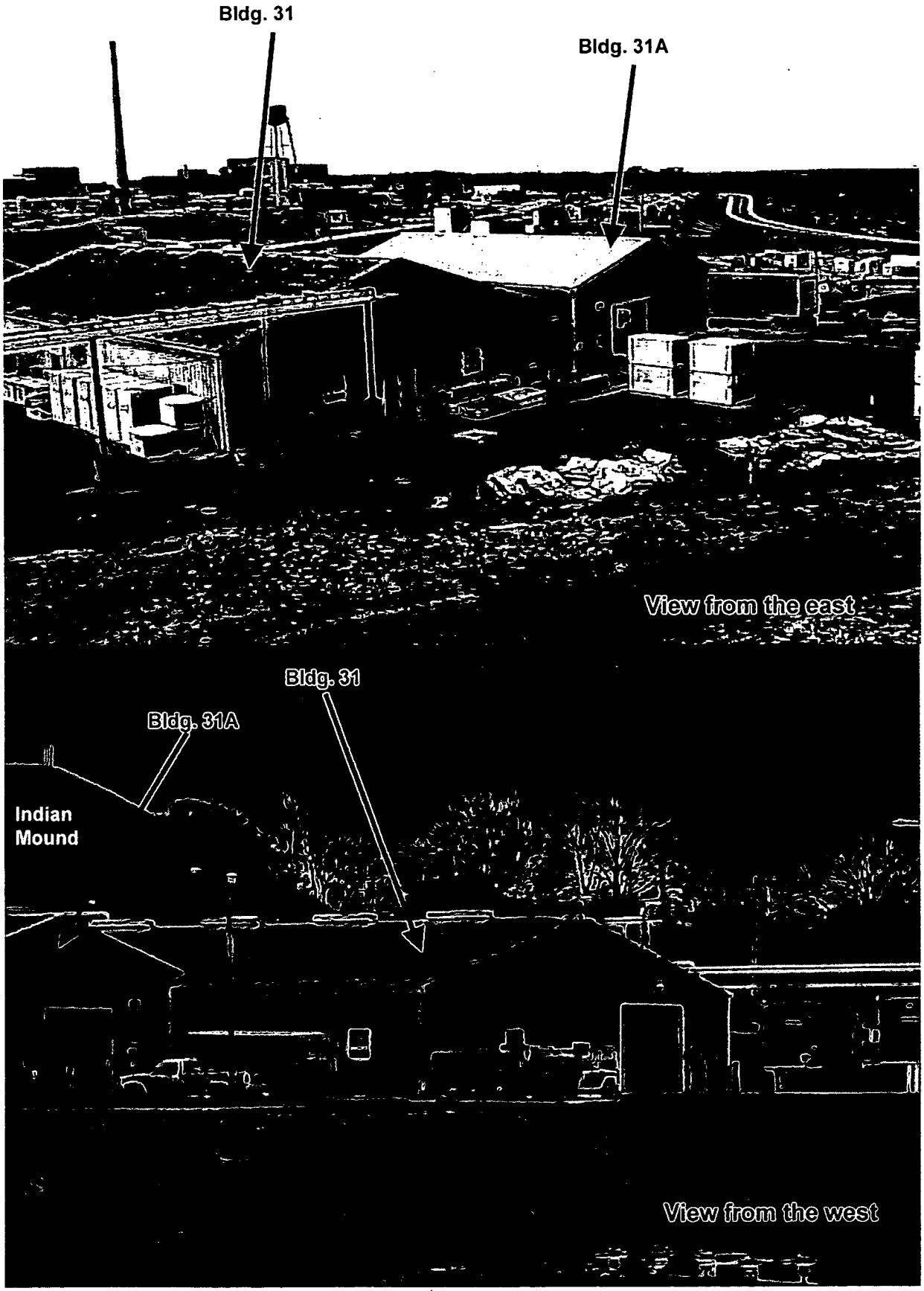
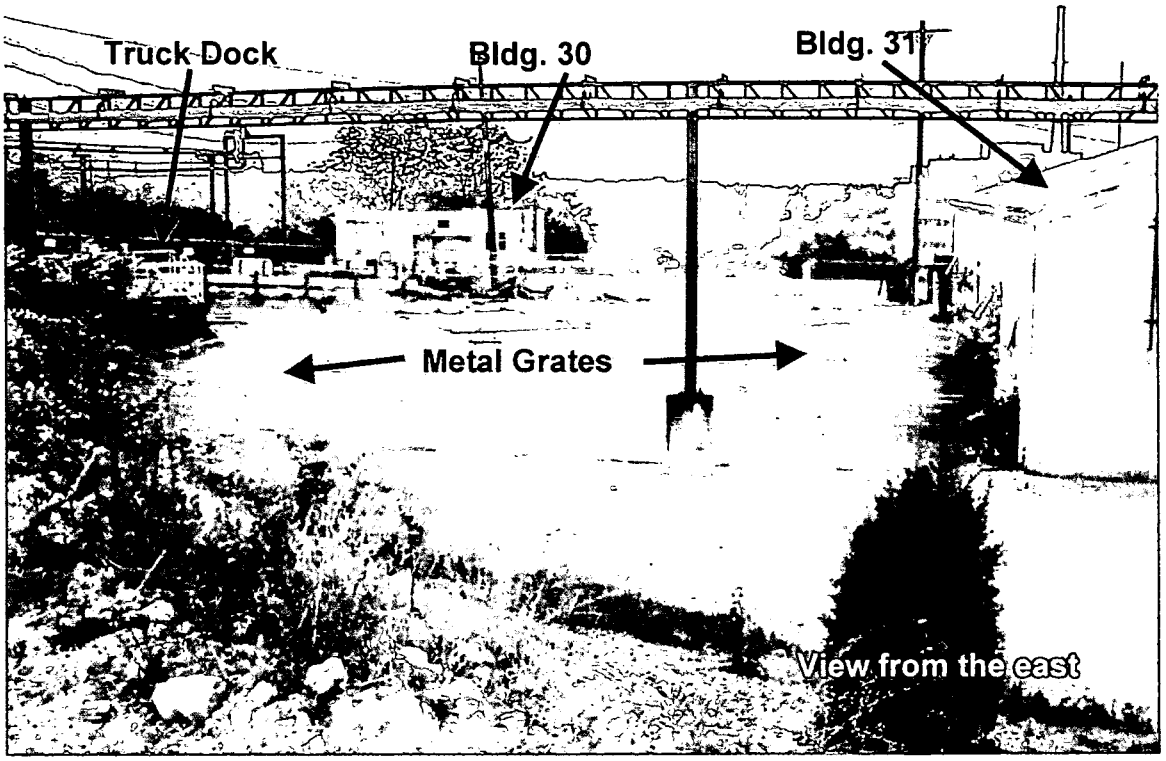


Figure 3A – Buildings 31 and 31A

C 3 of 4



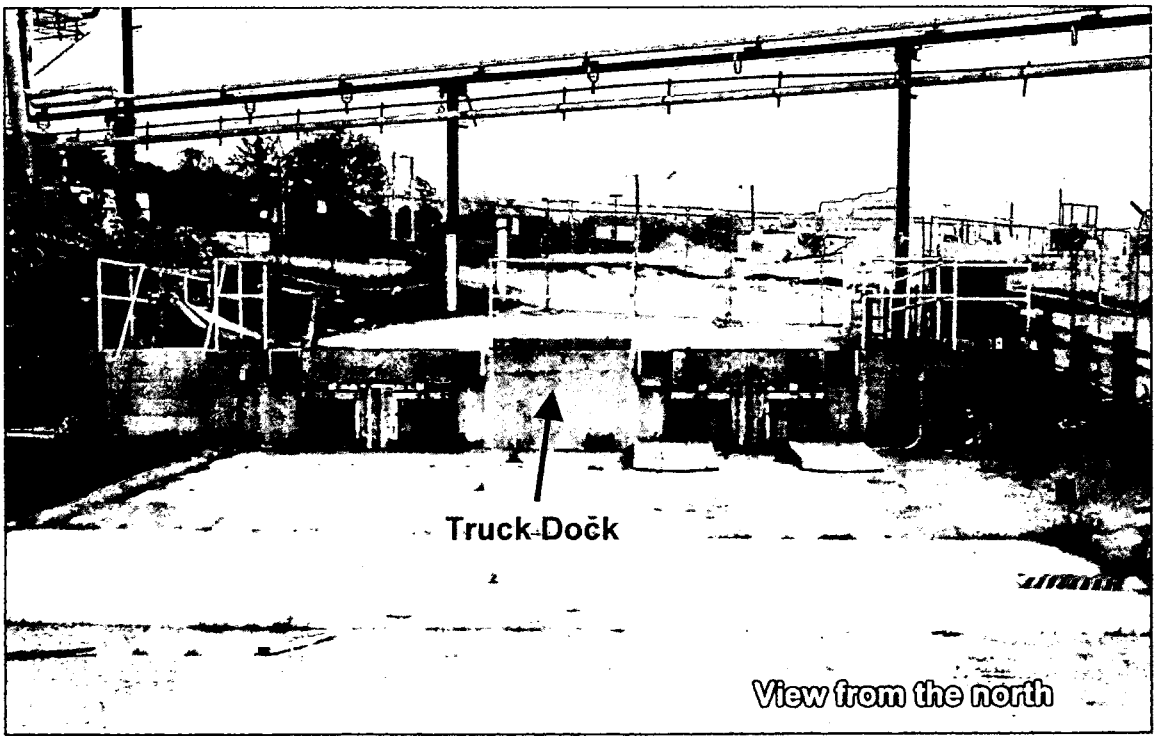


Figure 3B – Metal Grates and Truck Dock

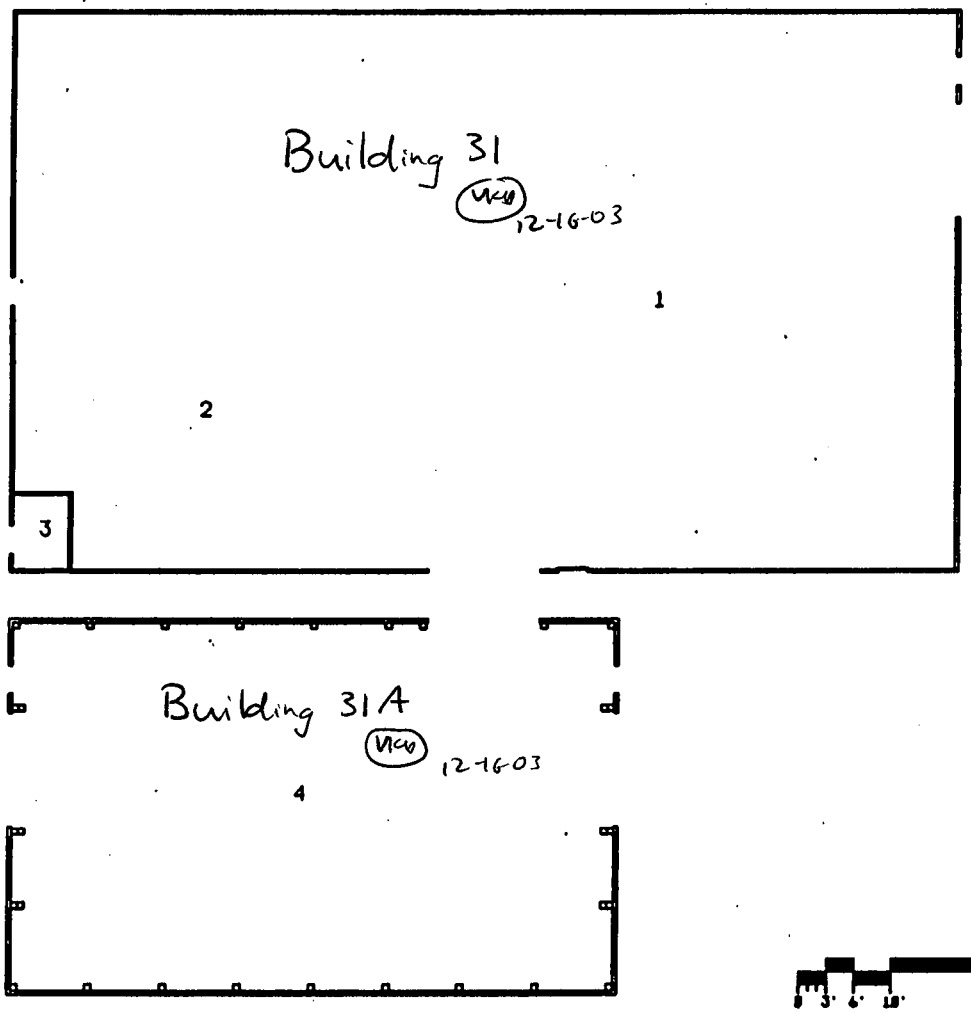
Appendix D

Floor Plans

REV	DATE	REVISION	BY	CHKD	CHD	LPMGR	APVD	R
0	12/12/91	ASBUILT ISSUE	DCB				DVD	

BLDG. 31-31A
OFFICE MODULE

Previously removed
VKO 12-16-03



UNCLASSIFIED & NON-SENSITIVE
Reviewed by Mound Declassification Office. Reviewer Initials ADM

VKO 12-16-03

N

0 3' 6' 18' 28'

BLDG #31
FIRST FLOOR
BLDG CODE:3031

APPROVALS: DATE:
SAFETY COMMITTEE REQUIRED:
___NONE ___TRUEDOC ___TEDOC ___DOOC
TECH. REP.
DR. MGR.
TRUEDOC
TEDOC
DOOC

SHEET	1	2	3	4	5	6
ISSUE	0					

TITLE (U) TITLE CLASSIFICATION
BLDG #31
FLOOR PLANS

PART CLASSIFICATION

DRAWING CLASSIFICATION: UNCLASSIFIED | SIZE: C | DRAWING NUMBER: FSC911243 | JOB NUMBER: 12335

DWG TYPE: SFP | FROM: BLDG #31 | CODE: 14865 | SCALE: AS NOTED | SHEET 1 OF 1

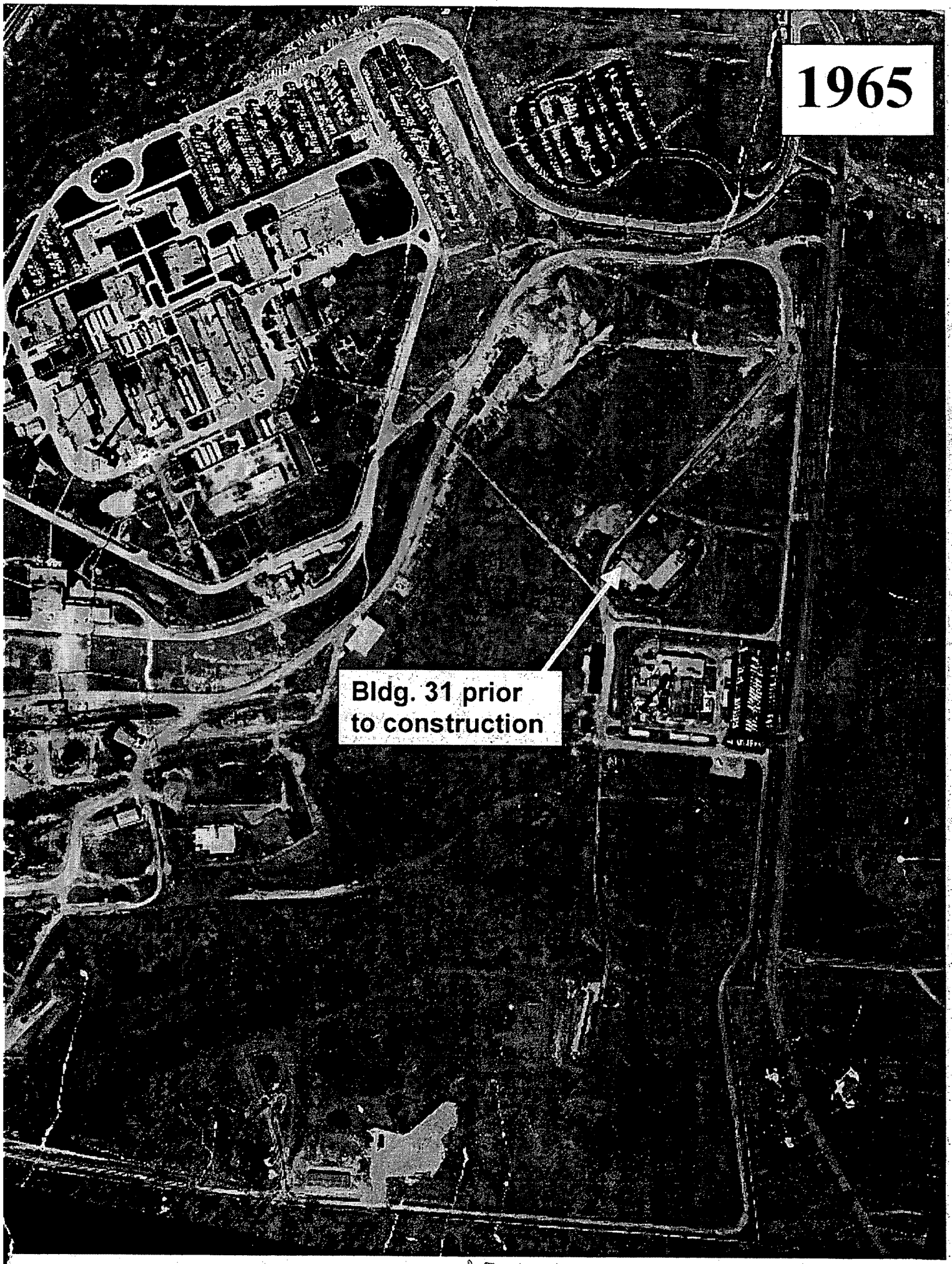
CREATED: MO-REL-12/12/91 | DRAWN: MO-BR3-V3.0

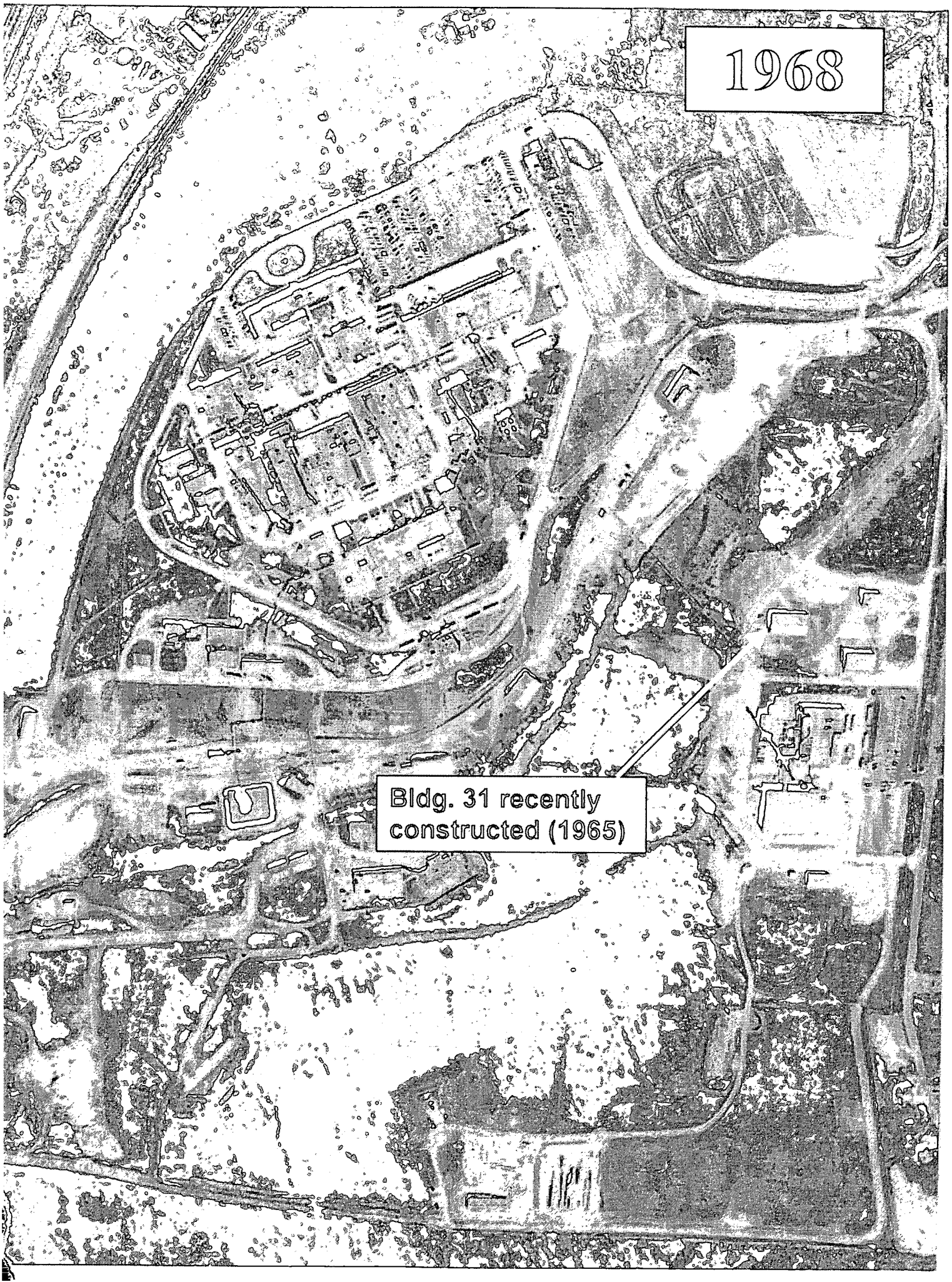
DESIGN ENG | PROJ MGR
SPONS | ENG SUPV
S/P & QC | PROJ REV
ENG MGR
APVD | DATE

1 of 1

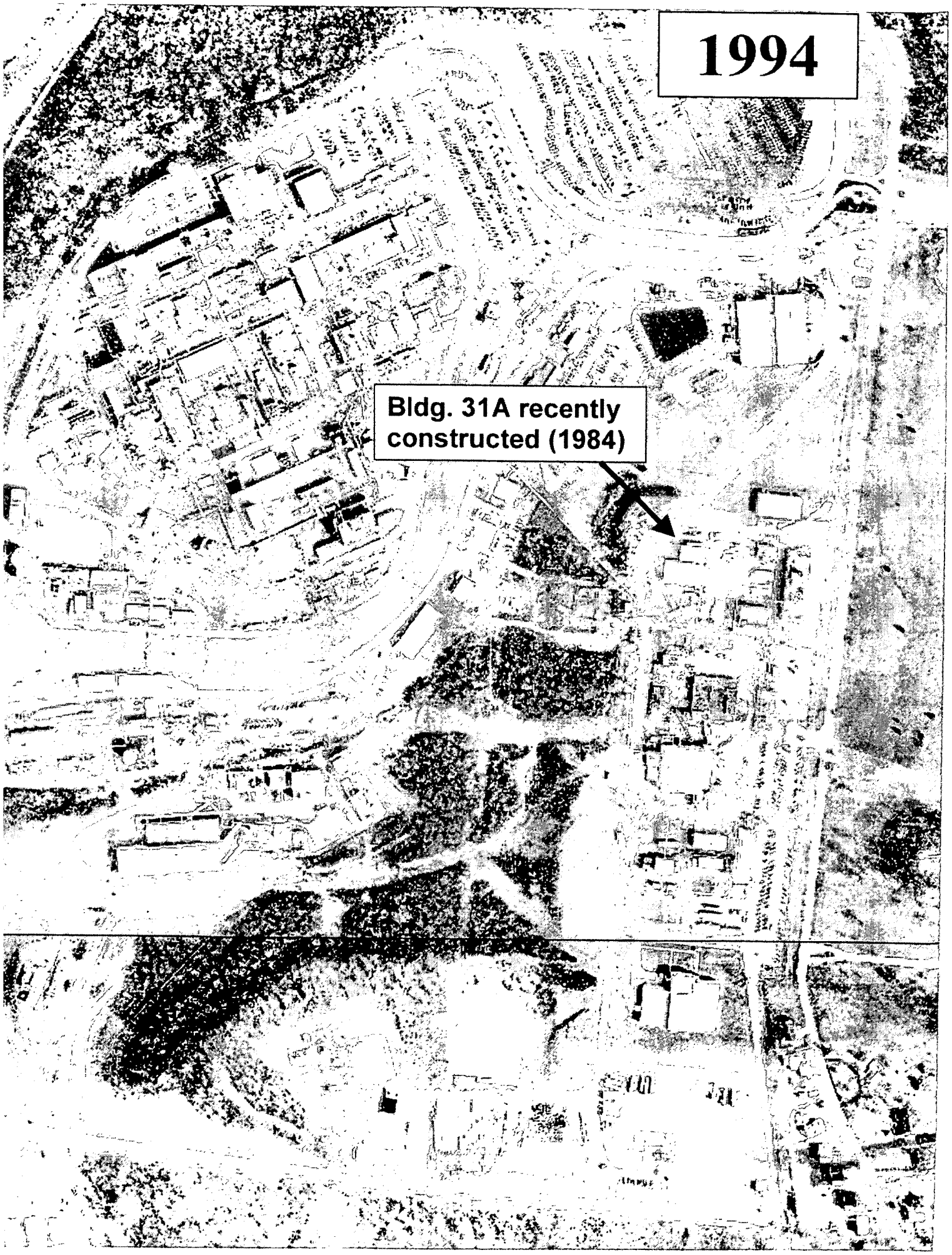
Appendix E

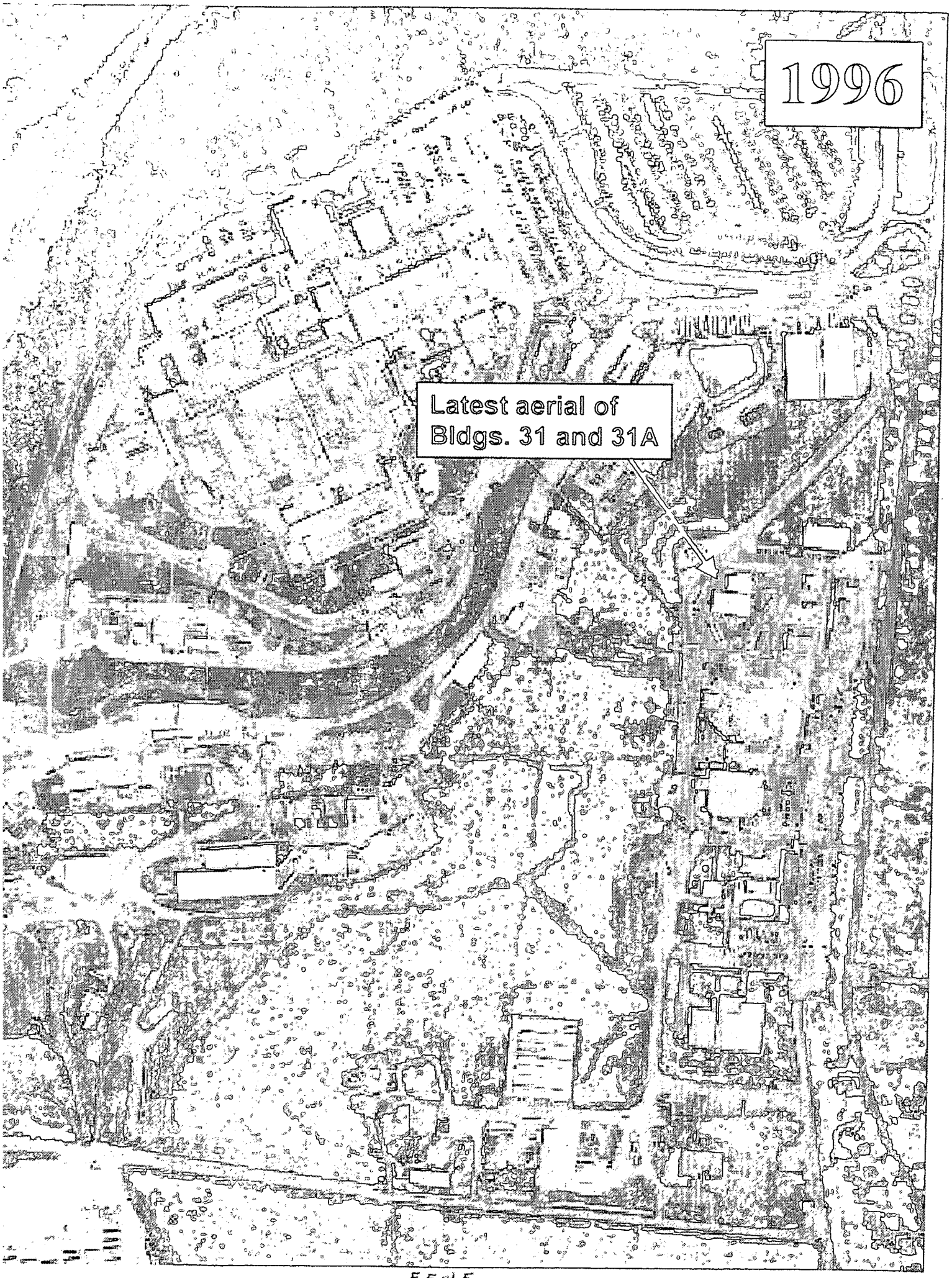
Aerial Photographs


1965
Bldg. 31 prior
to construction


1968
Bldg. 31 recently constructed (1965)

E 3 of 5


1994
Bldg. 31A recently constructed (1984)


1996
Latest aerial of
Bldgs. 31 and 31A

Appendix F

Environmental Appraisal Report of the Mound Plant (excerpt)

	Pages
• Building 31	F1 through F48
• Building 31A	F49 through F93

The Environmental Appraisal Report was prepared in 1996 and documents the observed conditions at the time of the inspection. Information provided in the Building Data Package text supercedes information provided in this appendix.

Based on a review by subject matter experts, hand-written corrections have been made to the report provided in this appendix.

9.54 BUILDING 31

9.54.1 Scope of Building 31 Report

In late 1995 and the early months of 1996, EG&G MAT performed a review of environmental conditions at the Mound Plant. The purpose was to develop a performance baseline, and to identify areas for improvement on a building and a sitewide basis. EG&G MAT did not perform a "due diligence" or Phase I Environmental Site Assessment as specified by ASTM 1527 or ASTM 1528. The scope of the appraisal effort and a discussion of the appraisal methodology are detailed in Sections 2.0 and 5.0, found in Volume 1 of this report.

The appraisal team performed a walk-through of Building 31 on January 24, 1996. The Environmental Appraisal Checklist (EAC) was used to record findings. The EAC is found in Attachment 1 (Section 9.54.6.1). Escorting the appraisers was the building manager and other knowledgeable personnel such as the process owner. Other information was supplied by the building manager and recorded on the Building Manager's Questionnaire (BMQ), included as Attachment 2 (Section 9.54.6.2).

9.54.2 Description of Building 31

Building 31 is a 6,090-square-foot, prefabricated metal building with a metal roof. The building is bordered by a road to the west, a staging area to the east, Building 31-A to the south, ~~and a road to the north~~. The location is shown in Attachment 3 (Section 9.54.6.3).

Floor plans are presented as Attachment 4 (Section 9.54.6.4). The facility has heating and air conditioning systems of central steam and chilled water. The building has a fire sprinkler system (*Mound Facility Physical Characterization*, 12-1-93).

Building 31 was constructed in 1966. The building has been used for the same purpose since construction. The building is not known to be contaminated with radioactive or energetic materials (*Mound Facility Physical Characterization*, 12-1-93).

9.54.3 Summary of Findings

Building 31 houses low-level waste (LLW) storage and staging activities. The building is well-maintained, but has several issues of environmental concern identified during the walk-through or during review of reference materials.

9.54.4 Observations

9.54.4.1 Air Emissions

There are no air emission sources included in the LLW storage process. No air emission permit applications have been submitted to the Regional Air Pollution Control Agency (RAPCA) for

activities in the building. There are no fuel-burning units in the building. There is no evidence of fugitive dust.

9.54.4.2 Wastewater Emissions

The Mound Facility has three wastewater collection systems: a sanitary wastewater system; a storm water system; and a radioactively contaminated process wastewater system. Sanitary wastewater is treated at an onsite tertiary treatment plant and subsequently discharged by hard pipe to the Great Miami River. Storm water and any non-process wastewater, single pass cooling water, and softener backwash may be discharged directly to the Great Miami River, via the Miami-Erie Canal,* or may be diverted to a 3.1-million-gallon holding pond for settling prior to discharge. Radioactively contaminated wastewater is treated in Building WD by physical-chemical treatment. If appropriate, wastewater may be discharged by hard pipe to the Great Miami River. If concentrations of radioactive contaminants cannot be reduced to acceptable levels, wastewater is solidified and shipped to the Nevada Test Site or Envirocare for disposal. All outfalls are permitted under an active NPDES permit. Routine monitoring activities are in place. Based on NPDES monitoring report data reviewed, it appears that the facility is in compliance with qualitative and quantitative conditions of the permit.

*Subsequently, MCP effluent was re-routed around the canal via a covered pipe to the Mound Overflow Creek. D.C. Kramer 5-12-04

9.54.4.2.1 Sanitary

The building does not have sanitary services. There is a portable toilet located behind the building on the northeast side. ~~There is minimal wastewater routinely generated or occurring from spills in the process of storing LLW. This wastewater which comes from waste containers storing sludge is collected in a sump and sent to either Building WD or the sanitary treatment plant, based on characterization or process knowledge.~~ PER STEVE SARRIS, WASTE MANAGEMENT TECHNICIAN, 11-18-03, WASTE WATER WAS NOT GENERATED OR DID NOT OCCURE FROM SPILLS IN THE PROCESS OF STORING LLW IN BLDG. 31. IN ADDITION, BLDG. 31 DID NOT HAVE A SUMP. Don Kramer 11-18-03

9.54.4.2.2 Storm

The building is serviced by storm drains according to the diagram of underground utility lines presented as Attachment 5 (Section 9.54.6.5). There are no interior connections to the storm system. Roof drains discharge to the storm system. Exterior grates and drains were not tested to confirm that they connect to the storm drainage system. Inspection showed no sign of odors, colored discharges, or scarring which would indicate that any materials other than storm water has entered the storm drainage system.

9.54.4.2.3 Process Wastewater

There is no process water that drains from the building. Boxes of solidified sludge classified as LLW had been stored outside the building for approximately six years. Free liquid had accumulated inside the containers. The metal box and 192 others were drilled in the fall of 1995. The liquid was drained into paint trays, then poured into new empty LLW drums. Three of the drums were stored outside and one was stored inside the building. It could not be determined where the other drums were located. The drums were marked in accordance with current procedures.

9.54.4.2.4 Chemicals

Minimal amounts of chemicals are stored and used in Building 31. A list of chemicals found in Building 31 is included in the BMQ. The information was gathered as part of the chemical inventory which is conducted annually. The inventory information dates to 1994. Confirmation of the 1994 inventory was not attempted as the current inventory was still in process. Storage, handling, and disposal of chemicals listed in the BMQ were reviewed to assure conformance to regulations in 40 CFR 122, 40 CFR 261-265,268, and 29 CFR 1910. Chemical storage and handling procedures are in place for proper disposal of chemicals. There is no evidence that chemicals enter the storm or sanitary drains. There have been no reported spills from Building 31.

9.54.4.3 Potable and Service Water

Potable water is not supplied to the building. Two portable water coolers that use bottled water were available for drinking. According to Environmental Protection Agency (EPA) protocol, annual sampling criteria do not require testing of each water cooler.

9.54.4.4 Chemical Storage and Hazardous Materials

Janitorial and maintenance supplies used in the Building 31 are stored in the metal cabinets. Paint supplies are stored in a flammable cabinet in accordance with applicable standards. These cabinets are used by maintenance personnel. The building manager needs to coordinate with the maintenance supervisor on how materials are stored in these cabinets and how the cabinets are labelled. Some Material Safety Data Sheets (MSDSs) were available in the building.

The building is equipped with appropriate emergency response equipment such as sprinklers and fire extinguishers. Extinguishers are bar-coded. The inspection date database is maintained in the Fire Station, Building 98. There is an Emergency Evacuation Plan, and signs were posted in work areas.

There are no aboveground storage tanks in or around the building and no underground storage tanks are associated with this building. There are no sumps, separators, or catch basins, in or around the building.

The building was tested and does contain suspect asbestos-containing building material (MD-10391, *Asbestos Program Manual*, 9-14-95).

There are no capacitors or transformers containing polychlorinated biphenyls (PCBs) located in the building (1995 Annual PCB Document Log).

9.54.4.5 Solid, Hazardous, and Radioactive Wastes

Solid wastes generated are primarily empty paint containers. There is paper and aluminum can recycling to minimize solid waste. Solid wastes are removed by janitorial personnel to a site

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collection point, then shipped offsite to a local landfill by a contractor. The disposal permit is maintained by Waste Management. There is no evidence that hazardous materials or wastes are mixed with solid waste streams.

Containers of LLW are staged in the building, where they are prepared for shipping. Some of the containers hold sludge for the sanitary treatment plant. It was discovered that the sludge needed to be dewatered. The wastes containers were modified to remove water. A Department of Transportation (DOT) standard, full-size metal box was observed drilled with holes that had been plugged with screws, located along the bottom third of the panels. The box observed during the walk-through will be stored in Building 31 and eventually shipped to Envirocare. A review of the procedures for Waste Acceptance Procedures for Envirocare Shipments stated that the container should be inspected for damage that could affect the integrity of the container, such as handling damage, holes, and leaking. In addition, ML-7042A: Low-Level Radioactive Waste Input Form has a Unit of Inspection which includes "No Holes." There is no evidence of an evaluation of this modification of a DOT-regulated container to determine if the drilling would compromise the integrity of the container or whether the application of screws and washers would be sufficient to plug the container. There was no available record of authorization engineering approval for the modification of a DOT LLW container. It could not be determined at this time if there were other containers that had been modified. If containers are to be modified, documented approval should be acquired by management, EnviroCare, and DOT. Waste containers should not leave the Mound site in a nonconforming condition.

During the appraisal, it was noted that heavy duty equipment from the garage had been stored in the facility without the knowledge of the building manager. There had been no coordination between the building manager and the heavy equipment maintenance superintendent. This imposes an unwarranted burden of responsibility on the building manager and also brings into question the security of this LLW building. The building manager was provided no training to perform his functions.

9.54.4.6 Waste Minimization and Pollution Prevention

At Mound there is an active program to minimize waste streams in accordance with state and federal requirements and Executive Order 12856.

Programs for waste minimization in place including aluminum can and paper recycling. Process procedures have been reviewed for preventing or minimizing pollution. Building 31 will not generate but a minimal amount of waste.

9.54.5 Findings and Recommendations

Photographs were taken to document the environmental appraisal. They are included as Attachment 6 (Section 9.54.6.6).

Environmental Appraisal of the Mound Plant

The environmental appraisal of Building 31 indicates that the following action items, in order of priority, should be planned and scheduled for accomplishment thus assuring the best management and operating practices are in place.

31-1 Evaluate the Waste Acceptance Criteria, 49 CFR 109-199 regulations and engineering specifications to ensure that procedures are either established or implemented to ensure that engineering specifications that are modified are authorized in writing by Mound engineers and management, and approved by Envirocare and DOT.

31-2 Perform frequent inspections of the facility. Establish or review procedures for inspection and certifying LLW containers. Inspections should identify any non-conformities to the engineering specifications of LLW containers.

31-3 MSDSs should be prominently displayed, clearly labeled, and readily available. A visitor to the area should be able to walk into the room and find them immediately.

31-4 There were two LLW drums marked as "contamination area" roped off and staged outside the rear of the building next to a storm drain. They should be moved to a more secure location.

31-5 There were numerous rusty metal LSA boxes full of what appeared to be ice. The boxes should be removed from the area and disposed of properly.

31-6 Establish guidelines to ensure that any modifications of radioactive waste containers are evaluated, approved, and documented.

31-7 Provide training to building managers on building specifics, process operations, security, and other responsibilities.

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ENVIRONMENTAL APPRAISAL CHECKLIST

Building Name 31

Appraisers:

Name _____ Discipline _____

Name _____ Discipline _____

Name _____ Discipline _____

Name _____ Discipline _____

Building Manager: LARRY T. LAMSA

Process Manager: LARRY T. LAMSA

Date: 1/24/96

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ENVIRONMENTAL APPRAISAL CHECKLIST

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Safe Drinking Water Act	7
RCRA Hazardous Waste	8
TSCA and NESHAP Requirements for Asbestos	13
TSCA—PCB	14
Low-level and Transuranic Waste	17
Waste Minimization/Pollution Prevention Activities	22

Environmental Appraisal Checklist

Building Name: 31

Appraisers: Terry Glander, John Puckett, Mary-Louis Hoagland, Mary Sizemore

Date: 1/24/96

Clean Water Act (CWA) Screening Checklist

Question	Response	Comments
Does the outside drain spouting of the building discharge directly to a storm sewer/sanitary system?	(Y)/ N	If the answer to any of these questions is yes, proceed with the following checklist.
Are there sinks, toilets and floor drains in the building?	Y / (N)	
Are chemicals being used in the building?	(Y)/ N	PAINT ON BOXES
Is there a process which discharges to the storm or sanitary system?	Y / (N)	

CWA Checklist

Regulatory Guideline	Question	Response	Comments
40 CFR 122 Appendix D Table V	If chemicals are used/stored in the building, are they on the attached list? Are they properly contained?	(Y)/ N (Y)/ N	
	Is the building in operation? What are the processes and where do they discharge to?	(Y)/ N _____ _____	STAGING AREA FOR LLW SHIPMENTS; HEAVY DUTY EQUIPMENT STORAGE
	Do the floor drains, sinks & toilets appear to be draining properly?	~~Y/(N)~~	N/A (MM) 121203
OAC 3745-33	Do the floor drains and sinks drain to a sanitary or storm sewer?	Sanitary Storm	N/A
	Is there a sump/pit in the building? If so, what does it contain? How often is it pumped out? Does water collect in sump? Does sump have secondary containment?	Y / (N) _____ _____ Y / N Y / N	 N/A N/A
	Are there any manholes, catch basins, drains, or fill pipes in or around the building? If so, are there any unusual appearances, colors, and/or odors? Describe in comment section. Can chemicals flow into the drain?	(Y)/ N Y / (N) (Y)/ N	STORM DRAIN - REAR IF SPILLED AT DRAIN

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9.54-11

Environmental Appraisal Checklist

Building Name: 31

Appraisers: Terry Glander, John Puckett, Mary-Louis Hoagland, Mary Sizemore

Date: 1/24/96

Clean Air Act (CAA) Screening Checklist

Regulatory Guideline	Question	Response	Comments
	Are there any rooms that have air emissions sources that vent to the outside of the building, e.g., fumehoods, equipment? If so, note the rooms.	Y / N	
OAC 3745-35	Using the air emissions inventory reference for this building, are there any sources in the building that are not documented?	Y / N	
	Is there evidence of fugitive dust emissions inside or outside of the building	Y / N	

CAA Checklist

Regulatory Guideline	Question	Response	Comments
	Are there existing air permits or applications applicable to the building?	Y / N	
OAC 3745-31,35	If yes, are the terms and conditions of the permit or the information included on the application (see air emissions database) being followed? Note any differences and update the air emissions database.	Y / N	
OAC 3745-31	Are there any sources that are not included in the air emissions database? If so, note the room, hood number, active or not, POC, and applicable air emission database information on Table B.	Y / N	
OAC 3745-31-03	Are there sources which are lab equipment of lab fumeheads used exclusively for chemical or physical analyses and bench scale lab equipment? These sources do not require a permit. However, the air emissions database should be updated.	Y / N	
	Has there been any release of air contaminants from this building?	Y / N	

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Environmental Appraisal Checklist

Building Name: 31

Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore

Date: 1/24/96

CAA Checklist

Comments: Note the number of sources/hoods per room, the number that are active, and the POC on the reference document.

TABLE A									
Process Source	Room Number	Hood Number	In Database	Active	Chemicals Used	Quantity Used	Quantity to Waste Management	Hours/Yr. Operation	Air Emissions
			Y / N	Y / N					
			Y / N	Y / N					
			Y / N	Y / N					
			Y / N	Y / N					
			Y / N	Y / N					

Source: _____

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9.54-13

9.54-14

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Environmental Appraisal Checklist

Building Name: 31

Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore

Date: 1/24/96

Hazardous Materials (HM) Screening Checklist

Question	Response	Comments
Are any chemicals used or stored in this building, now or in the past?	(Y) / N	If the answer is yes, proceed with the following checklist.

HM Checklist

Regulatory Guideline	Question	Response	Comments
29 CFR 1910.1200(b,f)	All containers of hazardous chemicals shall be labeled as to the identity of the chemical and the appropriate hazard warnings.	(Y) / N	
29 CFR 1910.1200(g)	MSDS shall be available to the employees in close proximity to the work area.	(Y) / N	MSDS' NOT AVAILABLE FOR ALL CHEMICALS - AT LOCATION
29 CFR 1910.22, 1910.106, 1910.176	All places of employment, passageways, storerooms and service areas shall be kept clean and orderly and in a sanitary manner. Aisles shall be unobstructed. Drums and containers are not leaking and are tightly sealed.	(Y) / N	
29 CFR 1910.106	Storage cabinets for flammable materials are constantly kept closed, are fire resistant and are labeled "FLAMMABLE - Keep Fire Away". Containers inside should be labeled and closed. No spills inside cabinet.	(Y) / N	
29 CFR 1910.106(d)(7)	Incompatible chemicals are not stored together.	(Y) / N	
29 CFR 1910.106(d)(4)	Inside Flammable/combustible storage rooms must meet the following: 4 in. raised sill or trench that drains to a safe area, liquid tight wall/floor joints, self-closing doors, gravity or mechanical exhaust providing 6 room changes/hr., exhaust switch located outside room, at least one 3 ft. aisle; no cracks in secondary containment.	Y / N	N/A

Environmental Appraisal Checklist

Building Name: 31

Appraisers: Terry Glander, John Puckett, Mary-Louis Hougland, Mary Sizemore

Date: 1/24/96

HM Checklist

Regulatory Guideline	Question	Response	Comments
29 CFR 1910.106(d)(7)	All flammable/combustible storage locations have at least one 12-B portable fire extinguisher located outside and within 10 ft. of a door opening into any room for storage. No smoking signs are posted.	(Y) / N	NO SMOKING SIGNS NEED TO BE POSTED
29 CFR 1910.151	Eyewashes/showers shall be provided within the work area. Ensure unit is operational.	Y / (N)	
CGA P-1 3.3 & 3.3.10	All gas cylinders (full or empty) shall carry a legible label or marking identifying the contents.	(Y) / N	PROPANE CYLINDERS
CGA P-1 3.5.3	Full and empty containers should be stored separately with the storage layout planned so that containers comprising of old stock can be removed first with a minimum handling of other containers.	Y / N	N/A
CGA P-1 3.5.8	All compressed gas containers in service or in storage shall be stored standing upright and the container shall be secured.	Y / N	SMALL PROPANE CYLINDERS STORED HORIZONTALLY
CGA P-1 4.2.2	Oxygen cylinders shall be separated from flammable gas containers or combustible materials a minimum of 20 ft. or a noncombustible barrier 5 ft. high.	Y / N	N/A
29 CFR 1910.104(2)(10)	Oxygen stored as a liquid shall be on a noncombustible surface. Asphalt is considered combustible. Wood and long dry grass shall be cut back 15 ft. from the container.	Y / N	N/A
29 CFR 1910.104	Bulk oxygen storage shall be permanently placarded "OXYGEN - NO SMOKING - NO OPEN FLAMES".	Y / N	N/A
	Is there a sign posted in each work area regarding emergency egress and emergency response action?	(Y) / N	
	Is there an emergency response plan available?	(Y) / N	

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9.54-15

Environmental Appraisal Checklist

Building Name: 31

Appraisers: Terry Glander, John Puckett, Mary-Louis Hoagland, Mary Sizemore

Date: 1/24/96

HM Checklist

Regulatory Guideline	Question	Response	Comments
	Is there a process area?	(Y) / N	PAINTING OF BOXES
	Does it have proper containment?	Y / N	N/A
	Is there a liquid bulk transfer area?	Y / (N)	
	Is there proper containment?	Y / N	N/A
	Is there an above ground storage tank? If so, complete Table B.	Y / N	N/A

Above Ground Storage Tanks Inventory

TABLE B—Above Ground Storage Tanks Inventory

Building	Capacity (Gal.)	Contents	Estimated Volume	In Service	Containment	Visual Stains/ Contamination	If Empty, Flushed
				Y / N	Y / N	Y / N	Y / N
				Y / N	Y / N	Y / N	Y / N
				Y / N	Y / N	Y / N	Y / N
				Y / N	Y / N	Y / N	Y / N
				Y / N	Y / N	Y / N	Y / N
				Y / N	Y / N	Y / N	Y / N
				Y / N	Y / N	Y / N	Y / N

Source: _____

9.54-16

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Environmental Appraisal Checklist

Building Name: 31 Appraisers: Terry Glander, John Puckett, Mary-Louis Hoagland, Mary Sizemore Date: 1/24/96

Safe Drinking Water Act (SDWA) Screening Checklist

Does this facility have potable water?	Y (N)	If yes, conduct the following survey.

SDWA Checklist

Regulatory Guideline	Question	Response	Comments
OAC 3745 95-02 (A)	Do actual or potential cross-connections exist between potable (light green) and service water (dark green)?	Y / (N)	
OAC 3745 95-04 (B)(C)	Are backflow prevention devices installed where cross connections (hoses connected to faucets, hot water tank vented directly to a drain) exist?	Y / N	
	Are sources of service water (janitorial and laboratory faucets, or outdoor spigots) posted as non-potable water sources?	Y / N	
	Does the facility contain any water coolers or fountains that are not lead free? Complete Table C.	Y / N	

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TABLE C—Water Fountain Survey – NONE

Building	Location	Model #	Comments / Date of Analysis for Lead

9.54-17

Source: _____

Environmental Appraisal Checklist

Building Name: 31

Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore

Date: 1/24/96

RCRA Screening Checklist

Does this facility generate waste or use chemicals?	(Y)/ N (*)	If yes, conduct the following survey.

RCRA Checklist (*) STORAGE ONLY

Regulatory Guideline	Question	Response	Comments
OAC 3745 52-11	Has any material generated been characterized RCRA hazardous? Was charactarization by analysis or by process knowledge? Are lab results or documentation of process knowledge readily available? Note any uncharacterized material in comment section. Is it waste? If yes, proceed with next section.	Y / (N) analysis / process (Y)/ N Y / N	BOTH
OAC 3745 52-11	Are any of the materials noted RCRA hazardous waste? If no, note and stop here. If yes, note the location of the management unit, and the method of management, and proceed with the appropriate section below.	Y / (N)	

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Environmental Appraisal Checklist

Building Name: 31

Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore

Date: 1/24/96

RCRA Checklist

Regulatory Guideline	Question	Response	Comments
I. HAZARDOUS WASTE STORED IN CONTAINERS			
	Is there an area in the building that could qualify as a Satellite Accumulation Area?	Y / N	
	Is it treated as such?	Y / N	N/A
OAC 3475-52-34 (C)	Has any of the RCRA hazardous waste in this building been managed in Satellite Accumulation Areas? If no, proceed to the next section. If yes, answer the following.	Y / N	
	Are the containers marked with the words hazardous waste, or other words denoting the hazard?	Y / N	
	Are the containers in good condition?	Y / N	
	Are the waste compatible with the containers?	Y / N	
	Are containers managing ignitable hazardous waste stored at least 50 feet from the plant site boundary?	Y / N	
	Are containers kept closed and locked except during filling?	Y / N	
	Are containers moved within 3 days of being filled?	Y / N	

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9.54-19

Environmental Appraisal Checklist

Building Name: 31

Appraisers: Terry Glander, Mary-Louis I, John Puckett, Mary Sizen.

Date: 1/24/96

RCRA Checklist

Regulatory Guideline	Question	Response	Comments
OAC 3745-52-11 (A)	If a Satellite accumulation area has been abandoned and/or if waste left in place, and the containers may be subject to the 90-day-storage exclusion. If this exclusion does not apply, go to the next section. If the containers have been in storage under this exclusion, answer the following:		
	Are the containers in good condition?	Y / N	
	Are the waste compatible with the containers?	Y / N	
	Are the containers kept closed except during filling?	Y / N	
	Are the containers managed in such a way, that they are not ruptured, or leaks caused?	Y / N	
	Is the area inspected at least once weekly?	Y / N	
	Is the inspection recorded? Where is the log? Is it properly completed, dated, and signed?	Y / N Y / N	
	Are containers managing ignitable hazardous waste stored at least 50 feet from the facility boundary?	Y / N	
	Are incompatible wastes managed in such a way that they will not react with another incompatible waste?	Y / N	
OAC 3745-52-34(B)	Has any of the waste (except in Building 23, Building 72 and the Burn Area) been managed in excess of 90-days?	Y / N	
	If no go to next section.		
	If yes, note.		
	For Building 23, Building 72 & Burn Area use special checklist.		

9.54-20

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Environmental Appraisal Checklist

Building Name: 31 Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore Date: 1/24/96

RCRA Checklist

Regulatory Guideline	Question	Response	Comments
II. HAZARDOUS WASTE STORED IN TANKS			
OAC 3745-52-32 (B)	Has any chemical waste stored in a tank, piece of process equipment or ancillary equipment been in storage in excess of 90-days?	Y / N	
	If the answer was no, then proceed with the following:	Y / N	
	Has the tank or piece of equipment had an integrity assessment?	Y / N	
	Is there a sump?	Y / N	
	Is it dry?	Y / N	
	Does the tank or equipment have secondary containment?	Y / N	
	Does the tank or equipment have leak detection device(s)?	Y / N	
	Has spill control prevention been enacted?	Y / N	
	Has any hazardous waste stored in a tank, piece of process equipment or ancillary equipment been in storage in excess of 90-days?	Y / N	
	If the answer was no, then proceed with the following:		
	Has the tank or piece of equipment had an integrity assessment?	Y / N	
	Does the tank or equipment have secondary containment?	Y / N	
	Does the tank or equipment have leak detection device(s)?	Y / N	
	Has spill control prevention been enacted?	Y / N	
	Is there a closure plan?	Y / N	
	If yes, then note.		
OAC 3745-67	Has any of the waste been managed in a surface impoundment? If yes, then note. Go to the next section.	Y / N	

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Environmental Appraisal Checklist

Building Name: 31

Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore

Date: 1/24/96

RCRA Checklist

Regulatory Guideline	Question	Response	Comments
OAC 3745-68	Has any of the waste been managed in a Landfill? If yes, then note. Go to the next section.	Y / N	
OAC 3745-68	Has any of the waste been managed in an Incinerator (other than Burn area units)? If yes, then note. Go to the next section.	Y / N	
OAC 3745-68	Has any of the waste been managed in a Thermal treatment Unit (other than Burn area units)? If yes, then note. Go to the next section	Y / N	
OAC 3745-69	Has any of the waste been managed in a Miscellaneous Treatment Unit (other than Burn area units)? If yes, then not. Go to the next section.	Y / N	
OAC 3745-56	Has any of the waste been managed in a Waste Pile? If yes, then note. Go to the next section.	Y / N	

General Comments:

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Environmental Appraisal Checklist

Building Name: 31 Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore Date: 1/24/96

Asbestos Screening Checklist

Does this facility contain ACBM?	(Y) N	If yes, conduct the following survey.

Asbestos Checklist

Note: Routinely, the asbestos standard for ACBM in schools has been applied to facilities for purpose of cleanup. In addition to AEHERA, there are additional standards in the NESHAPS that may be of importance.

Regulatory Guideline	Question	Response	Comments
ADAPTED FROM TSCA ACBM IN SCHOOLS:			
	Has this building been characterized either through process knowledge, by analyses, or by inspection to determine if it contains asbestos?	(Y) N	Suspect Building Materials
	If no for this building or area note this conclusion in the comment section.		See Appendix I V. Darnell 12/12/03
	Is there any evidence of friable asbestos?	Y / (N)	
	Is the asbestos removal properly managed? (See questions listed below)	Y / N N/A	If there is no asbestos removal, do not complete the following section.
NESHAPS FOR ASBESTOS FOR ANY ONGOING ASBESTOS REMOVAL:			
40 CFR 61.156	There are no discharges of visible emissions to the outside air from collection, processing, packaging, transporting, or deposition of ACBM during the removal.	Y / N	
40 CFR 61.152(b) (1)	ACBM is treated with water in accordance with 40 CFR 152(b)?	Y / N	
40 CFR 61.154	Is friable asbestos adequately wetted during stripping? Or, has an adequate ventilation and collection system been installed?	Y / N	
40 CFR 61.152	Is wetting continued until the waste friable asbestos is collected for disposal?	Y / N	

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Environmental Appraisal Checklist

Building Name: 31 Appraisers: Terry Glander, John Puckett, Mary-Louis Hoagland, Mary Sizemore Date: 1/24/96

Toxic Substances and Control Act (TSCA) PCB's Screening Checklist

Does this facility potentially contain any PCB's or PCB contaminated equipment?	Y (N)	If yes, are transformers labeled (Blue or Yellow stickers)? If yes, conduct the following survey.

TSCA Checklist

Regulatory Guideline	Question	Response	Comments
40 CFR 761	Has any waste generated in, or from, this building been characterized either through process knowledge or by analyses to determine if it contains PCB's ? If the answer is no, note . If the answer is yes, proceed with next section.	Y / N	
	Based on an inspection, are any of the materials or equipment potentially PCB contaminated? If no, note and stop here. If yes, note the location of the management unit, and the method of management, and proceed.	Y / N	
40 CFR 761.65 (c) (5)	Are PCB articles or containers stored in this building checked for leaks at least once every 30 days?	Y / N	
	If yes, are auditable records maintained.	Y / N	
40 CFR.30 (a) (1) (ix)	Are any PCB transformers in use, or stored for possible reuse, that contain PCB's at concentrations of 500 ppm or greater?	Y / N	
	Are they visually inspected quarterly? If yes, are auditable records maintained?	Y / N	

Environmental Appraisal Checklist

Building Name: 31 Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore Date: 1/24/96

TSCA Checklist

Regulatory Guideline	Question	Response	Comments
40 CFR 761.30 (a) 1,viii	Are all combustible materials (i.e., paints, solvents, plastics, paper, sawn wood, etc.) cleared from areas containing PCB transformers to a distance of five meters?	Y / N	
40 CFR 761.65 (b) (8)	Are all PCB articles and containers labeled with the date they were placed in storage?	Y / N	
	Are labeled PCB articles and containers stored so that the labels can be referenced?	Y / N	
40 CFR 761.65 (a)	Are all PCB's and PCB contaminated items at concentrations above 50 PPM, that are stored for disposal, stored no longer than one year from the date they were placed in storage?	Y / N	
40 CFR 761.62 (b) (1) (i)	Do all PCB storage areas have an adequate roof and walls to prevent rainwater from reaching the stored items?	Y / N	
40 CFR 761.62 (b) (1) (iv)	Are storage are floors curbed and constructed of continuous smooth and impervious materials?	Y / N	
40 CFR 761.62 (b) (1) (i)	Are the curbs at least 6 inches high?	Y / N	
40 CFR 761.62 (b) (1) (iii)	No drains are allowed in storage areas. Are there drains in the storage areas?	Y / N	

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Environmental Appraisal Checklist

Building Name: 31

Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore

Date: 1/24/96

TSCA Checklist

Regulatory Guideline	Question	Response	Comments
40 CFR 761.65 (c) (2)	Only non-leaking and undamaged large high voltage PCB's capacitators and PCB-containing electrical equipment are allowed to be stored outside of PCB storage areas, on pallets if stored outside, with containment for 10 percent of the volume of the equipment. Do all PCB's stored in this configuration conform with this requirement?	Y / N	
40 CFR 761.45 and .65	Are all PCB storage areas marked with a large PCB mark as described in 40 CFR 761.45 (a)?	Y / N	
40 CFR 761.65 (c) (5)	Have all leaking PCB articles and containers been transferred to non-leaking containers?	Y / N	
40 CFR 761.65 (c) (6)	Do all PCB storage containers for the storage of liquid and non-liquid PCB's comply with DOT shipping container specifications?	Y / N	

GENERAL COMMENTS:

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Building Name: 31 Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore Date: 1/24/96

Low-Level Waste and Transuranic Waste Screening Checklist

Does this facility contain radioactive waste ?	(Y) / N	If yes, conduct the following survey.

Low-Level Waste and Transuranic Waste Checklist

Regulatory Guideline	Question	Response	Comments
Low-Level Waste			
DOE Order 5820.2A Chapter III	Can any waste generated in, or from, this building be characterized either through process knowledge or by analyses to determine if it is LLW ? If the answer is no, note. If the answer is yes, proceed with next section.	Y / (N)	ONLY STORED AT LOCATION
DOE Order 5820.2A Chapter III.	Are any of the materials noted by inspection LLW? If no, The audit would stop here, because there are no LLW. If yes, note the location of the management unit, and the method of management, and proceed with the section below.	(Y) / N	EACH CONTAINER'S LLW INPUT FORM DOCUMENTS MEASUREMENTS AT the SURFACE AND AT ONE METER
DOE Order 5820.2A Chapter III, 3.a.	Have the storage configurations in use in this area been taken into account for keeping external exposures to the general public below 25 mrem/yr?	Y / N	N/A - NO PUBLIC ACCESS (SEE ABOVE)
	Is the waste stored in a configuration that protects ground-water resources?	(Y) / N	
DOE Order 5820.2A Chapter III, 3.b.	Has monitoring been conducted in this area in accordance with DOE Order 5820.2A in order to evaluate the area against the performance standard?	(Y) / N	AREA DOSIMETERS ARE POSTED; HEALTH PHYSICS TAKES FLOOR WIPES
	Based on field data, does the monitoring conducted in this area conform to the performance standard?	(Y) / N	

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Environmental Appraisal Checklist

Building Name: 31

Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore

Date: 1/24/96

Low-Level Waste and Transuranic Waste Checklist

Regulatory Guideline	Question	Response	Comments
DOE Order 5820.2A Chapter III, 3.d.	Based on field data, is the characterization of the materials in this area sufficient to assure proper segregation to assure proper segregation, treatment, storage, and disposal?	(Y)/ N	CONTAINERS CONTAIN LLW - SOIL
	Based on field data does the characterization as documented at the time of generation of the waste ensure that the actual physical and chemical characteristics, and major radionuclide content of this material are recorded and known at all stages of the waste management process?	(Y)/ N	ML7042-A & ML-7042-X WASTE INPUT FORM IS DOCUMENTATION USED
	Do characterization data include the following:		
	Physical and chemical characteristics of the waste?	(Y)/ N	
	Volume of the waste (including solidification and absorbent material)?	(Y)/ N	
	Weight of the waste (including solidification and absorbent material)?	(Y)/ N	
	Major radionuclides and their concentrations?	(Y)/ N	
	Packaging date, package weight, external volume?	(Y)/ N	
	How were the concentration of radionuclides determined? Direct methods?		PROCESS KNOWLEDGE / ANALYTICAL
	How were the concentrations of radionuclides determined? Indirect methods?		SAME AS ABOVE
DOE Order 5820.2A Chapter III, 3.h	Is the storage configuration in long term storage sufficient to meet the performance standard?	(Y)/ N	
	Are records maintained at the facility enabling this waste to be traced from its origin?	(Y)/ N	

Building Name: 31 Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore Date: 1/24/96

Low-Level Waste and Transuranic Waste Checklist

Regulatory Guideline	Question	Response	Comments
TRU WASTE			
	Can any waste generated in, or from this building be characterized either through process knowledge or by analyses to determine if it is TRU waste? If no, note and stop. If yes, proceed with the next section.	Y / N	Storage only VKG 12-16-03
	Are any of the materials noted as being TRU waste during an inspection? If no, note and stop. If the answer is yes, note the location of the management unit, and the method of management and proceed with the appropriate section below.	Y / N	N/A
DOE Order 5820.2A, Chapter II, 3.a	Was this material evaluated as soon as possible in the generating process, to determine if it is TRU (>100nCi/g), if it is recoverable, or if it is waste? (Note if the activity level is less than 100nCi/g, the waste is not TRU, and can be managed as LLW.)	Y / N	N/A
	Did the determination of TRU radionuclide concentration include the mass of the container, including shielding? These should be included in calculating the specific activity of the waste.	Y / N	N/A

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Environmental Appraisal Checklist

Building Name: 31

Appraisers: Terry Glander, John Puckett, Mary-Louis Hoagland, Mary Sizemore

Date: 1/24/96

Low-Level Waste and Transuranic Waste Checklist

Regulatory Guideline	Question	Response	Comments
DOE Order 5820.2A, Chapter II, 3.b	Has the TRU waste been assayed or otherwise evaluated to determine its radioactive content prior to storage?	Y / N	
	Has the TRU waste been characterized or otherwise evaluated to determine if hazardous waste is present?	Y / N	
	Has classified TRU waste been treated to destroy the classified characteristics?	Y / N	
DOE Order 5820.2A, Chapter II 3.d	Has all newly generated TRU waste been packaged in non-combustible packaging that meets DOT requirements?	Y / N	
	Have all Type A TRU waste packages been equipped with a method to prevent pressure buildup?	Y / N	
	Have all TRU packages been marked, labeled and sealed in accordance with 40 CFR 261 Subpart C and 49 CFR 172 Subparts D, E and 49 CFR 173 Subpart I?	Y / N	

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Environmental Appraisal Checklist

Building Name: 31 Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore Date: 1/24/96

Low-Level Waste and Transuranic Waste Checklist

Regulatory Guideline	Question	Response	Comments
DOE Order 5820.2A, Chapter II 3.e	Has the TRU waste been segregated in manner that will not permit commingling of TRU waste with LLW or high-level waste?	Y / N	
	Has the TRU waste been protected from unauthorized access?	Y / N	
	Has the TRU waste been monitored periodically to ensure that it is not releasing its radioactive and/or hazardous constituents?	Y / N	
	Has this TRU waste storage area been designed, constructed, maintained, and operated to minimize the possibility of fire, explosion, or accidental release of its radioactive and/or hazardous constituents?	Y / N	
	Does the facility have a contingency plan designed to minimize the adverse impacts of fire, explosion, or accidental release of its radioactive and/or hazardous constituents?	Y / N	

GENERAL COMMENTS:

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9.54-31

Environmental Appraisal Checklist

Building Name: 31 Appraisers: Terry Glander, John Puckett, Mary-Louis Hoagland, Mary Sizemore Date: 1/24/96

Waste Minimization/Pollution Prevention Activities Screening Checklist

Does this facility generate waste or use chemicals?	(Y) / N	If yes, conduct the following survey.

Waste Minimiaztion/Pollution Prevention Activities Checklist

Regulatory Guideline	Question	Response	Comments
	Based on available information and a walk through, are there any apparent opportunities to curtail the consumption of raw materials (including but not limited to paper, chemicals, electricity, and etc.). If yes, list candidate areas in the comment section.	Y / (N)	
	Are there solvent wastes?	Y / (N)	
	Is vehicle maintenance performed?	Y / (N)	
	Are oils used ?	Y / (N)	
	Are these corrosive wastes?	Y / (N)	
	Are there sludges?	Y / (N)	
	Are there halogenated organic (nonsolvent) wastes?	Y / (N)	
	Are metals recovered from wastewater?	Y / (N)	
	Is waste sludge generated?	Y / (N)	
	Are any waste minimization practices used that reduce the generation of sludge?	Y / (N)	
	Ion exchange process?	Y / (N)	
	Lead in gasoline lowered to reduce tank sludge toxicity?	Y / (N)	
	Storage tank agitators installed?	Y / (N)	
	Corrosive resistant materials used?	Y / (N)	
	Prevention of crude oil oxidation ?	Y / (N)	
	Drying?	Y / (N)	

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Environmental Appraisal Checklist

Building Name: 31

Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore

Date: 1/24/96

Waste Minimization/Pollution Prevention Activities Checklist

Regulatory Guideline	Question	Response	Comments
HALOGENATED ORGANIC (NONSOLVENT) WASTES			
	Are halogenated organic wastes used as fuel in cement kilns?	Y / N	
	Are baghouse filters used to collect pesticides and pesticide intermediates?	Y / N	
	Are solid wastes generated from the collection of baghouse dust?	Y / N	
	Wet instead of dry grinding used?	Y / N	
	The output spray dried?	Y / N	
	Has baghouse emptying and recycling of baghouse fines been scheduled?	Y / N	
	Have operations been evaluated to improve procedures such as handling, storage and spill prevention for increased efficiency?	Y / N	
METAL WASTES			
	Are any technologies for the recovering of metals from waste rinsewater used?	Y / N	
	Evaporation of waste rinsewater?	Y / N	
	Reverse osmosis?	Y / N	
	Ion exchange?	Y / N	
	Electrolysis?	Y / N	
	Agglomeration?	Y / N	
CORROSIVE WASTES			
	Are acidic or basic cleaning solutions used as treatment for pH adjustment chemicals?	Y / N	

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Environmental Appraisal Checklist

Building Name: 31

Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore

Date: 1/24/96

Waste Minimization/Pollution Prevention Activities Checklist

Regulatory Guideline	Question	Response	Comments
	Are ion exchange resins used to remove heavy metals and cyanides from acid and base solutions?	Y / N	
	Is crystallization used to remove corrosives from solution by cooling?	Y / N	
	Is the process of evaporation of liquid wastes by heating used to leave behind a more concentrated solution?	Y / N	
CYANIDE AND REACTIVE WASTES			
	Has non-cyanide or low concentration of cyanide process replaced zinc cyanide bath ?	Y / N	
	Are any of these processes used to recycle cyanide wastes?	Y / N	
	Refrigeration/crystallization?	Y / N	
	Evaporation?	Y / N	
	Ion exchange?	Y / N	
	Membrane separation which includes reverse osmosis or electrodialysis?	Y / N	
VEHICLE MAINTENANCE			
	How are auto parts cleaned?	Y / N	
	Solvent sink?	Y / N	
	Solvent dunk bucket?	Y / N	
	Solvent dip tank?	Y / N	
	Are parts cleaning solvents used for anything else besides cleaning parts?	Y / N	
	Are spills reduced by locating sinks or dunk buckets near auto service bays?	Y / N	

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Building Name: 31 Appraisers: Terry Glander, John Puckett, Mary-Louis Hoagland, Mary Sizemore Date: 1/24/96

Waste Minimization/Pollution Prevention Activities Checklist

Regulatory Guideline	Question	Response	Comments
	Are cleaned parts drained on the sink to minimize solvent spills?	Y / N	
	Are drip tanks used to capture losses?	Y / N	
	Is a solvent sink used for mineral solvents rather than a dunk bucket or dip tank?	Y / N	
	Does a waste hauler collect solvent waste for recycling or treatment?	Y / N	
OILS			
	What kind of oils are used?		
	Hydraulic oil?	Y / N	
	Transformer oil?	Y / N	
	Metal working fluids?	Y / N	
	Spent lubricating oils?	Y / N	
	Can the process be modified or changed to use water-based fluids?	Y / N	
	Are these good housekeeping and operation practices used to minimize oil waste production?		
	Use oils not contaminated with other liquids?	Y / N	
	Oil spills prevented?	Y / N	
	Drip pans installed?	Y / N	
	Oil soaked rags laundered?	Y / N	
	Rags and absorbants used to their limit?	Y / N	

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Environmental Appraisal Checklist

Building Name: 31

Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore

Date: 1/24/96

Waste Minimization/Pollution Prevention Activities Checklist

Regulatory Guideline	Question	Response	Comments
	Are these treatment techniques used to promote separation of oil/water wastes?		
	Reclaiming process to remove water and solvents by heat?	Y / N	
	Gravity setting?	Y / N	
	Screening?	Y / N	
	Centrifugation?	Y / N	
	Filtration?	Y / N	
SOLVENT WASTES			
	Has there been an attempt to reduce volume or toxicity by:		
	Eliminating solvents?	Y / N	
	Reducing the use of solvents?	Y / N	
	Reducing the loss of solvents?	Y / N	
	Increasing recyclability?	Y / N	
	Are solvents segregated?	Y / N	
	Are waste solvents free from water and garbage?	Y / N	
	Are recycled solvent containers labeled as such?	Y / N	
	Are containers kept closed?	Y / N	
	Free and sheltered from the elements?	Y / N	
	Are solvent tanks kept as free from contaminations as possible so that the waste can be recycled?	Y / N	
	Is a method used to minimize the use of new materials such as a countercurrent process?	Y / N	

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Environmental Appraisal Checklist

Building Name: 31 Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore Date: 1/24/96

Waste Minimization/Pollution Prevention Activities Checklist

Regulatory Guideline	Question	Response	Comments
	If there is a recycling program, what technique is used?	Y / N	
	Distillation?	Y / N	
	Solids removal?	Y / N	
	Dispersion breaking?	Y / N	
	Dissolved and emulsified organics recovery?	Y / N	
	Are any of these housekeeping procedures used to minimize the production of solvent wastes?		
	Separators cleaned and checked?	Y / N	
	Parts not allowed to enter the degreaser while wet?	Y / N	
	Sludge from the bottom of the tank not allowed to accumulate?	Y / N	
	Lids kept on tanks?	Y / N	
	Freeboard space on tanks increased?	Y / N	
	Are better operating practices used to reduce waste?	Y / N	
	How long is solvent waste stored and where?	_____ _____	

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Building Manager's Questionnaire

Name: 31 Building Manager: L.T. Lamsa Phone: 4182 Date: 12-07-95
Alternate: DOUG HANAGAN Phone: 4524

1. What are the access requirements (training, clearance. etc.)?

RAD WORKER II TRAINING

2. What protective equipment is required to enter the building?

SAFETY GLASSES

3. Are there any restricted areas? Yes No
Where are they?

4. Provide a physical description of the building.

Building is an approximately 6,090-ft^2, prefabricated metal building with a metal roof. Building is 29 years old. Building itself is not contaminated with radioactive or energetic materials.

Source: Mound Facility Physical Characterization, 12-1-93

5. Provide a drawing of the building.

Attached.

6. What is the current building use?

Building supports Decontamination and Decommissioning (D & D) and waste management operations. Building is used to store transuranic (TRU) wastes and as a staging area for the metal LSA boxes.

Source: Mound Building, 5-9-95

7. What is the history of building use other than that described in #6?

Source: Mound Buildings, 5-9-95

Building Manager's Questionnaire

Building Name: 31 Building Manager: L.T. Lamsa Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

8. What are ongoing operations or processes? What are the raw materials and waste streams from each process? Who is the best contact for each process?

Process(es) Housed: Storage and staging of LSA and TRU wastes

How Wastes Are Generated:

No wastes generated.

Contact:
Phone #:

Source: Characterization of Mound's Hazardous, Radioactive, and Mixed Wastes, (8-15-90).

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Building Manager's Questionnaire

Building Name: 31 Building Manager: L.T. Lamsa Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

9. In the last six months, have any modifications been made to the building or to processes in the building? Yes No

10. Does the building have air emission sources? No

Process Source	Room Number	Hood Number	Active	Chemicals Used	Quantity Used	Quantity to Waste Management	Lbs./Yr. Operation	Air Emissions
			Y / N					
			Y / N					
			Y / N					
			Y / N					
			Y / N					

Source: Mound Air Emissions Database 11/30/95

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Building Manager's Questionnaire

Building Name: 31 Building Manager: L.T. Lamsa Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

11. Describe air pollution control equipment used to reduce emissions for each source. None Listed

Process Source	Emissions	Control Equipment	Functioning
			Y / N
			Y / N
			Y / N
			Y / N
			Y / N

Source: Air Permits 2/4/95

12. For existing permits are emissions monitored? At what frequency? Where are the records maintained? None Listed

Process Source	Permit	Log	Permit Conditions & Frequency of Monitoring
		Y / N	
		Y / N	
		Y / N	
		Y / N	
		Y / N	

Source: Air Permits 2/4/95

13. Does the building have domestic water service? Yes (No)
Is there bottled water? (Yes) No

14. Does the building discharge to the storm sewer? (Yes) No
Where? OUTSIDE (RAIN WATER)

15. Does the building discharge to the sanitary sewer? Yes (No)
Where?

16. Has an asbestos survey been conducted? Yes
What are the results? SUSPECTED See Appendix I (VKD) 12-16-03

Source: Technical Manual MD-10391, Issue 3 Asbestos Program Manual 9/6/95

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9.54-44

Building Manager's Questionnaire

Building Name: 31 Building Manager: L.T. Lamsa Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

17. Does the building contain transformers or capacitors? NO

Source: PCB ANNUAL DOCUMENT LOG

18. Has the building been identified as containing PCBs? NO

Source: PCB ANNUAL DOCUMENT LOG

19. What chemicals are used or stored inside or outside of the building? Include compressed gasses not in large tanks.

Chemical Name	State	Amount (MAX)
NONE		

Source: Chemical Inventory 1994

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9.54-45

Building Manager's Questionnaire

Building Name: 31 Building Manager: L.T. Lamsa Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

20. Has there been a reported spill, leak, or other release of any chemical? Yes (No)
What, how much, and what clean-up measures were followed?

Chemical	Amount	Clean-up Measures

Source: _____

21. Where do waste chemicals go?

WASTE MANAGEMENT HAZ WASTE PICK UP IF APPLICABLE.

22. What janitorial supplies are stored inside or outside of the building?

NONE

23. Where do excess janitorial supplies go?

NOT APPLICABLE

Source: LARRY LAMSA

24. Are pesticides or herbicides stored or used in or around the building? Yes (No)

Chemical	Amount	Chemical	Amount

Source: LARRY LAMSA

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Building Manager's Questionnaire

Building Name: 31 Building Manager: L.T. Lamsa Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

25. Does the building contain active or inactive above ground storage tanks? Yes No
For each tank, list the content, quantity, last inspection, registration number.

NONE

26. Is there a sump or pit or underground tank in or around the building? Yes No
Is it double-walled? What does it contain? How many days per year is it filled?
Is there an emergency overflow tank?

Double-Walled	Contents	Days/Year in Use	Overflow Tank	Previous Overflows
Y / N			Y / N	Y / N

Source: LARRY LAMSA

27. Does the building generate, store, or dispose of hazardous waste? Yes No

Materials	Amount
Aerosol Cans	125.0
Aerosol Cans	111.8
Aerosol Cans	47.2

Source: Characterization of Mounds Hazardous, Radioactive, and Mixed Wastes 08/15/90

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Building Manager's Questionnaire

Building Name: 31 Building Manager: L.T. Lamsa Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

28. Does the building have abandoned process equipment such as tanks, piping, containers, etc.? Yes (No)

29. Is waste material stored in or around the building for more than 90 days?
Yes (No) ASSUMPTION: LOW LEVEL RAD AND TRU WASTE ≠ WASTE MATERIAL.

30. Has the building been identified as a 90 day waste accumulation area?
Yes (No)

31. Has any area in the building been identified as a satellite accumulation area? Yes (No)

32. Is mixed waste generated, stored, or disposed of from the building? Yes (No)
Where are logs found?

Process	Waste	Stored	Disposed	Logs
		Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N

Source: LARRY LAMSA

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9.54-48

Building Manager's Questionnaire

Building Name: 31 Building Manager: L.T. Lamsa Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

33. Is TRU radioactive waste generated, stored, or disposed of from the building?
Yes No (NOT PRESENTLY)
Where are logs found? JOHN LONG

Process	Waste	Stored	Disposed	Logs
NONE	TRU	Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N

Source: LARRY LAMSA

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9.54-49

Building Manager's Questionnaire

Building Name: 31 Building Manager: L.T. Lamsa Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

34. Is low-level radioactive waste generated, stored, or disposed of from the building? Yes No
Where are logs found? LARRY LAMSA

Process	Waste	Stored	Disposed	Logs
NONE	LLW	Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N

Source: LARRY LAMSA

35. Identify all administrative orders, temporary or permanent injunctions, civil administrative penalties, or criminal activities issued against the building.

NONE

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Building Manager's Questionnaire

Building Name: 31 Building Manager: L.T. Lamsa Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

36. Is there a waste minimization program in the building? Yes **No**
Discuss your ideas about how to minimize waste.

MINIMAL WASTE IS GENERATED

37. Has a pollution prevention program been developed for the building? Yes **No**

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9.55 BUILDING 31-A

9.55.1 Scope of Building 31-A Report

In late 1995 and the early months of 1996, EG&G MAT performed a review of environmental conditions at the Mound Plant. The purpose was to develop a performance baseline, and to identify areas for improvement on a building and a site-wide basis. EG&G MAT did not perform a "due diligence" or Phase I Environmental Site Assessment as specified by ASTM 1527 or ASTM 1528. The scope of the appraisal effort and a discussion of the appraisal methodology are detailed in Sections 2.0 and 5.0, found in Volume 1 of this report.

The appraisal team performed a walk-through of Building 31-A on January 24, 1996. The EAC (Attachment 1—Section 9.55.6.1) was used to record findings. The appraisers were accompanied by the building manager and other knowledgeable personnel such as the process owners. Other information was supplied by the building manager and recorded on the BMQ, included as Attachment 2 (Section 9.6.2).

9.55.2 Description of Building 31-A

Building 31-A is a 2,650-square-foot, prefabricated metal building with a metal roof. It is 10 years old. The building is bordered by a roadway to the to the west, a staging area to the east, ~~a dock~~ Building 31 to the south, and a roadway to the north. Location is shown in Attachment 3 (Section 6.55.6.3). The facility has heating and air conditioning. HVAC systems are central steam and chilled water. The building has a fire sprinkler system. The building was originally built as a low specific activity (LSA) and Transuranic (TRU) wastes storage facility. The building is currently used for storing TRU wastes.

VFD 12-16-03

Building 31-A was constructed in 1986 (MD-10391, *Asbestos Program Manual*, 9-14-95). No research, development, or production activities using radioactive or energetic materials have occurred in the building (Mound Facility Physical Characterization, 12-1-93).

9.55.2 Summary of Findings

Building 31-A houses LSA and TRU wastes storage. The building is well-maintained. Some issues of environmental concern were identified during the walk-through and during review of reference materials.

9.55.4 Observations

9.55.4.1 Air Emissions

There are no air emission sources associated with the LSA and TRU wastes storage process. There are no fuel-burning units in the building. There is no evidence of fugitive dust.

9.55.4.2 Wastewater Emissions

The Mound Facility has three wastewater collection systems: a sanitary wastewater system; a storm water system; and a radioactively contaminated process wastewater system. Sanitary wastewater is treated at an onsite tertiary treatment plant and subsequently discharged by hard pipe to the Great Miami River. Storm water and any non-process wastewater, single pass cooling water, and softener backwash may be discharged directly to the Great Miami River, via the Miami-Erie Canal,* or may be diverted to a 3.1-million-gallon holding pond for settling prior to discharge. Radioactively contaminated wastewater is treated in Building WD by physical-chemical treatment. If appropriate, wastewater may be discharged by hard pipe to the Great Miami River. If concentrations of radioactive contaminants cannot be reduced to acceptable levels, wastewater is solidified and shipped to the Nevada Test Site or Envirocare for disposal. All outfalls are permitted under an active NPDES permit. Routine monitoring activities are in place. Based on NPDES monitoring report data reviewed, it appears that the facility is in compliance with qualitative and quantitative conditions of the permit.

*Subsequently, MCP effluent was re-routed around the canal via a covered pipe to the Mound Overflow Creek. D.C. Kramer 5-12-01

9.55.4.2.1 Sanitary Wastewater

The building does not have sanitary services. There is no wastewater generated in the process of storing LSA or TRU wastes.

9.55.4.2.2 Storm Wastewater

The building is serviced by storm drains according to Attachment 5 (Section 9.55.6.6.5). Storm drain connections are in the exterior of the building. There were no floor drains evident in the building. Exterior grates and drains were not tested to confirm that they connect to the storm drainage system. Inspection showed no sign of odors, colored discharges, or scarring which would indicate that any materials other than storm water has entered the storm drainage system.

There is no monitoring of building effluent. Based on operations data supplied by the process manger, no effluent is generated from Building 31-A.

9.55.4.2.3 Chemicals

There are no chemicals stored or used in Building 31-A. There is no evidence that chemicals enter the storm or sanitary drains. There have been no reported spills from Building 31-A.

9.55.4.3 Potable and Service Water

Potable water is not supplied to the building. There were no water coolers or drinking fountains located in the building.

9.55.4.4 Chemical Storage and Hazardous Materials

The building is equipped with appropriate emergency response equipment such as sprinklers and fire extinguishers. There were no emergency evacuation plans or signs were posted in work areas.

There are no aboveground storage tanks in or around the building and there are no underground storage tanks associated with this building. There are no sumps, separators, or catch basins, in or around the building. There are no underground storage tanks associated with the building.

The building has been tested and does contain suspect asbestos-containing building material (MD-10391, *Asbestos Program Manual*, 9-14-95). There was no evidence of friable asbestos.

There are no capacitors or transformers containing PCB's located in the building (1995 PCB Annual Document Log).

9.55.4.5 Solid, Hazardous, and Radioactive Wastes

The LSA waste storage process does not generate solid, hazardous, radioactive or explosive wastes.

The building is used to store TRU wastes. Several of the boxes stored in the building on the day of the walk-through were labeled as LSA waste. Containers were not investigated to confirm that identification and labelling conformed to MD-81240, LSA waste management procedures and DOE Order 5820.

9.55.4.6 Waste Minimization and Pollution Prevention

There are no programs for waste minimization, since the process of storing LSA and TRU wastes does not generate waste. Process procedures have been reviewed for preventing or minimizing pollution.

9.55.5 Findings and Recommendations

The environmental appraisal of Building 31-A indicates that the following action items should be planned and scheduled for accomplishment. Photographs were taken to document the environmental appraisal. They are included as Attachment 6 (Section 9.55.6.6).

31-A-1. Markings on boxes labeled "LSA waste" that contain TRU waste should be reviewed to assure that containers are properly identified and labeled according to Mound procedures and DOE Order.

31-A-2. There were no emergency evacuation plans or signs posted in work areas, as required by 29 CFR 1910.

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ENVIRONMENTAL APPRAISAL CHECKLIST

Building Name 31-A

Appraisers:

Name Discipline

Name Discipline

Name Discipline

Name Discipline

Building Manager: LARRY T. LAMSA

Process Manager: LARRY T. LAMSA

Date: 1/24/96

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ENVIRONMENTAL APPRAISAL CHECKLIST

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Environmental Appraisal Checklist

Building Name: 31/A

Appraisers: MARY SIZEMORE, JOHN PUCKETT, MARY LOUISE HOAGLAND, TERRY GLANDER

Date: 1/24/96

Clean Water Act (CWA) Screening Checklist

Question	Response	Comments
Does the outside drain spouting of the building discharge directly to a storm sewer/sanitary system?	(Y) N	If the answer to any of these questions is yes, proceed with the following checklist.
Are there sinks, toilets and floor drains in the building?	Y / (N)	
Are chemicals being used in the building?	Y / (N)	
Is there a process which discharges to the storm or sanitary system?	Y / (N)	

CWA Checklist

Regulatory Guideline	Question	Response	Comments
40 CFR 122 Appendix D Table V	If chemicals are used/stored in the building, are they on the attached list? Are they properly contained?	Y / (N) Y / N	N/A VKJ 12-16-03 N/A
	Is the building in operation? What are the processes and where do they discharge to?	(Y) / N _____ _____	
	Do the floor drains, sinks & toilets appear to be draining properly?	Y / N	N/A
OAC 3745-33	Do the floor drains and sinks drain to a sanitary or storm sewer?	Sanitary Storm	N/A
	Is there a sump/pit in the building? If so, what does it contain? How often is it pumped out? Does water collect in sump? Does sump have secondary containment?	Y / N _____ _____ Y / N Y / N	N/A
	Are there any manholes, catch basins, drains, or fill pipes in or around the building? If so, are there any unusual appearances, colors, and/or odors? Describe in comment section. Can chemicals flow into the drain?	Y / (N) Y / N Y / N	N/A N/A

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Environmental Appraisal Checklist

Building Name: 31-A

Appraisers: MARY SIZEMORE, JOHN PUCKETT, MARY LOUISE HOAGLAND, TERRY GLANDER

Date: 1/24/96

Clean Air Act (CAA) Screening Checklist

Regulatory Guideline	Question	Response	Comments
	Are there any rooms that have air emissions sources that vent to the outside of the building, e.g., fumehoods, equipment? If so, note the rooms.	Y / N	
OAC 3745-35	Using the air emissions inventory reference for this building, are there any sources in the building that are not documented?	Y / N	
	Is there evidence of fugitive dust emissions inside or outside of the building	Y / N	

CAA Checklist

Regulatory Guideline	Question	Response	Comments
	Are there existing air permits or applications applicable to the building?	Y / N	
OAC 3745-31,35	If yes, are the terms and conditions of the permit or the information included on the application (see air emissions database) being followed? Note any differences and update the air emissions database.	Y / N	N/A
OAC 3745-31	Are there any sources that are not included in the air emissions database? If so, note the room, hood number, active or not, POC, and applicable air emission database information on Table B.	Y / N	N/A
OAC 3745-31-03	Are there sources which are lab equipment of lab fumeheads used exclusively for chemical or physical analyses and bench scale lab equipment? These sources do not require a permit. However, the air emissions database should be updated.	Y / N	N/A
	Has there been any release of air contaminants from this building?	Y / N	N/A

Environmental Appraisal Checklist

Building Name: 31-A

Appraisers: MARY SIZEMORE, JOHN PUCKETT, MARY LOUISE HOAGLAND, TERRY GLANDER

Date: 1/24/96

CAA Checklist — N/A

Comments: Note the number of sources/hoods per room, the number that are active, and the POC on the reference document.

TABLE A

Process Source	Room Number	Hood Number	In Database	Active	Chemicals Used	Quantity Used	Quantity to Waste Management	Hours/Yr. Operation	Air Emissions
			Y / N	Y / N					
			Y / N	Y / N					
			Y / N	Y / N					
			Y / N	Y / N					
			Y / N	Y / N					

Source: _____

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Environmental Appraisal Checklist

Building Name: 31-A

Appraisers: MARY SIZEMORE, JOHN PUCKETT, MARY LOUISE HOAGLAND, TERRY GLANDER

Date: 1/24/96

Hazardous Materials (HM) Screening Checklist

Question	Response	Comments
Are any chemicals used or stored in this building, now or in the past?	Y / (N)	If the answer is yes, proceed with the following checklist.

HM Checklist

Regulatory Guideline	Question	Response	Comments
29 CFR 1910.1200(b,f)	All containers of hazardous chemicals shall be labeled as to the identity of the chemical and the appropriate hazard warnings.	Y / N	N/A
29 CFR 1910.1200(g)	MSDS shall be available to the employees in close proximity to the work area.	Y / N	N/A
29 CFR 1910.22, 1910.106, 1910.176	All places of employment, passageways, storerooms and service areas shall be kept clean and orderly and in a sanitary manner. Aisles shall be unobstructed. Drums and containers are not leaking and are tightly sealed.	Y / N	N/A
29 CFR 1910.106	Storage cabinets for flammable materials are constantly kept closed, are fire resistant and are labeled "FLAMMABLE - Keep Fire Away". Containers inside should be labeled and closed. No spills inside cabinet.	Y / N	N/A
29 CFR 1910.106(d)(7)	Incompatible chemicals are not stored together.	Y / N	N/A
29 CFR 1910.106(d)(4)	Inside Flammable/combustible storage rooms must meet the following: 4 in. raised sill or trench that drains to a safe area, liquid tight wall/floor joints, self-closing doors, gravity or mechanical exhaust providing 6 room changes/hr., exhaust switch located outside room, at least one 3 ft. aisle; no cracks in secondary containment.	Y / N	N/A

Environmental Appraisal Checklist

Building Name: 31-A

Appraisers: MARY SIZEMORE, JOHN PUCKETT, MARY LOUISE HOAGLAND, TERRY GLANDER

Date: 1/24/96

HM Checklist

Regulatory Guideline	Question	Response	Comments
29 CFR 1910.106(d)(7)	All flammable/combustible storage locations have at least one 12-B portable fire extinguisher located outside and within 10 ft. of a door opening into any room for storage. No smoking signs are posted.	Y / N	N/A
29 CFR 1910.151	Eyewashes/showers shall be provided within the work area. Ensure unit is operational.	Y / N	N/A
CGA P-1 3.3 & 3.3.10	All gas cylinders (full or empty) shall carry a legible label or marking identifying the contents.	Y / N	N/A
CGA P-1 3.5.3	Full and empty containers should be stored separately with the storage layout planned so that containers comprising of old stock can be removed first with a minimum handling of other containers.	Y / N	N/A
CGA P-1 3.5.8	All compressed gas containers in service or in storage shall be stored standing upright and the container shall be secured.	Y / N	N/A
CGA P-1 4.2.2	Oxygen cylinders shall be separated from flammable gas containers or combustible materials a minimum of 20 ft. or a noncombustible barrier 5 ft. high.	Y / N	N/A
29 CFR 1910.104(2)(10)	Oxygen stored as a liquid shall be on a noncombustible surface. Asphalt is considered combustible. Wood and long dry grass shall be cut back 15 ft. from the container.	Y / N	N/A
29 CFR 1910.104	Bulk oxygen storage shall be permanently placarded "OXYGEN - NO SMOKING - NO OPEN FLAMES".	Y / N	N/A
	Is there a sign posted in each work area regarding emergency egress and emergency response action?	Y / (N)	
	Is there an emergency response plan available?	Y / (N)	

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Environmental Appraisal Checklist

Building Name: 31-A

Appraisers: MARY SIZEMORE, JOHN PUCKETT, MARY LOUISE HOAGLAND, TERRY GLANDER

Date: 1/24/96

HM Checklist

Regulatory Guideline	Question	Response	Comments
	Is there a process area?	Y / (N)	
	Does it have proper containment?	Y / N	N/A
	Is there a liquid bulk transfer area?	Y / (N)	
	Is there proper containment?	Y / N	N/A
	Is there an above ground storage tank? If so, complete Table B.	Y / (N)	

Above Ground Storage Tanks Inventory - N/A

TABLE B—Above Ground Storage Tanks Inventory

Building	Capacity (Gal.)	Contents	Estimated Volume	In Service	Containment	Visual Stains/ Contamination	If Empty, Flushed
				Y / N	Y / N	Y / N	Y / N
				Y / N	Y / N	Y / N	Y / N
				Y / N	Y / N	Y / N	Y / N
				Y / N	Y / N	Y / N	Y / N
				Y / N	Y / N	Y / N	Y / N
				Y / N	Y / N	Y / N	Y / N
				Y / N	Y / N	Y / N	Y / N

Source: _____

Environmental Appraisal Checklist

Building Name: 31-A

Appraisers: MARY SIZEMORE, JOHN PUCKETT, MARY LOUISE HOAGLAND, TERRY GLANDER

Date: 1/24/96

Safe Drinking Water Act (SDWA) Screening Checklist

Does this facility have potable water?	Y / N	If yes, conduct the following survey.

SDWA Checklist

Regulatory Guideline	Question	Response	Comments
OAC 3745 95-02 (A)	Do actual or potential cross-connections exist between potable (light green) and service water (dark green)?	Y / N	N/A
OAC 3745 95-04 (B)(C)	Are backflow prevention devices installed where cross connections (hoses connected to faucets, hot water tank vented directly to a drain) exist?	Y / N	N/A
	Are sources of service water (janitorial and laboratory faucets, or outdoor spigots) posted as non-potable water sources?	Y / N	N/A
	Does the facility contain any water coolers or fountains that are not lead free? Complete Table C.	Y / N	N/A

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TABLE C—Water Fountain Survey – N/A

Building	Location	Model #	Comments / Date of Analysis for Lead

9.55-15

Source: _____

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Environmental Appraisal Checklist

Building Name: 31-A

Appraisers: MARY SIZEMORE, JOHN PUCKETT, MARY LOUISE HOAGLAND, TERRY GLANDER

Date: 1/24/96

RCRA Screening Checklist

Does this facility generate waste or use chemicals?	Y / N	If yes, conduct the following survey.

RCRA Checklist

Regulatory Guideline	Question	Response	Comments
OAC 3745 52-11	Has any material generated been characterized RCRA hazardous?	Y / N	
	Was charactarization by analysis or by process knowledge?	analysis / process	
	Are lab results or documentation of process knowledge readily available?	Y / N	N/A
	Note any uncharacterized material in comment section. Is it waste?	Y / N	N/A
	If yes, proceed with next section.		
OAC 3745 52-11	Are any of the materials noted RCRA hazardous waste?	Y / N	
	If no, note and stop here.		
	If yes, note the location of the management unit, and the method of management, and proceed with the appropriate section below.		

Environmental Appraisal Checklist

Building Name: 31-A

Appraisers: MARY SIZEMORE, JOHN PUCKETT, MARY LOUISE HOAGLAND, TERRY GLANDER

Date: 1/24/96

RCRA Checklist

Regulatory Guideline	Question	Response	Comments
I. HAZARDOUS WASTE STORED IN CONTAINERS			
	Is there an area in the building that could qualify as a Satellite Accumulation Area?	Y / N	
	Is it treated as such?	Y / N	N/A
OAC 3475-52-34 (C)	Has any of the RCRA hazardous waste in this building been managed in Satellite Accumulation Areas? If no, proceed to the next section. If yes, answer the following.	Y / N	
	Are the containers marked with the words hazardous waste, or other words denoting the hazard?	Y / N	N/A
	Are the containers in good condition?	Y / N	N/A
	Are the waste compatible with the containers?	Y / N	N/A
	Are containers managing ignitable hazardous waste stored at least 50 feet from the plant site boundary?	Y / N	N/A
	Are containers kept closed and locked except during filling?	Y / N	N/A
	Are containers moved within 3 days of being filled?	Y / N	N/A

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Environmental Appraisal Checklist

Building Name: 31-A

Appraisers: MARY SIZEMORE, JOHN PUCKETT, MARY LOUISE HOAGLAND, TERRY GLANDER

Date: 1/24/96

RCRA Checklist – N/A

Regulatory Guideline	Question	Response	Comments
OAC 3745-52-11 (A)	If a Satellite accumulation area has been abandoned and/or if waste left in place, and the containers may be subject to the 90-day-storage exclusion. If this exclusion does not apply, go to the next section. If the containers have been in storage under this exclusion, answer the following:		
	Are the containers in good condition?	Y / N	
	Are the waste compatible with the containers?	Y / N	
	Are the containers kept closed except during filling?	Y / N	
	Are the containers managed in such a way, that they are not ruptured, or leaks caused?	Y / N	
	Is the area inspected at least once weekly?	Y / N	
	Is the inspection recorded? Where is the log? Is it properly completed, dated, and signed?	Y / N _____ Y / N	
	Are containers managing ignitable hazardous waste stored at least 50 feet from the facility boundary?	Y / N	
	Are incompatible wastes managed in such a way that they will not react with another incompatible waste?	Y / N	
OAC 3745-52-34(B)	Has any of the waste (except in Building 23, Building 72 and the Burn Area) been managed in excess of 90-days?	Y / N	
	If no go to next section.		
	If yes, note.		
	For Building 23, Building 72 & Burn Area use special checklist.		

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Environmental Appraisal Checklist

Building Name: 31-A

Appraisers: MARY SIZEMORE, JOHN PUCKETT, MARY LOUISE HOAGLAND, TERRY GLANDER

Date: 1/24/96

RCRA Checklist - N/A

Regulatory Guideline	Question	Response	Comments
II. HAZARDOUS WASTE STORED IN TANKS			
OAC 3745-52-32 (B)	Has any chemical waste stored in a tank, piece of process equipment or ancillary equipment been in storage in excess of 90-days?	Y / N	
	If the answer was no, then proceed with the following:	Y / N	
	Has the tank or piece of equipment had an integrity assessment?	Y / N	
	Is there a sump?	Y / N	
	Is it dry?	Y / N	
	Does the tank or equipment have secondary containment?	Y / N	
	Does the tank or equipment have leak detection device(s)?	Y / N	
	Has spill control prevention been enacted?	Y / N	
	Has any hazardous waste stored in a tank, piece of process equipment or ancillary equipment been in storage in excess of 90-days?	Y / N	
	If the answer was no, then proceed with the following:		
	Has the tank or piece of equipment had an integrity assessment?	Y / N	
	Does the tank or equipment have secondary containment?	Y / N	
	Does the tank or equipment have leak detection device(s)?	Y / N	
	Has spill control prevention been enacted?	Y / N	
	Is there a closure plan?	Y / N	
	If yes, then note.		
OAC 3745-67	Has any of the waste been managed in a surface impoundment? If yes, then note. Go to the next section.	Y / N	

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Environmental Appraisal Checklist

Building Name: 31-A

Appraisers: MARY SIZEMORE, JOHN PUCKETT, MARY LOUISE HOAGLAND, TERRY GLANDER

Date: 1/24/96

RCRA Checklist - N/A

Regulatory Guideline	Question	Response	Comments
OAC 3745-68	Has any of the waste been managed in a Landfill? If yes, then note. Go to the next section.	Y / N	
OAC 3745-68	Has any of the waste been managed in an Incinerator (other than Burn area units)? If yes, then note. Go to the next section.	Y / N	
OAC 3745-68	Has any of the waste been managed in a Thermal treatment Unit (other than Burn area units)? If yes, then note. Go to the next section	Y / N	
OAC 3745-69	Has any of the waste been managed in a Miscellaneous Treatment Unit (other than Burn area units)? If yes, then not. Go to the next section.	Y / N	
OAC 3745-56	Has any of the waste been managed in a Waste Pile? If yes, then note. Go to the next section.	Y / N	

General Comments:

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Environmental Appraisal Checklist

Building Name: 31-A

Appraisers: MARY SIZEMORE, JOHN PUCKETT, MARY LOUISE HOAGLAND, TERRY GLANDER

Date: 1/24/96

Asbestos Screening Checklist

Does this facility contain ACBM?	Y / N	If yes, conduct the following survey.

Asbestos Checklist – N/A

Note: Routinely, the asbestos standard for ACBM in schools has been applied to facilities for purpose of cleanup. In addition to AEHERA, there are additional standards in the NESHAPS that may be of importance.

Regulatory Guideline	Question	Response	Comments
ADAPTED FROM TSCA ACBM IN SCHOOLS:			
	Has this building been characterized either through process knowledge, by analyses, or by inspection to determine if it contains asbestos? If no for this building or area note this conclusion in the comment section.	Y / N	
	Is there any evidence of friable asbestos?	Y / N	
	Is the asbestos removal properly managed? (See questions listed below)	Y / N	If there is no asbestos removal, do not complete the following section.
NESHAPS FOR ASBESTOS FOR ANY ONGOING ASBESTOS REMOVAL:			
40 CFR 61.156	There are no discharges of visible emissions to the outside air from collection, processing, packaging, transporting, or deposition of ACBM during the removal.	Y / N	
40 CFR 61.152(b) (1)	ACBM is treated with water in accordance with 40 CFR 152(b)?	Y / N	
40 CFR 61.154	Is friable asbestos adequately wetted during stripping? Or, has an adequate ventilation and collection system been installed?	Y / N	
40 CFR 61.152	Is wetting continued until the waste friable asbestos is collected for disposal?	Y / N	

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Environmental Appraisal Checklist

Building Name: 31-A

Appraisers: MARY SIZEMORE, JOHN PUCKETT, MARY LOUISE HOAGLAND, TERRY GLANDER

Date: 1/24/96

Toxic Substances and Control Act (TSCA) PCB's Screening Checklist

Does this facility potentially contain any PCB's or PCB contaminated equipment?	Y / N	If yes, are transformers labeled (Blue or Yellow stickers)? If yes, conduct the following survey.

TSCA Checklist – N/A

Regulatory Guideline	Question	Response	Comments
40 CFR 761	Has any waste generated in, or from, this building been characterized either through process knowledge or by analyses to determine if it contains PCB's ? If the answer is no, note . If the answer is yes, proceed with next section.	Y / N	
	Based on an inspection, are any of the materials or equipment potentially PCB contaminated? If no, note and stop here. If yes, note the location of the management unit, and the method of management, and proceed.	Y / N	
40 CFR 761.65 (c) (5)	Are PCB articles or containers stored in this building checked for leaks at least once every 30 days?	Y / N	
	If yes, are auditable records maintained.	Y / N	
40 CFR.30 (a) (1) (ix)	Are any PCB transformers in use, or stored for possible reuse, that contain PCB's at concentrations of 500 ppm or greater?	Y / N	
	Are they visually inspected quarterly? If yes, are auditable records maintained?	Y / N	

Environmental Appraisal Checklist

Building Name: 31-A

Appraisers: MARY SIZEMORE, JOHN PUCKETT, MARY LOUISE HOAGLAND, TERRY GLANDER

Date: 1/24/96

TSCA Checklist - N/A

Regulatory Guideline	Question	Response	Comments
40 CFR 761.30 (a) 1,viii	Are all combustible materials (i.e., paints, solvents, plastics, paper, sawn wood, etc.) cleared from areas containing PCB transformers to a distance of five meters?	Y / N	
40 CFR 761.65 (b) (8)	Are all PCB articles and containers labeled with the date they were placed in storage?	Y / N	
	Are labeled PCB articles and containers stored so that the labels can be referenced?	Y / N	
40 CFR 761.65 (a)	Are all PCB's and PCB contaminated items at concentrations above 50 PPM, that are stored for disposal, stored no longer than one year from the date they were placed in storage?	Y / N	
40 CFR 761.62 (b) (1) (i)	Do all PCB storage areas have an adequate roof and walls to prevent rainwater from reaching the stored items?	Y / N	
40 CFR 761.62 (b) (1) (iv)	Are storage are floors curbed and constructed of continuous smooth and impervious materials?	Y / N	
40 CFR 761.62 (b) (1) (i)	Are the curbs at least 6 inches high?	Y / N	
40 CFR 761.62 (b) (1) (iii)	No drains are allowed in storage areas. Are there drains in the storage areas?	Y / N	

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Environmental Appraisal Checklist

Building Name: 31-A

Appraisers: MARY SIZEMORE, JOHN PUCKETT, MARY LOUISE HOAGLAND, TERRY GLANDER

Date: 1/24/96

TSCA Checklist - N/A

Regulatory Guideline	Question	Response	Comments
40 CFR 761.65 (c) (2)	Only non-leaking and undamaged large high voltage PCB's capacitators and PCB-containing electrical equipment are allowed to be stored outside of PCB storage areas, on pallets if stored outside, with containment for 10 percent of the volume of the equipment. Do all PCB's stored in this configuration conform with this requirement?	Y / N	
40 CFR 761.45 and .65	Are all PCB storage areas marked with a large PCB mark as described in 40 CFR 761.45 (a)?	Y / N	
40 CFR 761.65 (c) (5)	Have all leaking PCB articles and containers been transferred to non-leaking containers?	Y / N	
40 CFR 761.65 (c) (6)	Do all PCB storage containers for the storage of liquid and non-liquid PCB's comply with DOT shipping container specifications?	Y / N	

GENERAL COMMENTS:

Environmental Appraisal Checklist

Building Name: 31-A

Appraisers: MARY SIZEMORE, JOHN POCKETT, MARY LOUISE HOAGLAND, TERRY GLANDER

Date: 1/24/96

Low-Level Waste and Transuranic Waste Screening Checklist

Does this facility contain radioactive waste ?	(Y) / N	If yes, conduct the following survey.

Low-Level Waste and Transuranic Waste Checklist

Regulatory Guideline	Question	Response	Comments
Low-Level Waste			
DOE Order 5820.2A Chapter III	Can any waste generated in, or from, this building be characterized either through process knowledge or by analyses to determine if it is LLW ? If the answer is no, note. If the answer is yes, proceed with next section.	Y / N	N/A - THIS BUILDING USED FOR STORAGE ONLY
DOE Order 5820.2A Chapter III.	Are any of the materials noted by inspection LLW? If no, The audit would stop here, because there are no LLW. If yes, note the location of the management unit, and the method of management, and proceed with the section below.	(Y) / N	
DOE Order 5820.2A Chapter III, 3.a.	Have the storage configurations in use in this area been taken into account for keeping external exposures to the general public below 25 mrem/yr?	(Y) N	No public access VRG 12-16-03
	Is the waste stored in a configuration that protects ground-water resources?	(Y) N	
DOE Order 5820.2A Chapter III, 3.b.	Has monitoring been conducted in this area in accordance with DOE Order 5820.2A in order to evaluate the area against the performance standard?	(Y) N	
	Based on field data, does the monitoring conducted in this area conform to the performance standard?	(Y) N	

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Environmental Appraisal Checklist

Building Name: 31-A

Appraisers: MARY SIZEMORE, JOHN PUCKETT, MARY LOUISE HOAGLAND, TERRY GLANDER

Date: 1/24/96

Low-Level Waste and Transuranic Waste Checklist

Regulatory Guideline	Question	Response	Comments
DOE Order 5820.2A Chapter III, 3.d.	Based on field data, is the characterization of the materials in this area sufficient to assure proper segregation to assure proper segregation, treatment, storage, and disposal?	Y / N	
	Based on field data does the characterization as documented at the time of generation of the waste ensure that the actual physical and chemical characteristics, and major radionuclide content of this material are recorded and known at all stages of the waste management process?	Y / N	
	Do characterization data include the following:		
	Physical and chemical characteristics of the waste?	Y / N	
	Volume of the waste (including solidification and absorbent material)?	Y / N	
	Weight of the waste (including solidification and absorbent material)?	Y / N	
	Major radionuclides and their concentrations?	Y / N	
	Packaging date, package weight, external volume?	Y / N	
	How were the concentration of radionuclides determined? Direct methods?	_____ _____	
	How were the concentrations of radionuclides determined? Indirect methods?	_____ _____	
DOE Order 5820.2A Chapter III, 3.h	Is the storage configuration in long term storage sufficient to meet the performance standard?	Y / N	
	Are records maintained at the facility enabling this waste to be traced from its origin?	Y / N	

Environmental Appraisal Checklist

Building Name: 31-A

Appraisers: MARY SIZEMORE, JOHN PUCKETT, MARY LOUISE HOAGLAND, TERRY GLANDER

Date: 1/24/96

Low-Level Waste and Transuranic Waste Checklist

Regulatory Guideline	Question	Response	Comments
TRU WASTE			
	Can any waste generated in, or from this building be characterized either through process knowledge or by analyses to determine if it is TRU waste? If no, note and stop. If yes, proceed with the next section.	Y / N	Storage only MLO 12-16-03
	Are any of the materials noted as being TRU waste during an inspection? If no, note and stop. If the answer is yes, note the location of the management unit, and the method of management and proceed with the appropriate section below.	Y / N	
DOE Order 5820.2A, Chapter II, 3.a	Was this material evaluated as soon as possible in the generating process, to determine if it is TRU (>100nCi/g), if it is recoverable, or if it is waste? (Note if the activity level is less than 100nCi/g, the waste is not TRU, and can be managed as LLW.)	Y / N	
	Did the determination of TRU radionuclide concentration include the mass of the container, including shielding? These should be included in calculating the specific activity of the waste.	Y / N	

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Environmental Appraisal Checklist

Building Name: 31-A

Appraisers: MARY SIZEMORE, JOHN PUCKETT, MARY LOUISE HOAGLAND, TERRY GLANDER

Date: 1/24/96

Low-Level Waste and Transuranic Waste Checklist

Regulatory Guideline	Question	Response	Comments
DOE Order 5820.2A, Chapter II, 3.b	Has the TRU waste been assayed or otherwise evaluated to determine its radioactive content prior to storage?	Y / N	
	Has the TRU waste been characterized or otherwise evaluated to determine if hazardous waste is present?	Y / N	
	Has classified TRU waste been treated to destroy the classified characteristics?	Y / N	
DOE Order 5820.2A, Chapter II 3.d	Has all newly generated TRU waste been packaged in non-combustible packaging that meets DOT requirements?	Y / N	
	Have all Type A TRU waste packages been equipped with a method to prevent pressure buildup?	Y / N	
	Have all TRU packages been marked, labeled and sealed in accordance with 40 CFR 261 Subpart C and 49 CFR 172 Subparts D, E and 49 CFR 173 Subpart I?	Y / N	

Environmenta. ,pi aisal Checklist

Building Name: 31-A

Appraisers: MARY SIZEMORE, JOHN PUCKETT, MARY LOUISE HOAGLAND, TERRY GLANDER

Date: 1/24/96

Low-Level Waste and Transuranic Waste Checklist

Regulatory Guideline	Question	Response	Comments
DOE Order 5820.2A, Chapter II 3.e	Has the TRU waste been segregated in manner that will not permit commingling of TRU waste with LLW or high-level waste?	Y / N	
	Has the TRU waste been protected from unauthorized access?	Y / N	
	Has the TRU waste been monitored periodically to ensure that it is not releasing its radioactive and/or hazardous constituents?	Y / N	
	Has this TRU waste storage area been designed, constructed, maintained, and operated to minimize the possibility of fire, explosion, or accidental release of its radioactive and/or hazardous constituents?	Y / N	
	Does the facility have a contingency plan designed to minimize the adverse impacts of fire, explosion, or accidental release of its radioactive and/or hazardous constituents?	Y / N	

GENERAL COMMENTS:

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Environmental Appraisal Checklist

Building Name: 31-A

Appraisers: MARY SIZEMORE, JOHN PUCKETT, MARY LOUISE HOAGLAND, TERRY GLANDER

Date: 1/24/96

Waste Minimization/Pollution Prevention Activities Screening Checklist

Does this facility generate waste or use chemicals?	Y / (N)	If yes, conduct the following survey.

Waste Minimiaztion/Pollution Prevention Activities Checklist

Regulatory Guideline	Question	Response	Comments
	Based on available information and a walk through, are there any apparent opportunities to curtail the consumption of raw materials (including but not limited to paper, chemicals, electricity, and etc.). If yes, list candidate areas in the comment section.	Y / N	
	Are there solvent wastes?	Y / N	
	Is vehicle maintenance performed?	Y / N	
	Are oils used ?	Y / N	
	Are these corrosive wastes?	Y / N	
	Are there sludges?	Y / N	
	Are there halogenated organic (nonsolvent) wastes?	Y / N	
	Are metals recovered from wastewater?	Y / N	
	Is waste sludge generated?	Y / N	
	Are any waste minimization practices used that reduce the generation of sludge?	Y / N	
	Ion exchange process?	Y / N	
	Lead in gasoline lowered to reduce tank sludge toxicity?	Y / N	
	Storage tank agitators installed?	Y / N	
	Corrosive resistant materials used?	Y / N	
	Prevention of crude oil oxidation ?	Y / N	
	Drying?	Y / N	

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Building Name: 31-A

Appraisers: MARY SIZEMORE, JOHN PUCKETT, MARY LOUISE HOAGLAND, TERRY GLANDER

Date: 1/24/96

Waste Minimization/Pollution Prevention Activities Checklist

Regulatory Guideline	Question	Response	Comments
HALOGENATED ORGANIC (NONSOLVENT) WASTES			
	Are halogenated organic wastes used as fuel in cement kilns?	Y / N	
	Are baghouse filters used to collect pesticides and pesticide intermediates?	Y / N	
	Are solid wastes generated from the collection of baghouse dust?	Y / N	
	Wet instead of dry grinding used?	Y / N	
	The output spray dried?	Y / N	
	Has baghouse emptying and recycling of baghouse fines been scheduled?	Y / N	
	Have operations been evaluated to improve procedures such as handling, storage and spill prevention for increased efficiency?	Y / N	
METAL WASTES			
	Are any technologies for the recovering of metals from waste rinsewater used?	Y / N	
	Evaporation of waste rinsewater?	Y / N	
	Reverse osmosis?	Y / N	
	Ion exchange?	Y / N	
	Electrolysis?	Y / N	
	Agglomeration?	Y / N	
CORROSIVE WASTES			
	Are acidic or basic cleaning solutions used as treatment for pH adjustment chemicals?	Y / N	

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Environmental Appraisal Checklist

Building Name: 31-A

Appraisers: MARY SIZEMORE, JOHN PUCKETT, MARY LOUISE HOAGLAND, TERRY GLANDER

Date: 1/24/96

Waste Minimization/Pollution Prevention Activities Checklist

Regulatory Guideline	Question	Response	Comments
	Are ion exchange resins used to remove heavy metals and cyanides from acid and base solutions?	Y / N	
	Is crystallization used to remove corrosives from solution by cooling?	Y / N	
	Is the process of evaporation of liquid wastes by heating used to leave behind a more concentrated solution?	Y / N	
CYANIDE AND REACTIVE WASTES			
	Has non-cyanide or low concentration of cyanide process replaced zinc cyanide bath ?	Y / N	
	Are any of these processes used to recycle cyanide wastes?	Y / N	
	Refrigeration/crystallization?	Y / N	
	Evaporation?	Y / N	
	Ion exchange?	Y / N	
	Membrane separation which includes reverse osmosis or electrodialysis?	Y / N	
VEHICLE MAINTENANCE			
	How are auto parts cleaned?	Y / N	
	Solvent sink?	Y / N	
	Solvent dunk bucket?	Y / N	
	Solvent dip tank?	Y / N	
	Are parts cleaning solvents used for anything else besides cleaning parts?	Y / N	
	Are spills reduced by locating sinks or dunk buckets near auto service bays?	Y / N	

Building Name: 31-A

Appraisers: MARY SIZEMORE, JOHN PUCKETT, MARY LOUISE HOAGLAND, TERRY GLANDER

Date: 1/24/96

Waste Minimization/Pollution Prevention Activities Checklist

Regulatory Guideline	Question	Response	Comments
	Are cleaned parts drained on the sink to minimize solvent spills?	Y / N	
	Are drip tanks used to capture losses?	Y / N	
	Is a solvent sink used for mineral solvents rather than a dunk bucket or dip tank?	Y / N	
	Does a waste hauler collect solvent waste for recycling or treatment?	Y / N	
OILS			
	What kind of oils are used?		
	Hydraulic oil?	Y / N	
	Transformer oil?	Y / N	
	Metal working fluids?	Y / N	
	Spent lubricating oils?	Y / N	
	Can the process be modified or changed to use water-based fluids?	Y / N	
	Are these good housekeeping and operation practices used to minimize oil waste production?		
	Use oils not contaminated with other liquids?	Y / N	
	Oil spills prevented?	Y / N	
	Drip pans installed?	Y / N	
	Oil soaked rags laundered?	Y / N	
	Rags and absorbants used to their limit?	Y / N	

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Environmental Appraisal Checklist

Building Name: 31-A

Appraisers: MARY SIZEMORE, JOHN PUCKETT, MARY LOUISE HOAGLAND, TERRY GLANDER

Date: 1/24/96

Waste Minimization/Pollution Prevention Activities Checklist

Regulatory Guideline	Question	Response	Comments
	Are these treatment techniques used to promote separation of oil/water wastes?		
	Reclaiming process to remove water and solvents by heat?	Y / N	
	Gravity setting?	Y / N	
	Screening?	Y / N	
	Centrifugation?	Y / N	
	Filtration?	Y / N	
SOLVENT WASTES			
	Has there been an attempt to reduce volume or toxicity by:		
	Eliminating solvents?	Y / N	
	Reducing the use of solvents?	Y / N	
	Reducing the loss of solvents?	Y / N	
	Increasing recyclability?	Y / N	
	Are solvents segregated?	Y / N	
	Are waste solvents free from water and garbage?	Y / N	
	Are recycled solvent containers labeled as such?	Y / N	
	Are containers kept closed?	Y / N	
	Free and sheltered from the elements?	Y / N	
	Are solvent tanks kept as free from contaminations as possible so that the waste can be recycled?	Y / N	
	Is a method used to minimize the use of new materials such as a countercurrent process?	Y / N	

Building Name: 31-A Appraisers: MARY SIZEMORE, JOHN PUCKETT, MARY LOUISE HOAGLAND, TERRY GLANDER Date: 1/24/96

Waste Minimization/Pollution Prevention Activities Checklist

Regulatory Guideline	Question	Response	Comments
	If there is a recycling program, what technique is used?	Y / N	
	Distillation?	Y / N	
	Solids removal?	Y / N	
	Dispersion breaking?	Y / N	
	Dissolved and emulsified organics recovery?	Y / N	
	Are any of these housekeeping procedures used to minimize the production of solvent wastes?		
	Separators cleaned and checked?	Y / N	
	Parts not allowed to enter the degreaser while wet?	Y / N	
	Sludge from the bottom of the tank not allowed to accumulate?	Y / N	
	Lids kept on tanks?	Y / N	
	Freeboard space on tanks increased?	Y / N	
	Are better operating practices used to reduce waste?	Y / N	
	How long is solvent waste stored and where?	_____ _____	

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Building Manager's Questionnaire

Building Name: 31-A Building Manager: L.T. Lamsa Phone: [illegible] Date: 12-07-95
Alternate: Doug [illegible] Phone: [illegible]

1. What are the access requirements (training, clearance, etc.)?

   SAP WORKER II [illegible]

2. What protective equipment is required to enter the building?

   SAFETY GLASSES

3. Are there any restricted areas? (Yes) No
   Where are they?

   THE BUILDING ITSELF.

4. Provide a physical description of the building.

Building 31-A is an approximately 2,650-ft^2, prefabricated metal building with a metal roof. Building is 9 years old. Building itself is not contaminated with radioactive or energetic materials.

Source: Mound Facility Physical Characterization, 12-1-93

5. Provide a drawing of the building.

Attached.

6. What is the current building use?

Building supports Decontamination and Decommissioning (D & D) and waste management operations. Building is used to store ~~empty~~ waste packages. TRU & LLW

Source: Mound Building, 5-9-95

7. What is the history of building use other than that described in #6?

Source: Mound Buildings, 5-9-95

Building Manager's Questionnaire

Building Name: 31-A Building Manager: L.T. Lamsa Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

8. What are ongoing operations or processes? What are the raw materials and waste streams from each process? Who is the best contact for each process?

Process(es) Housed: Storage and staging of LSA and TRU wastes

How Wastes Are Generated:

No wastes generated.

Contact:
Phone#:

Source: Characterization of Mound's Hazardous, Radioactive, and Mixed Wastes, (8-15-90).

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Building Manager's Questionnaire

Building Name: 31-A Building Manager: L.T. Lamsa Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

9. In the last six months, have any modifications been made to the building or to processes in the building? Yes No

10. Does the building have air emission sources? No

Process Source	Room Number	Hood Number	Active	Chemicals Used	Quantity Used	Quantity to Waste Management	Lbs./Yr. Operation	Air Emissions
			Y / N					
			Y / N					
			Y / N					
			Y / N					
			Y / N					

Source: Mound Air Emissions Database 11/30/95

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Building Manager's Questionnaire

Building Name: 31-A Building Manager: L.T. Lamsa Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

11. Describe air pollution control equipment used to reduce emissions for each source. None Listed

Process Source	Emissions	Control Equipment	Functioning
			Y / N
			Y / N
			Y / N
			Y / N
			Y / N

Source: Air Permits 2/4/95

12. For existing permits are emissions monitored? At what frequency? Where are the records maintained? None Listed

Process Source	Permit	Log	Permit Conditions & Frequency of Monitoring
		Y / N	
		Y / N	
		Y / N	
		Y / N	
		Y / N	

Source: Air Permits 2/4/95

13. Does the building have potable water? Yes No

14. Does the building discharge to the storm sewer? Yes No

15. Does the building discharge to the sanitary sewer? Yes No

16. Has an asbestos survey been conducted? Yes
What are the results? SUSPECTED See Appendix I VKN 12-16-03

Source: Technical Manual MD-10391, Issue 3 Asbestos Program Manual 9/6/95

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Building Manager's Questionnaire

Building Name: 31-A Building Manager: L.T. Lamsa Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

17. Does the building contain transformers or capacitors? NO

Source: PCB ANNUAL DOCUMENT LOG

18. Has the building been identified as containing PCBs? NO

Source: PCB ANNUAL DOCUMENT LOG

19. What chemicals are used or stored inside or outside of the building? Include compressed gasses not in large tanks.

Chemical Name	State	Amount (MAX)
NONE		

Source: Chemical Inventory 1994

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Building Manager's Questionnaire

Building Name: 31-A Building Manager: L.T. Lamsa Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

20. Has there been a reported spill, leak, or other release of any chemical? Yes (No)
What, how much, and what clean-up measures were followed?

Chemical	Amount	Clean-up Measures

Source: LARRY LAMSA

21. Where do waste chemicals go?

WASTE MANAGEMENT'S HAZ WASTE PICKUP, IF APPLICABLE.

22. What janitorial supplies are stored inside or outside of the building?

NONE

23. Where do excess janitorial supplies go?

NO APPLICABLE.

Source: LARRY LAMSA

24. Are pesticides or herbicides stored or used in or around the building? Yes (No)

Chemical	Amount	Chemical	Amount

Source: LARRY LAMSA

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Building Manager's Questionnaire

Building Name: 31-A Building Manager: L.T. Lamsa Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

25. Does the building contain active or inactive above ground storage tanks? Yes No
For each tank, list the content, quantity, last inspection, registration number.

NONE

26. Is there a sump or pit or underground tank in or around the building?
Yes No Unknown
Is it double-walled? What does it contain? How many days per year is it filled?
Is there an emergency overflow tank? Have there been previous overflows?

Double-Walled	Contents	Days/Year in Use	Overflow Tank	Previous Overflow
Y / N			Y / N	Y / N

Source: LARG LAMSA

27. Does the building generate, store, or dispose of hazardous waste? Yes No

Materials	Amount
Aerosol Cans	125.0
Aerosol Cans	111.8
Aerosol Cans	47.2

Source: Characterization of Mounds Hazardous, Radioactive, and Mixed Wastes 08/15/90

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Building Manager's Questionnaire

Building Name: 31-A Building Manager: L.T. Lamsa Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

28. Does the building have abandoned process equipment such as tanks, piping, containers, etc.? Yes (No)

29. Is waste material stored in or around the building for more than 90 days?
Yes (No) ASSUMPTION: LOW-LEVEL RAD AN
WASTE ≠ WASTE MATERIAL

30. Has the building been identified as a 90 day waste accumulation area?
Yes (No)

31. Has any area in the building been identified as a satellite accumulation area? Yes (No)

32. Is mixed waste generated, stored, or disposed of from the building? Yes (No)
Where are logs found?

Process	Waste	Stored	Disposed	Logs
		Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N

Source: _____

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Building Manager's Questionnaire

Building Name: 31-A Building Manager: L.T. Lamsa Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

33. Is TRU radioactive waste generated, stored, or disposed of from the building?
Yes No
Where are logs found? JOHN LYONS

Process	Waste	Stored	Disposed	Logs
NONE	TRU	Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N

Source: LARRY LAMSA

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Building Name: 31-A Building Manager: L.T. Lamsa Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

34. Is low-level radioactive waste generated, stored, or disposed of from the building? (Yes) No
Where are logs found? RAD WASTE MANAGEMENT

Process	Waste	Stored	Disposed	Logs
NONE	LLW	(Y) / N	Y / (N)	(Y) / N
		Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N

Source: LARRY LAMSA

35. Identify all administrative orders, temporary or permanent injunctions, civil administrative penalties, or criminal activities issued against the building.

NONE.

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Building Manager's Questionnaire

Building Name: 31-A Building Manager: L.T. Lamsa Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

36. Is there a waste minimization program in the building? Yes **No**
Discuss your ideas about how to minimize waste.

NOT MUCH WASTE IS GENERATED

37. Has a pollution prevention program been developed for the building? Yes **No**

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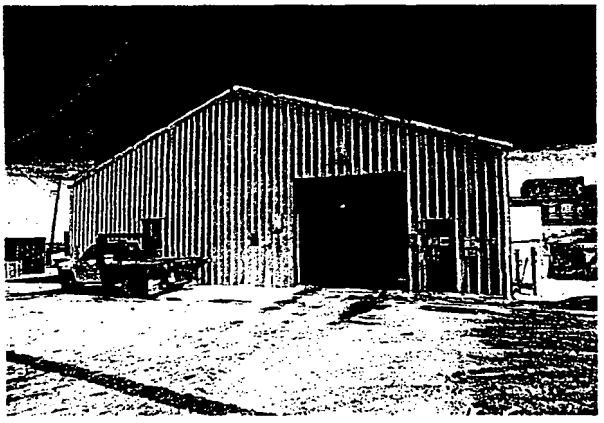
Appendix G

Radiological Information

Pre-demolition Characterization Report

For

Buildings 31/31A



Prepared By: Roderick C. Case **Date:** 5/4/04

Approved By: A. Stephen Collas **Date:** ~~5/5/04~~ 5/4/04

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Historical Overview

Building 31 and Building 31A share much of the same history. Some historical references refer to Building 31/31A as being separate buildings (i.e., Building 31 and Building 31A) while other references refer to Building 31 and Building 31A as one building. Other references singularly refer to Building 31 without any differentiation between Building 31 or Building 31A.

Based upon construction drawings, Building 31 was constructed in about 1965 with 6,090-ft^2. Building 31A or the Building 31 Annex was constructed in 1984 with a square footage of 2,650-ft^2. These two structures and their slabs, and the metal grates and truck dock to the south of Building 31 will be removed per the Buildings 31 and 31A demolition work package.

The area under and around Building 31 is the former Thorium Storage and Re-drumming Area or Area 9. Between December 1954 and June 1955, 6,000 55-gallon drums of thorium sludge were delivered to Mound from the United Lead Company Middlesex Sampling Plant in Middlesex, New Jersey. Some of these drums were stored at Area 9, and prolonged outside storage and internal exposure to corrosive solutions necessitated their frequent repackaging to ensure containment of the ore residue. Drums were eventually moved to Area 1 where the thorium sludge was removed and placed in Building 21 (Thorium Sludge Storage Facility) beginning in July 1964. In 1965, an area of approximately 40,000 ft^2 was excavated from Area 9 and backfilled with clean soil to remove thorium-contaminated soils. The area is currently covered with asphalt. Low levels of plutonium and thorium contamination were detected in soils in this area (maximum plutonium-238 concentration of 8.15 pCi/g and maximum thorium concentration of 12 pCi/g) during the 1982 to 1985 Radiological Site Survey[1].

Since these buildings are physically separate and each had a somewhat different function, this Report will discuss them separately.

<u>Building 31</u>

Building 31, "Contaminated Material Storage Building" is located on the SM/PP Hill, in the east-central portion of Mound. The building was originally used to store recoverable plutonium wastes that had been moved from the SM storage field east of Building 21. Throughout its history it was used for interim storage of packaged radioactive waste waiting final disposition. The building is a one-story, sheet metal building occupying 6,090 ft^2. At one time, a radioactive waste storage room divided into three bays occupied the northeast section of the building. The waste was normally noncombustible equipment or soil contaminated with plutonium-238. This room has since been removed. In 1989, a heating system was added to the building and included the application of a sprayed on insulating material.

A complete history of Building 31 can be found in Reference 1.

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[1] *Operable Unit 9 Site Scoping Report: Vol. 7—Waste Management*

Current Status and Plan

Building 31 is scheduled for demolition in accordance with the Miamisburg Closure Project goals. Current survey data indicates that contamination is present on the floor at multiple locations. The highest observed activity is $3.88E^6$ dpm/100cm^2 alpha and $1.80E^5$ dpm/100cm^2 beta. Loose surface contamination was found at one location at 166 dpm/100cm^2 alpha. The major isotope identified by alpha spectroscopy is Pu-238. Since extensive remediation of the floor is not considered practical, localized decontamination will be conducted to reduce significantly contaminated areas followed by the application of a paint fixative in accordance with MD 80043, Operation 900.6.5. The building floor will be removed and disposed of as low level radioactive waste.

The interior building walls cannot be direct surveyed due to the sprayed on insulating material. An assessment was made to determine the feasibility of insulation removal. Samples were obtained of the insulation and analyzed by alpha spectroscopy. Elevated plutonium and thorium activity was found slightly above the 10^{-5} risk based guideline values (RSDS#04-TF-0013). An evaluation was made to determine if the insulation could be effectively removed to allow the metal surface to be direct surveyed for release. The insulation was removed from a 1-meter square area and direct surveyed. Gross alpha activity was observed at 340-600 dpm/100cm^2. An acid etch sample of this area was obtained and shown to be 1148 dpm Pu-238 (RSDS# 04-TF-0072). It was decided that it would be impractical to proceed with insulation removal and the upper portion of the structure would also be removed as low level waste.

A characterization survey was performed on the Building 31 Dock. Elevated alpha measurements were observed at multiple locations. Four of the highest locations from 100 to 270 dpm/100cm^2 were acid etch sampled and found to be Pu-238 (RSDS#04-TF-0135). Building 31 dock will be removed as low level waste. The fill material under the dock will be surveyed and sampled when it is accessible to determine if residual contamination is present under the dock.

The metal grates to the south of Building 31 were put in place to prevent disturbance of the soil, which is known to be contaminated with thorium-232. The grates will be removed, surveyed, and dispositioned in accordance with the Generic Process for Disposition of Buildings and MD 80036, Operation 10011, Debris Pile, Rolloff, and RMMA Deposting Surveys.

<u>Building 31A</u>

Building 31A was constructed in 1984 as a 2650 ft^2 pre-fabricated structure, to the north of the original Building 31. Building 31A appears to have been constructed on an existing asphalt pad. Footers/piers were set at approximately 8' (western side—approximately 8'-2" to 8'4") along the sides of the building. The top elevations for the footer/piers are about 866' to 867 feet. And can range in depth from 4'-5' along the eastern side to approximately 8' along the western side.

This building provides a location to store and stage low level waste containers prior to shipment from the Mound Plant. The containers are off loaded from Mound vehicles, inspected for damage and proper labeling, weighed, stored, staged for shipment, and

reloaded onto transports for shipment to an approved waste disposal site. A complete history of Building 31A can be found in Reference 2.

Current Status and Plan

Building 31A is scheduled for demolition in accordance with the Miamisburg Closure Project goals. Scoping surveys performed on Building 31A found no residual contamination above the DOE Order 5400.5 Surface Release criteria (03-TF-0313). Building 31A walls and structural material will be surveyed and dispositioned in accordance with the Generic Process for Disposition of Buildings and MD 80036, Operation 10011, Debris Pile, Rolloff, and RMMA Deposting Surveys.

Summary

Based on the above information, the Department of Energy determined that a Removal Action (RA) was warranted and the Core Team agreed to apply the Contingent Removal Action Memorandum Addendum 1. The RA contaminants of concern are plutonium-238 and thorium-232.

The RA will consist of demolition and removal of the Buildings 31 and 31A structures and slabs, the asphalt staging area, and the metal grates and truck dock south of Building 31, and shipping of debris to approved disposal facilities. Soil below and around the truck dock has not been evaluated. As part of this RA, soil sampling will be conducted per a Core Team approved Building 31 Dock SAP.

Removal of contaminated soil in PRS 267 is a separate RA. The soil RA is authorized per Potential Release Site Package, PRS 267, Final, August 2003.

References

1. Building 31 *Structural History and Process History Summary Background Document,* November 2003
2. Building 31A *Structural History and Process History Summary Background Document,* November 2003

Attachments

Supporting Radiological Survey Data Sheets

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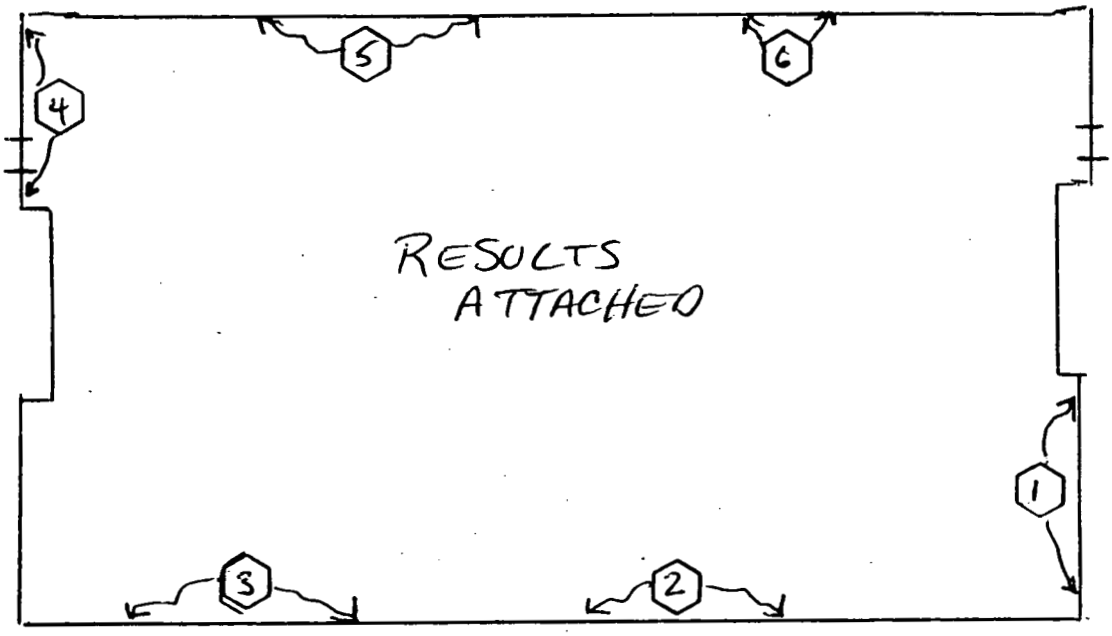
RADIOLOGICAL SURVEY DATA SHEET

1 of 8

LOCATION: (BLDG./AREA/ROOM) 31	SURVEY NO. 04-TF-0013
PURPOSE: COMPOSITE SAMPLES OF WOOL INSULATION INTERIOR WALLS	RWP NO. N/A
	DATE: 1-12-04
	TIME: 1430

MAP/DRAWING

COPY



⬡ = composite samples - samples taken between ARROWS

LEGEND: # = mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
△# = mrem/hr neutron
[#] = air sample number
(#) = swipe number
(#/α) or/β = direct cont. measurement in dpm/100cm²

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
2360	5836/5848	3-12-04
	N/A	

[redacted] HP # 6178 Date: 1-14-04

Counted by: (Signature) SEE ATTACHED HP # Date:

Counted by: (Print Name)

Reviewed/App[redacted] HP # 7492 Date: 1-14-04

Reviewed/Approved by: (Print Name) [redacted]

ML-9620 (2-98)

Survey No. 04-TF-0013

RADIOLOGICAL SURVEY DATA SHEET (cont.)

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
		N	A	

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Cor
		N	A	

COMMENTS: 2360 USED TO FIELD CHECK SAMPLES BEFORE ~~SUM~~ SUBMITTING TO LABS
DGA 1-14-04

NOTES:

1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of r are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

ML-9620A (4-98)

GAMMA ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL00688
File ID: MG102713.s0
Priority: No

Description\Location
31-Insulation #1

Collector: 6178
Date Received: 1/12/04
Date Collected: 1/12/04

Radionuclide	Activity (pCi)	MDA
Co-60	0	26.05
Cs-137	0	26.75
Pb-210	320.6	231
Ra-226	0	306.7
Ac-227	38.78	83.39
Th-230	1210	1471
Th-232	9.28	70.93
Pu-238	0	3436
Am-241	0	21.69
Bi-207	2.3	17.32
Bi-210	1.73	22.29
Th-229	0	255.3
Pa-231	0	821.4

Comments

04-TF-0013

Date [redacted] of 8

Date: 1/13/04 Counted By: 5288 Analyzed By: 7559 Initials [redacted]

GAMMA ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL00689
File ID: MG102714.s0
Priority: No

Description\Location
31-Insulation #2

Collector: 6178
Date Received: 1/12/04
Date Collected: 1/12/04

Radionuclide	Activity (pCi)	MDA
Co-60	0	38.88
Cs-137	13.11	19.7
Pb-210	136.5	281.7
Ra-226	0	397.9
Ac-227	0	138.9
Th-230	0	1855
Th-232	53.56	54.61
Pu-238	0	7651
Am-241	0	23.12
Bi-207	0	19.15
Bi-210	0	31.27
Th-229	0	260.9
Pa-231	0	778.8

Comments

04-TF-0013
DJH 4 of 8

Date: 1/13/04 Counted By: 5288 Analyzed By: 7559 Initials [redacted]

GAMMA ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL00690
File ID: MG102715.s0
Priority: No

Description\Location
31-Insulation #3

Collector: 6178
Date Received: 1/12/04
Date Collected: 1/12/04

Radionuclide	Activity (pCi)	MDA
Co-60	0	34.23
Cs-137	0	22.22
Pb-210	112.4	313.3
Ra-226	124.2	309.1
Ac-227	0	120.3
Th-230	0	2066
Th-232	50.05	53.12
Pu-238	1315	6413
Am-241	17.48	14.78
Bi-207	1.46	16.78
Bi-210	0	27.53
Th-229	0	273
Pa-231	0	773.6

Comments

04-TF-0013

DJH 5 of 8

Date: 1/13/04 Counted By: 5288 Analyzed By: 7559 Initials [redacted]

GAMMA ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL00691
File ID: MG102716.s0
Priority: No

Description\Location
31-Insulation #4

Collector: 6178
Date Received: 1/12/04
Date Collected: 1/12/04

Radionuclide	Activity (pCi)	MDA
Co-60	0	38.88
Cs-137	6.44	12.99
Pb-210	232.6	297.4
Ra-226	139.2	307
Ac-227	74.14	88.59
Th-230	0	1952
Th-232	119.7	54.53
Pu-238	0	7614
Am-241	9.08	18.12
Bi-207	0	20.37
Bi-210	7.47	19.34
Th-229	0	258.6
Pa-231	426.6	634

Comments

04-TF-0013

6 of 8

AgH

Date: 1/13/04 Counted By: 5288 Analyzed By: 7559 Initials [redacted]

GAMMA ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL00692
File ID: MG102717.s0
Priority: No

Description\Location
31-Insulation #5

Collector: 6178
Date Received: 1/12/04
Date Collected: 1/12/04

Radionuclide	Activity (pCi)	MDA
Co-60	0	29
Cs-137	0	22.66
Pb-210	410	254.7
Ra-226	93.39	316.3
Ac-227	40.86	104.9
Th-230	0	2235
Th-232	14.26	94.77
Pu-238	1788	5910
Am-241	0	24.33
Bi-207	7.42	9.53
Bi-210	18.85	16.11
Th-229	121	237.6
Pa-231	132.1	699.3

Comments

04-TF-0013

DGH 7 of 8

Date: 1/13/04 Counted By: 5288 Analyzed By: 7559 Initials [redacted]

GAMMA ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL00693
File ID: MG102718.s0
Priority: No

Description\Location
31-Insulation #6

Collector: 6178
Date Received: 1/12/04
Date Collected: 1/12/04

Radionuclide	Activity (pCi)	MDA
Co-60	0	34.51
Cs-137	9.91	12.97
Pb-210	321.2	267.2
Ra-226	126.4	302.5
Ac-227	46.49	100.9
Th-230	1164	1361
Th-232	0	112.1
Pu-238	597.4	7045
Am-241	10.87	21.73
Bi-207	0	18.54
Bi-210	15.56	20.67
Th-229	12.17	255.2
Pa-231	0	971.8

Comments

04-TF-0013

DJH 8 of 8

Date: 1/13/04 Counted By: 2257 Analyzed By: 7559 Initials [redacted]

BWXT of Ohio, Inc.

ANALYTICAL SERVICES REQUEST FOR ANALYSIS

DATE SUBMITTED:	SAMPLE TYPE:	COLLECTED BY:	NUMBER OF SAMPLES
1-14-04	WOOL INSULATION	HARVEY	6
PROJECT/FUNCTION:	PRIMARY CONTACT/PHONE NO.:		MAIL STOP:
BOSS	HARVEY 3320		
CHARGE NUMBER:	DATE(S) COLLECTED:	RSDS# (if applicable):	ATTACHMENTS (list):
	1-12-04	04-TF-0013	

ANALYSES REQUESTED (check):

- ☐ ^3H
- ☐ Characterize/Approve for Sanitary or Storm Discharge. Estimate of Total Volume for Release_____ Approved_____
- ☐ Gross Alpha
- ☐ Air Filter – Isotopic Analysis
- ☒ Characterization per MD-80036, Operation #10015
- ☐ Isotopic Analysis: Pu____ U_____ Th____ Am____ Other_____
- ☐ Other _____

ADDITIONAL INFORMATION:

NOTE: Attach additional information (e.g. RSDS, screening results, collection data, and gamma spec. results) if applicable

LAB IDENTIFICATION	SAMPLE LOCATION	SAMPLE NUMBER	RESULTS
0400306	31	1	
307	↓	2	
308		3	
309		4	
310		5	
311		6	

COMMENTS:

ANALYZED BY:	DATE:
L. C. Hopkins	1-20-04

ML-5222 (1-01)

Laboratory ID#: 0400306 - 0400311
Project/function: BOSS
Submitted: Jan 14, 2004
Submitted by: D. Harvey
Point of Contact: D. Harvey x3320
RSDS#: 04-TF-0013
Date: Jan 14, 2004

Lab ID 0400306
Sample Location 31 #1

Isotope	dpm/g	Uncertainty +/-	LDL
Pu-238	3.27	0.26	0.04
Pu-239/240	<LDL	<LDL	0.01
Th-232	0.09	0.02	0.01
Th-230	0.60	0.07	0.01
Th-228	0.15	0.03	0.04
Th-227	0.04	0.02	0.01
U-238	<LDL	<LDL	0.04
U-235	0.12	0.03	0.04
U-233/234	0.18	0.03	0.04

Lab ID 0400307
Sample Location 31 #2

Isotope	dpm/g	Uncertainty +/-	LDL
Pu-238	6.04	0.62	0.13
Pu-239/240	0.05	0.03	0.05
Th-232	0.11	0.03	0.02
Th-230	1.05	0.11	0.04
Th-228	0.24	0.04	0.02
Th-227	0.10	0.02	0.02
U-238	0.28	0.04	0.01
U-235	0.07	0.02	0.01
U-233/234	0.23	0.04	0.04

Lab ID 0400308
Sample Location 31 #3

Isotope	dpm/g	Uncertainty +/-	LDL
Pu-238	4.10	0.32	0.04
Pu-239/240	<LDL	<LDL	0.01
Th-232	0.04	0.02	0.04
Th-230	0.30	0.05	0.02
Th-228	0.12	0.03	0.02
Th-227	0.05	0.02	0.02
U-238	0.10	0.02	0.01
U-235	0.04	0.02	0.04
U-233/234	0.19	0.03	0.01

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Lab ID 0400309
Sample Location 31 #4

Isotope	dpm/g	Uncertainty +/-	LDL
Pu-238	14.76	1.08	0.05
Pu-239/240	<LDL	<LDL	0.04
Th-232	0.07	0.02	0.02
Th-230	0.37	0.06	0.06
Th-228	0.22	0.04	0.02
Th-227	<LDL	<LDL	0.04
U-238	0.08	0.02	0.02
U-235	0.07	0.02	0.04
U-233/234	0.19	0.04	0.07

Lab ID 0400310
Sample Location 31 #5

Isotope	dpm/g	Uncertainty +/-	LDL
Pu-238	5.93	0.45	0.04
Pu-239/240	0.02	0.01	0.01
Th-232	0.09	0.02	0.01
Th-230	0.38	0.05	0.04
Th-228	0.15	0.03	0.05
Th-227	0.07	0.02	0.04
U-238	0.11	0.03	0.04
U-235	0.05	0.02	0.01
U-233/234	0.10	0.02	0.01

Lab ID 0400311
Sample Location 31 #6

Isotope	dpm/g	Uncertainty +/-	LDL
Pu-238	10.73	0.78	0.04
Pu-239/240	0.02	0.01	0.01
Th-232	0.11	0.03	0.04
Th-230	0.26	0.04	0.05
Th-228	0.13	0.03	0.02
Th-227	0.05	0.02	0.02
U-238	<LDL	<LDL	0.04
U-235	0.02	0.01	0.01
U-233/234	0.04	0.01	0.01

[redacted]

1585 1.20.04
HP# Date

7783 1/20/4
HP# Date

G 17 of 96

Data Analysis of Insulation Samples Reported in
RSDS# 04-TF-0013

Sample Data

Samples 1-6 in dpm/g

	400306		400307		400308		400309		400310		400311	
	dpm/g	Uncertainty	dpm/g	Uncertainty	dpm/g	Uncertainty	dpm/g	Uncertainty	dpm/g	Uncertainty	dpm/g	Uncertainty
Pu 238	3.27	0.26	6.04	0.62	4.1	0.32	14.76	1.08	5.93	0.45	10.73	0.78
Pu 239/240	<LDL	<LDL	0.05	0.03	<LDL	<LDL	<LDL	<LDL	0.02	0.01	0.02	0.01
Th 232	0.09	0.02	0.11	0.03	0.04	0.02	0.07	0.02	0.09	0.02	0.11	0.03
Th 230	0.6	0.07	1.05	0.11	0.3	0.05	0.37	0.06	0.38	0.05	0.26	0.04
Th 228	0.15	0.03	0.24	0.04	0.12	0.03	0.22	0.04	0.15	0.03	0.13	0.03
Th 227	0.04	0.02	0.1	0.02	0.05	0.02	<LDL	<LDL	0.07	0.02	0.05	0.02
U 238	<LDL	<LDL	0.28	0.04	0.1	0.02	0.08	0.02	0.11	0.03	<LDL	<LDL
U 235	0.12	0.03	0.07	0.02	0.04	0.02	0.07	0.02	0.05	0.02	0.02	0.01
U 233/234	0.18	0.03	0.23	0.04	0.19	0.03	0.19	0.04	0.1	0.02	0.04	0.01

Samples 1-6 in pCi/g

	400306		400307		400308		400309		400310		400311	
	pCi/g	Uncertainty	pCi/g	Uncertainty	pCi/g	Uncertainty	pCi/g	Uncertainty	pCi/g	Uncertainty	pCi/g	Uncertainty
Pu 238	1.49	0.12	2.75	0.28	1.86	0.15	6.71	0.49	2.70	0.20	4.88	0.35
Pu 239/240	<LDL	<LDL	0.02	0.01	<LDL	<LDL	<LDL	<LDL	0.01	0.00	0.01	0.00
Th 232	0.04	0.01	0.05	0.01	0.02	0.01	0.03	0.01	0.04	0.01	0.05	0.01
Th 230	0.27	0.03	0.48	0.05	0.14	0.02	0.17	0.03	0.17	0.02	0.12	0.02
Th 228	0.07	0.01	0.11	0.02	0.05	0.01	0.10	0.02	0.07	0.01	0.06	0.01
Th 227	0.02	0.01	0.05	0.01	0.02	0.01	<LDL	<LDL	0.03	0.01	0.02	0.01
U 238	<LDL	<LDL	0.13	0.02	0.05	0.01	0.04	0.01	0.05	0.01	<LDL	<LDL
U 235	0.05	0.01	0.03	0.01	0.02	0.01	0.03	0.01	0.02	0.01	0.01	0.00
U 233/234	0.08	0.01	0.10	0.02	0.09	0.01	0.09	0.02	0.05	0.01	0.02	0.00

Mound Cleanup Objectives - R/SW EE/CA

	RBGV @ 10^-5	RBGV @ 10^-6
Pu 238	55	6.1
Pu 239/240	60	6
Th 232	0.7	0.07
Th 230	0.9	0.09
Th 228	1.1	0.11
Th 227		
U 238	1	0.1
U 235	0.9	0.09
U 233/234	0.9	0.09

NOTES:

1. Mound 2000 indicates acceptable risk between 10^-4 and 10^-6
2. Conversion based on 2.2 dpm/pCi

Data Analysis of Insulation Samples Reported in
RSDS# 04-TF-0013

Comparison to Cleanup Objectives

CO - Actual

(RBGV @ 10^-6)	400306		400307		400308		400309		400310		400311	
	pCi/g	Uncertainty	pCi/g	Uncertainty	pCi/g	Uncertainty	pCi/g	Uncertainty	pCi/g	Uncertainty	pCi/g	Uncertainty
Pu 238	**53.51**	**54.88**	**52.25**	**54.72**	**53.14**	**54.85**	**48.29**	**54.51**	**52.30**	**54.80**	**50.12**	**54.65**
Pu 239/240	**<LDL**	**<LDL**	**59.98**	**59.99**	**<LDL**	**<LDL**	**<LDL**	**<LDL**	**59.99**	**60.00**	**59.99**	**60.00**
Th 232	**0.66**	**0.69**	**0.65**	**0.69**	**0.68**	**0.69**	**0.67**	**0.69**	**0.66**	**0.69**	**0.65**	**0.69**
Th 230	**0.63**	**0.87**	**0.42**	**0.85**	**0.76**	**0.88**	**0.73**	**0.87**	**0.73**	**0.88**	**0.78**	**0.88**
Th 228	**1.03**	**1.09**	**0.99**	**1.08**	**1.05**	**1.09**	**1.00**	**1.08**	**1.03**	**1.09**	**1.04**	**1.09**
Th 227												
U 238	**<LDL**	**<LDL**	**0.87**	**0.98**	**0.95**	**0.99**	**0.96**	**0.99**	**0.95**	**0.99**	**<LDL**	**<LDL**
U 235	**0.85**	**0.89**	**0.87**	**0.89**	**0.88**	**0.89**	**0.87**	**0.89**	**0.88**	**0.89**	**0.89**	**0.90**
U 233/234	**0.82**	**0.89**	**0.80**	**0.88**	**0.81**	**0.89**	**0.81**	**0.88**	**0.85**	**0.89**	**0.88**	**0.90**

CO - Actual

(RBGV @ 10^-5)	400306		400307		400308		400309		400310		400311	
	pCi/g	Uncertainty	pCi/g	Uncertainty	pCi/g	Uncertainty	pCi/g	Uncertainty	pCi/g	Uncertainty	pCi/g	Uncertainty
Pu 238	**4.61**	**5.98**	**3.35**	**5.82**	**4.24**	**5.95**	**0.61**	**5.61**	**3.40**	**5.90**	**1.22**	**5.75**
Pu 239/240	**<LDL**	**<LDL**	**5.98**	**5.99**	**<LDL**	**<LDL**	**<LDL**	**<LDL**	**5.99**	**6.00**	**5.99**	**6.00**
Th 232	**0.03**	**0.06**	**0.02**	**0.06**	**0.05**	**0.06**	**0.04**	**0.06**	**0.03**	**0.06**	**0.02**	**0.06**
Th 230	**0.18**	**0.06**	**0.39**	**0.04**	**0.05**	**0.07**	**0.08**	**0.06**	**0.08**	**0.07**	**0.03**	**0.07**
Th 228	**0.04**	**0.10**	**0.00**	**0.09**	**0.06**	**0.10**	**0.01**	**0.09**	**0.04**	**0.10**	**0.05**	**0.10**
Th 227												
U 238	**<LDL**	**<LDL**	**0.03**	**0.08**	**0.05**	**0.09**	**0.06**	**0.09**	**0.05**	**0.09**	**<LDL**	**<LDL**
U 235	**0.04**	**0.08**	**0.06**	**0.08**	**0.07**	**0.08**	**0.06**	**0.08**	**0.07**	**0.08**	**0.08**	**0.09**
U 233/234	**0.01**	**0.08**	**0.01**	**0.07**	**0.00**	**0.08**	**0.00**	**0.07**	**0.04**	**0.08**	**0.07**	**0.09**

[#####] = Exceeds 10^-5 Cleanup Objective

Prepared by Christine Lee 2/3/04

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RADIOLOGICAL SURVEY DATA SHEET

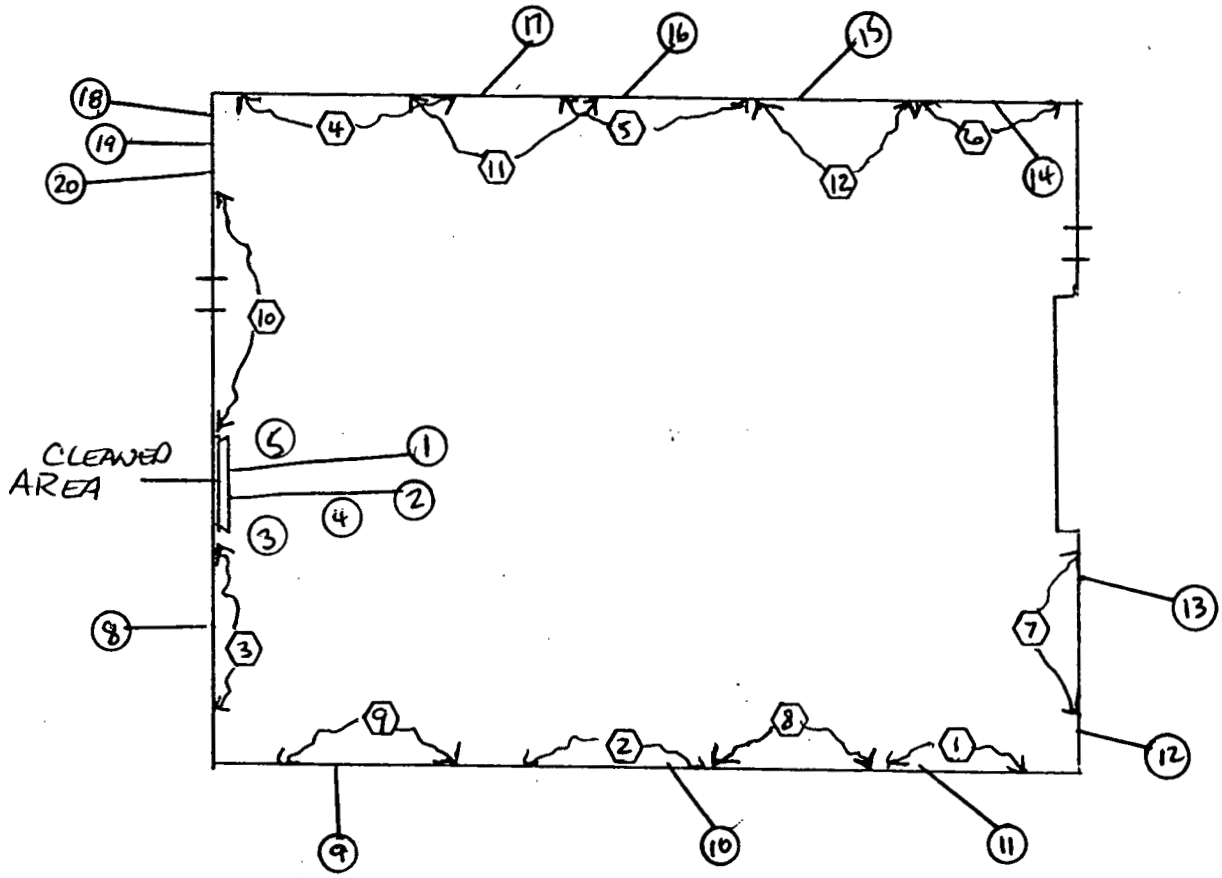
1 of 15

LOCATION: (BLDG./AREA/ROOM) 31	SURVEY NO. 04-TF-0014
PURPOSE: CHARACTERIZATION OF INTERIOR WALLS WITH WOOL INSULATION (N DPH 1-15-04)	RWP NO. N/A
	DATE: 1-14-04
	TIME: 1600

MAP/DRAWING

COPY

SAMPLES 1-6 TAKEN FROM THE 4 foot LEVEL
SAMPLES 7-12 TAKEN FROM THE 10 foot LEVEL



⬡ = SAMPLE
NOTE: COMPOSITE SAMPLE TAKEN BETWEEN ARROWS

LEGEND: # = mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
△# = mrem/hr neutron
= air sample number
(#) = swipe number
(#/α) or/β = direct cont. measurement in dpm/100cm²

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
2360	5833/5847	3-13-04
	N/A	

[redacted]	HP # 5214	Date: 1-20-04
Completed by: (Print Name [redacted]		
Counted by: (Signature)	HP #	Date:
Counted by: (Print Name) SEE ATTACHED		
Reviewed/Approved by [redacted]	HP # 7492	Date: 1-21-04
Reviewed/Approved by: (Print Nam [redacted]		

ML-8620 (2-88)

Survey No. 04-TF-0014

RADIOLOGICAL SURVEY DATA SHEET (cont.)

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
1	SEE ATTACHED		N/A	WALL
2				WALL
3				FLOOR
4				FLOOR
5				FLOOR
6				SHOVEL
7				BROOM
8				SHELF
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				BREAKER BOX
19				TRANSFORMER
20				ELECTRIC BOX
		N	A	

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	C
		N	A	

COMMENTS: SHELF - SMEARS TAKEN AT 4 FOOT LEVEL

NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout o are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

ML-9620A (4-98)

Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Aqua
Data file name: SMEAR010
Batch Ended: 1/14/04 14:35

Crosstalk correction performed.

Recalibration Date: 03/18/05
Serial Number: 26966-1

Batch ID: HARVEY 04-TF-0014 [20] JC

Detector ID	Sample ID	Alpha Activity DPM	Alpha Activity σ	Alpha Activity flags	Beta Activity DPM	Beta Activity σ	Beta Activity flags
A1	1	0.00	2.01		0.30	1.76	
A2	2	0.00	2.09		2.32	2.40	
A3	3	1.49	1.99		3.60	2.69	
A4	4	1.58	1.99		1.19	2.05	
B1	5	1.53	2.05		3.74	3.08	
B2	6	1.35	2.00		0.00	1.18	
B3	7	0.00	1.81		0.00	1.21	
B4	8	0.00	1.91		2.55	2.54	
C1	9	9.82	4.59		3.17	3.03	
C2	10	9.33	4.55		0.00	2.14	
C3	11	0.00	1.94		0.00	1.20	
C4	12	0.00	1.93		2.67	2.61	
D1	13	0.00	2.11		0.00	1.23	
D2	14	1.85	2.45		1.37	2.08	
D3	15	0.00	1.93		0.80	2.03	
D4	16	0.00	2.10		4.45	2.75	
A1	17	3.62	2.82		0.00	1.25	
A2	18	0.00	2.07		0.00	1.70	
A3	19	0.00	1.98		2.55	2.41	
A4	20	1.58	1.98		0.01	1.67	

DJH DJH

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RSDS 04-TF-0014

P3 8/15

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J. Cordova

GAMMA ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL00696
File ID: UN300003.s0
Priority Yes

Description\Location
Wool Insulation Building 31-1

Collector: 6178
Date Received: 1/14/2004
Date Collected: 1/14/2004

Radionuclide	Activity (pCi)	MDA
Pb-210		
Am-241		

Comments
ID only

Date: 1/15/200 Counted By: 5288 Analyzed By: 7559 Initials [redacted]

BSDS 04-TF [redacted]

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Ps 4 of 6

GAMMA ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL00697
File ID: UN500002.s0
Priority Yes

Description\Location
Wool Insulation Building 31-2

Collector: 6178
Date Received: 1/14/2004
Date Collected: 1/14/2004

Radionuclide	Activity (pCi)	MDA
Pb-210		
Ra-226		
Th-232		

Comments
ID only

Date: 1/15/200 Counted By: 5288 Analyzed By: 7559 Initials [redacted]

RSDS 04-TF-0014

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GAMMA ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL00698
File ID: MG102719.s0
Priority Yes

Description\Location
Wool Insulation Bldg. 31-3

Collector: 6178
Date Received: 1/14/2004
Date Collected: 1/14/2004

Radionuclide	Activity (pCi)	MDA
Pb-210		

Comments
ID only

Date: 1/15/200 Counted By: 2257 Analyzed By: 7559 Initials [redacted]

RSDS 04-TF-0014

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Pg 6.

GAMMA ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL00699
File ID: Un300004.s0
Priority: No

Description\Location
Wool Insulation Bldg. 31-4

Collector: 5214
Date Received: 1/14/04
Date Collected: 1/14/04

Radionuclide	Activity (pCi)	MDA
K-40		

Comments
ID only. Activities for the nuclides above are very low.

Date: 1/19/04 Counted By: 5288 Analyzed By: 7559 Initials [redacted]

RSDS 04-TF-0014

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PS7 86

GAMMA ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL00700
File ID: Un500003.s0
Priority: No

Description\Location
Wool Insulation Bldg. 31-5

Collector: 6178
Date Received: 1/14/04
Date Collected: 1/14/04

Radionuclide	Activity (pCi)	MDA
K-40		
Pb-210		
Ra-226		

Comments
ID only. Activities for the nuclides above are very low.

Date: 1/19/04 Counted By: 7559 Analyzed By: 7559 Initials [redacted]

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RSDS 04-TF-0014
PS 8

GAMMA ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL00701
File ID: MG301177.s0
Priority: No

Description\Location
Wool Insulation Bldg. 31-6

Collector: 5214
Date Received: 1/14/04
Date Collected: 1/14/04

Radionuclide	Activity (pCi)	MDA
K-40		

Comments
ID only. Activities for the nuclides above are very low.

Date: 1/19/04 Counted By: 5268 Analyzed By: 7559 Initials [redacted]

RSDS 04-TF-0014

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GAMMA ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL00702
File ID: MG500479.s0
Priority: No

Description\Location
Wool Insulation Bldg. 31-7

Collector: 5214
Date Received: 1/14/04
Date Collected: 1/14/04

Radionuclide	Activity (pCi)	MDA
K-40		

Comments
ID only. Activities for the nuclides above are very low.

Date: 1/19/04 Counted By: 5268 Analyzed By: 7559 Initials [redacted]

RSDS 04-TF-0014

P5/C

GAMMA ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL00703
File ID: MG102726.s0
Priority: No

Description\Location
Wool Insulation Bldg. 31-8

Collector: 5214
Date Received: 1/14/04
Date Collected: 1/14/04

Radionuclide	Activity (pCi)	MDA
K-40		
Pb-210		

Comments
ID only. Activities for the nuclides above are very low.

Date: 1/19/04 Counted By: 2257 Analyzed By: 7559 Initials [redacted]

GAMMA ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL00704
File ID: MG102727.s0
Priority: No

Description\Location
Wool Insulation Bldg. 31-9

Collector: 5214
Date Received: 1/14/04
Date Collected: 1/14/04

Radionuclide	Activity (pCi)	MDA
K-40		
Pb-210		

Comments
ID only. Activities for the nuclides above are very low.

Date: 1/19/04 Counted By: 2257 Analyzed By: 7559 Initials [redacted]

RSDS 04-TF-0014

PS/

GAMMA ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL00705
File ID: MG102728.s0
Priority: No

Description\Location
Wool Insulation Bldg. 31-10

Collector: 5214
Date Received: 1/14/04
Date Collected: 1/14/04

Radionuclide	Activity (pCi)	MDA

Comments
No activity detected.

Date: 1/19/04 Counted By: 5288 Analyzed By: 7559 Initials [redacted]

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RSDS 04-TF-0014

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GAMMA ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL00706
File ID: MG500480.s0
Priority: No

Description\Location
Wool Insulation Bldg. 31-11

Collector: 5214
Date Received: 1/14/04
Date Collected: 1/14/04

Radionuclide	Activity (pCi)	MDA
K-40		
Pb-210		
Th-234		

Comments
ID only. Activities for the nuclides above are very low.

Date: 1/19/04 Counted By: 5268 Analyzed By: 7559 Initials [redacted]

RSDS 04-TF-0014
Pg 1

GAMMA ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL00707
File ID: MG301178.s0
Priority: No

Description\Location
Wool Insulation Bldg. 31-12

Collector: 5214
Date Received: 1/14/04
Date Collected: 1/14/04

Radionuclide	Activity (pCi)	MDA
K-40		
Pb-210		

Comments
ID only. Activities for the nuclides above are very low.

Date: 1/19/04 Counted By: 5268 Analyzed By: 7559 Initials [redacted]

RSDS DH-TF-0014
PS 1556

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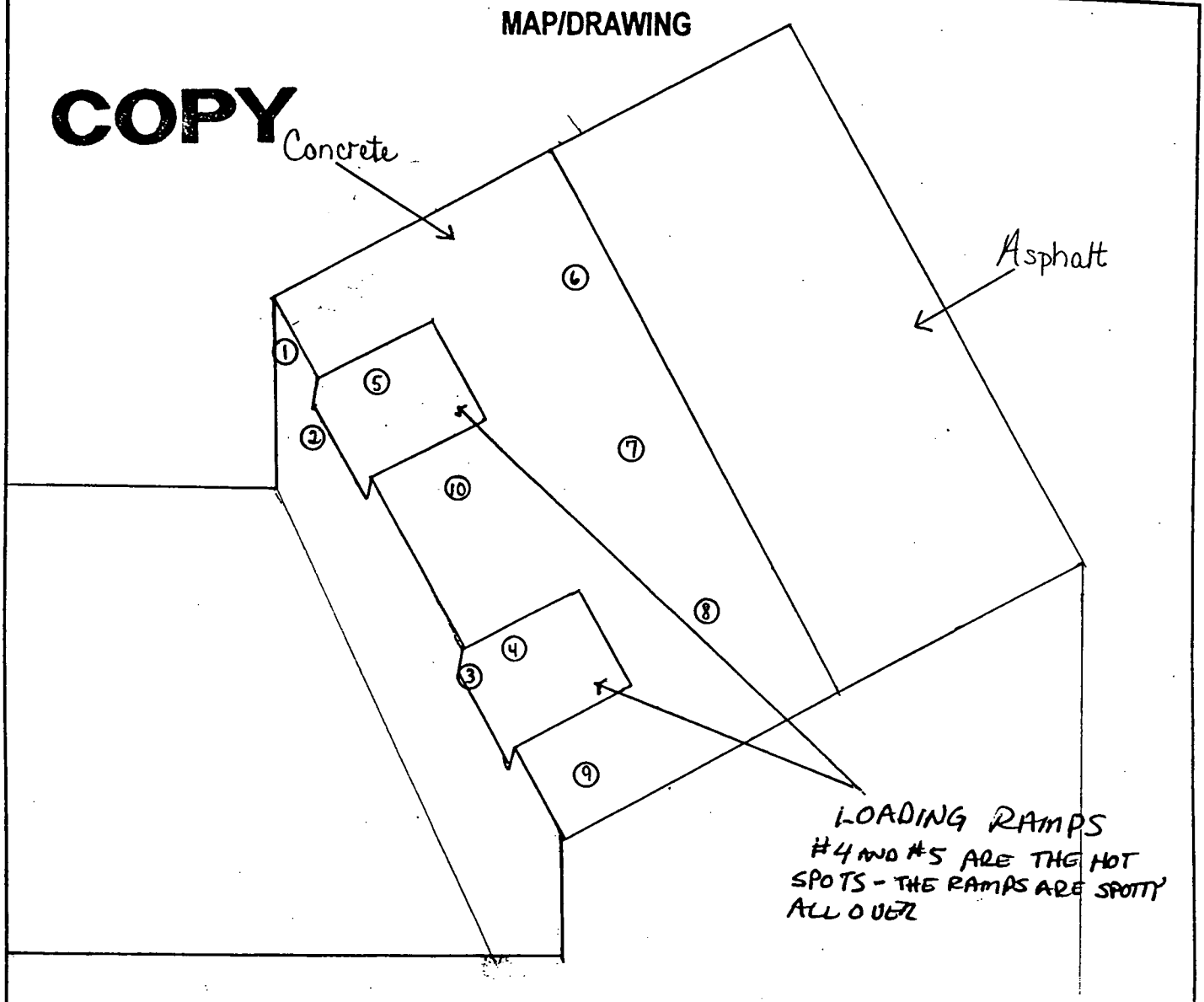
RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM) 31 - Outside dock	SURVEY NO. 04-TF-0118
PURPOSE: Characterization of dock 31	RWP NO. N/A
	DATE: 3/29/04
	TIME: 1000

MAP/DRAWING



LEGEND: # = mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
(#) = mrem/hr neutron
[#] = air sample number
(#) = swipe number
(#/α) = or/β = direct cont. measurement in dpm/100cm²

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
Ludlum 2360	5836/5848	2/5/05
Ludlum 2350	5855/5864	6/18/04
↓ ↓	N/A	
	N	
	A	

[redacted]	HP # 6178/7244	Date: 3-29-04
Counted by: (Signature) See	HP #	Date:
Counted by: (Print Name) Attached		
Reviewed/Approved by [redacted]	HP # 7492	Date: 3-30-04
Reviewed/Approved by: (Print Name) [redacted]		

ML-9620 (2-98)

Survey No. 04-TF-0118

RADIOLOGICAL SURVEY DATA SHEET

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
1-10	See Attached		N/A	dock

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments

COMMENTS: All smears field checked with 2360 before submitting to count lab.

NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If needed, mark N/A.

ML-9620A (4-98)

31-Building Characterization of Outside Loading Dock

RSDS# 04-TF-0118 RCT: DJH RCT: J.C

Alpha	43-68 BKG:	0	EFF:	0.2091	PROBE AREA:	126	cm²	Surface Eff:		0.5	Detector # : 1
Beta	43-68 BKG:	0	EFF:	0.1793	PROBE AREA:	126	cm²	Surface Eff:		0.5	Detector # : 2
Scan	43-37 BKG:	0	EFF:	0.2075	PROBE AREA:	5844	cm²	Surface Eff:		0.5	Detector # : 3
TYPE	LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2
ALPHA	SRC BKG	5855	6178	5864	1		3/29/04	7:32	16	300	24
ALPHA	SRC CHECK	5855	6178	5864	1		3/29/04	7:34	2036	60	15456
ALPHA	SRC CHECK	5855	6178	5864	1		3/29/04	7:36	2090	60	15865
ALPHA	SRC CHECK	5855	6178	5864	1		3/29/04	7:38	1891	60	14355
ALPHA	SRC CHECK	5855	6178	5864	1		3/29/04	7:39	1914	60	14529
ALPHA	DOCK 01	5855	6178	5864	1	1	3/29/04	8:46	20	120	76
ALPHA	DOCK 02	5855	6178	5864	1	2	3/29/04	8:51	26	120	99
ALPHA	DOCK 03	5855	6178	5864	1	3	3/29/04	8:56	22	120	84
ALPHA	DOCK 04	5855	6178	5864	1	4	3/29/04	9:01	64	120	243
ALPHA	DOCK 05	5855	6178	5864	1	5	3/29/04	9:17	54	120	205
ALPHA	DOCK 06	5855	6178	5864	1	6	3/29/04	9:21	25	120	95
ALPHA	DOCK 07	5855	6178	5864	1	7	3/29/04	9:25	19	120	72
ALPHA	DOCK 08	5855	6178	5864	1	8	3/29/04	9:29	15	120	57
ALPHA	DOCK 09	5855	6178	5864	1	9	3/29/04	9:33	31	120	118
ALPHA	DOCK 10	5855	6178	5864	1	10	3/29/04	9:36	27	120	102
BETA	SRC BKG	5855	6178	5864	2		3/29/04	7:46	556	300	984
BETA	SRC CHECK	5855	6178	5864	2		3/29/04	7:48	2322	60	20556
BETA	SRC CHECK	5855	6178	5864	2		3/29/04	7:49	2231	60	19751
BETA	SRC CHECK	5855	6178	5864	2		3/29/04	7:51	2157	60	19095
BETA	SRC CHECK	5855	6178	5864	2		3/29/04	7:52	2180	60	19299
BETA	DOCK 01	5855	6178	5864	2	1	3/29/04	8:48	128	60	1133
BETA	DOCK 02	5855	6178	5864	2	2	3/29/04	8:52	145	60	1284
BETA	DOCK 03	5855	6178	5864	2	3	3/29/04	8:57	98	60	868
BETA	DOCK 04	5855	6178	5864	2	4	3/29/04	9:02	139	60	1231
BETA	DOCK 05	5855	6178	5864	2	5	3/29/04	9:19	117	60	1036
BETA	DOCK 06	5855	6178	5864	2	6	3/29/04	9:22	116	60	1027
BETA	DOCK 07	5855	6178	5864	2	7	3/29/04	9:26	92	60	814
BETA	DOCK 08	5855	6178	5864	2	8	3/29/04	9:30	96	60	850
BETA	DOCK 09	5855	6178	5864	2	9	3/29/04	9:34	90	60	797
BETA	DOCK 10	5855	6178	5864	2	10	3/29/04	9:37	92	60	814

Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Aqua
Data file name: SMEAR005
Batch Ended: 3/29/04 10:55

Crosstalk correction performed.

Recalibration Date: 03/18/05
Serial Number: 26966-1

Batch ID: HARVEY 04-TF-0118 [10] JC

Detector ID	Sample ID	Alpha Activity			Beta Activity		
		DPM	σ	flags	DPM	σ	flags
A1	1	0.00	2.07		7.77	3.53	
A2	2	1.66	2.08		0.98	2.08	
A3	3	0.00	1.97		1.35	2.08	
A4	4	0.00	1.99		1.32	2.05	
B3	5	0.00	1.86		3.29	2.69	
B4	6	0.00	1.92		3.69	2.78	
C1	7	0.00	2.10		3.94	3.03	
C2	8	0.00	2.07		1.78	2.48	
C3	9	0.00	1.94		0.00	1.20	
C4	10	0.00	1.94		3.84	2.86	

DJH DJH

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DJH 3-29-04

J. Collins

RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM) 31 Dock	SURVEY NO. 04-TF-0135
PURPOSE: COLLECT ACID ETCH SAMPLES AS FOLLOW UP TO RSDS 04-TF-0118 FOR INVESTIGATION	RWP NO. N/A
	DATE: 04-15-04
	TIME: 1300

MAP/DRAWING

COPY

SMEARS LISTED ON PAGE 2

DIRECT READINGS:

PRE ETCH	ALPHA	BETA	POST ETCH	ALPHA	BETA
#9	130 dpm/100cm²	640 dpm/100cm²	#9	20 dpm/100cm²	620 dpm/100cm²
#4	270 dpm/100cm²	630 dpm/100cm²	#4	10 dpm/100cm²	325 dpm/100cm²
#10	100 dpm/100cm²	665 dpm/100cm²	#10	Ø dpm/100cm²	700 dpm/100cm²
#5	230 dpm/100cm²	655 dpm/100cm²	#5	10 dpm/100cm²	~~34 dpm/100cm²~~ 345 dpm/100cm²

LEGEND:
# = mrem/hr (γ) whole body
# E = mrem/hr (β+n+γ) extremity on contact
K= factor of 1000
- - - - - - = radiological boundary

△# = mrem/hr neutron

[#] = air sample number

(#) = swipe number

(# /α) or /β = direct contamination measurement in dpm/100cm2

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
2360	5936/5948	02-05-05
	N/A	

ML-9620

[redacted]	HP# 5214	Date: 05-03-04
Completed by: (Print [redacted]		
Counted by: (Signature)	HP#	Date:
Counted by: (Print) SEE ATTACHED		
Reviewed/Approved [redacted]	HP# 7442	Date: 5-3-04
Reviewed/Approved by: (Print) [redacted]		

RSDS# 04-TF-0135

RADIOLOGICAL SURVEY DATA SHEET (cont.)

Removable Contamination				
Swipes (dpm/100cm2)				
Sample#	β/γ	Alpha	Tritium	Comments
1				Location 9
2				Location 4
3				Location 10
4				Location 5
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
31				
32				
33				
34				
35				

See attached results

N/A

Removable Contamination				
Swipes (dpm/100cm2)				
Sample#	β/γ	Alpha	Tritium	Comments
36				
37				
38				
39				
40				
41				
42				
43				
44				
45				
46				
47				
48				
49				
50				
51				
22				
53				
54				
55				
56				
57				
58				
59				
60				
61				
62				
63				
64				
65				
66				
67				
68				
99				
70				

See attached results

N/A

COMMENTS: 2360 USED TO SCREEN SMEARS PRIOR TO SUBMITTAL TO COUNT ROOM

NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO count Room analysis for β/γ ,alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached , write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

ML-9620

Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Aqua
Data file name: SMEAR017
Batch Ended: 4/16/04 4:13

Crosstalk correction performed.

Recalibration Date: 03/18/05
Serial Number: 26966-1

Batch ID: 04-TF-0135 RILEY A/B (4) AG

Detector ID	Sample ID	Alpha Activity DPM	Alpha Activity σ	Alpha Activity flags	Beta Activity DPM	Beta Activity σ	Beta Activity flags
A1	1	0.00	2.00		0.00	1.25	
A2	2	0.00	2.06		0.00	1.20	
A3	3	1.50	1.96		0.00	1.70	
A4	4	1.58	2.03		5.92	3.14	

DR DR

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RSOS 04-TF-0135

R 365

~~Page 1 of 1~~ DR 05-03-04

Albert Rubow

Time: 2.00
Data Mode: DPM Nuclide: SMGLS02 Quench Set: SMGLS02
Background Subtract: 1st Vial

	LL	UL	LCR	2S%	BKG
Region A:	0.5 -	18.6	0	0.0	6.05
Region B:	2.0 -	18.6	0	0.0	5.32
Region C:	40.0 -	2000	0	0.0	7.53

Quench Indicator: tSIE/AEC
Ext Std Terminator: Count
RILEY 04-TF-0135 (4) AG
Coincidence Time(ns): 18
Delay Before Burst(ns): Normal
Protocol Data Filename: c:\data\PROT5.DAT
Count Data Filename: c:\data\SDATA5.DAT
Spectrum Data Drive & Path: c:\data

S#	TIME	CPMA	DPM1	2Sigma	CPMB	CPMC	tSIE	FLAG
-1	10.00	6.05		0.00	5.32	7.53	582.00	B
0	2.00	888.53	1737.58	155.85	824.10	1.47	629.32	
1	2.00	4.20	8.26	9.43	4.93	2.97	623.75	
2	2.00	0.00	0.00	0.00	0.00	0.97	518.92	
3	2.00	8.68	16.68	10.92	8.91	0.00	652.00	
4	2.00	0.44	0.94	8.44	0.91	1.47	518.54	

RSDS 04-TF-0

G 44 of 96

Albert Mahon

Pg 4/65

BWXT of Ohio, Inc.

ANALYTICAL SERVICES REQUEST FOR ANALYSIS

DATE SUBMITTED:	SAMPLE TYPE:	COLLECTED BY:	NUMBER OF SAMPLES
4-15-04	Acid Etch	L. Hopkins	4

PROJECT/FUNCTION:	PRIMARY CONTACT/PHONE NO.:	MAIL STOP:
Boss		

CHARGE NUMBER:	DATE(S) COLLECTED:	RSDS# (if applicable):	ATTACHMENTS (list):
EA554A	4-15-04	04-TF-0135	

ANALYSES REQUESTED (check):

- ☐ ^3H
- ☐ Characterize/Approve for Sanitary or Storm Discharge. Estimate of Total Volume for Release_____ Approved_____
- ☐ Gross Alpha
- ☐ Air Filter – Isotopic Analysis
- ☐ Characterization per MD-80036, Operation #10015
- ☑ Isotopic Analysis: Pu____ U____ Th____ Am____ Other____
- ☐ Other I.D. ONLY

ADDITIONAL INFORMATION:

NOTE: Attach additional information (e.g. RSDS, screening results, collection data, and gamma spec. results) if applicable

LAB IDENTIFICATION	SAMPLE LOCATION	SAMPLE NUMBER	RESULTS
0402631	B4D-31 Dock	4	Pu-238
0402632	Bldg. 31 Dock	5	Pu-238
0402633	Bldg. 31 Dock	9	Pu-238
0402634	Bldg. 31 Dock	10	Pu-238

COMMENTS:

ANALYZED BY: L. Hopkins

DATE: 4-28-04

ML-5222 (1-01)

G 45 of 96

RSDS 04-TF-01

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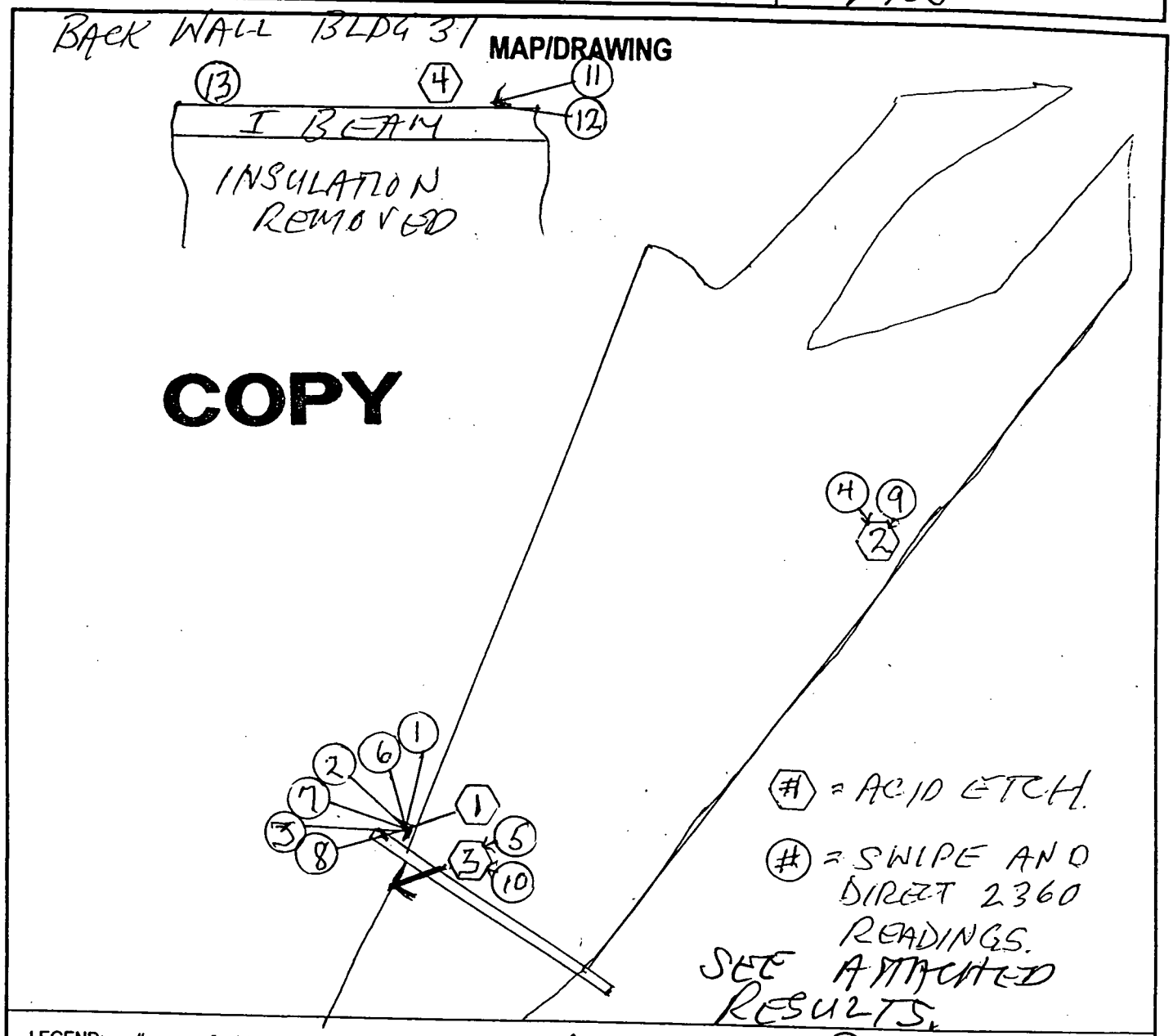
RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM) 31/MAIN AREA	SURVEY NO. 04-TF-0072
PURPOSE: ACID ETCH OF SHEAR AND I-BEAM.	RWP NO. N/A
	DATE: 3-2-04
	TIME: 1400

MAP/DRAWING



LEGEND: # = mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
= mrem/hr neutron
= air sample number
= swipe number
α/β = direct cont. measurement in dpm/100cm²

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
2360	5836/5848	2-5-05
	N/A	

[redacted]

[redacted]	HP # 5760	Date: 3-10-04
Counted by: (Signature) SEE	HP #	Date:
Counted by: (Print Name) ATTACHED		
Reviewed/Approved [redacted]	HP # 7492	Date: 3-11-04
Reviewed/Approved by: (Print Name) [redacted]		

ML-9620 (2-98)

G 47 w 9%

Survey No. 04-TF-0072

RADIOLOGICAL SURVEY DATA SHEET (cont.)

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	* Comments
1	SEE		N/A	A/E #1 PRE
2	ATTACHED			
3				
4				A/E 2 PRE
5				A/E 3 PRE
6				A/E 1 POST
7				
8				
9				A/E 2 POST
10				A/E 3 POST
11				A/E 4 PRE
12				A/E 4 POST
13				BEAM
		N/A		

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
			N/A	

COMMENTS: SWIPES SCREENED WITH 2360 BEFORE SENDING TO COUNT ROOM. *A/E = ACID ETCH

NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If needed, mark N/A.

ML-9620A (4-98)

Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Aqua
Data file name: SMEAR016
Batch Ended: 3/2/04 13:16

Crosstalk correction performed.

Recalibration Date: 03/18/05
Serial Number: 26966-1

Batch ID: REYNOLDS 04-TF-0072 [13] JC

Detector ID	Sample ID	Alpha Activity DPM	Alpha Activity σ	Alpha Activity flags	Beta Activity DPM	Beta Activity σ	Beta Activity flags
A1	1	3.61	2.86		4.99	3.06	
A2	2	0.00	2.08		1.12	2.08	
A3	3	0.00	2.00		4.95	2.95	
A4	4	1.57	2.04		7.10	3.36	
B1	5	1.53	2.00		0.00	2.02	
B2	6	0.00	2.02		1.46	2.03	
B3	7	1.54	1.82		0.00	1.21	
B4	8	0.00	1.90		1.42	2.27	
C1	9	0.00	2.06		0.00	1.75	
C2	10	1.25	2.05		0.00	1.75	
C3	11	0.00	1.96		1.16	2.07	
C4	12	0.00	1.92		1.51	2.33	
D1	13	0.00	2.11		0.00	1.23	

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3-9-04

J. Collins

31-Bldg Shear and I-Beam Acid Etch

RSDS#04-TF-0072 RCT: [illegible] RCT: N/A

						BETA			ALPHA		
LOCATION	2360	RCT ID	PROBE	ITEM #	DATE	gross count	CT TIME	dpm/100cm2	gross count	CT TIME	dpm/100cm2
A/E #1 Pre	5836	5760	5848	1	3/2/04	79	60	-15	42	60	420
A/E #1 Pre	5836	5760	5848	2	3/2/04	88	60	30	60	60	600
A/E #1 Pre	5836	5760	5848	3	3/2/04	82	60	0	44	60	440
A/E #2 Pre	5836	5760	5848	4	3/2/04	101	60	95	34	60	340
A/E #3 Pre	5836	5760	5848	5	3/2/04	92	60	50	38	60	380
A/E #1 Post	5836	5760	5848	6	3/2/04	87	60	25	5	60	50
A/E #1 Post	5836	5760	5848	7	3/2/04	102	60	100	3	60	30
A/E #1 Post	5836	5760	5848	8	3/2/04	83	60	5	5	60	50
A/E #2 Post	5836	5760	5848	9	3/2/04	96	60	70	23	60	230
A/E #3 Post	5836	5760	5848	10	3/2/04	77	60	-25	26	60	260
A/E #4 Pre	5836	5760	5848	11	3/2/04	81	60	-5	37	60	370
A/E #4 Post	5836	5760	5848	12	3/2/04	88	60	30	18	60	180
I-Beam Left	5836	5760	5848	13	3/2/04	79	60	-15	6	60	60
BETA BACKGROUND FOR 3-2-2004 WAS---------->								82			
ALPHA BACKGROUND FOR 3-2-2004 WAS---------->								0.0			

96 AV VS 2

BWXT of Ohio, Inc.

ANALYTICAL SERVICES REQUEST FOR ANALYSIS

DATE SUBMITTED:	SAMPLE TYPE:	COLLECTED BY:	NUMBER OF SAMPLES
3-2-04	Acid Etch	Hopkins	4
PROJECT/FUNCTION:	**PRIMARY CONTACT/PHONE NO.:**		**MAIL STOP:**
BOSS	D. Harvey		
CHARGE NUMBER:	**DATE(S) COLLECTED:**	**RSDS# (if applicable):**	**ATTACHMENTS (list):**
EA554A	3-2-04	NA	

ANALYSES REQUESTED (check):

- ☐ ^3H
- ☐ Characterize/Approve for Sanitary or Storm Discharge. Estimate of Total Volume for Release_____ Approved_____
- ☐ Gross Alpha
- ☐ Air Filter – Isotopic Analysis
- ☐ Characterization per MD-80036, Operation #10015
- ☑ Isotopic Analysis: Pu____ U____ Th____ Am____ Other____
- ☐ Other _____

ADDITIONAL INFORMATION:

NOTE: Attach additional information (e.g. RSDS, screening results, collection data, and gamma spec. results) if applicable

LAB IDENTIFICATION	SAMPLE LOCATION	SAMPLE NUMBER	RESULTS
0401309	Bldg. 31 shear	1	
0401310		2	
0401311		3	
0401312	I-Beam	4	
			N/A

COMMENTS:

ANALYZED BY:	DATE:
L. C. Hopkins	3-10-04

ML-5222 (1-01)

04-TF-0072

Laboratory ID#: 0401309 - 0401312
Project/function: BOSS
Submitted: Mar 2, 2004
Submitted by: D. Harvey
Point of Contact: D. Harvey x3320
RSDS#: N/A
Date: Mar 10, 2004

Lab ID 0401309
Sample Location Bldg. 31 Shear #1

Isotope	dpm/sample	Uncertainty +/-	LDL
Pu-238	26.04	3.23	0.89
Pu-239/240	<LDL	<LDL	0.51
Th-232	0.68	0.40	0.62
Th-230	1.37	0.58	0.62
Th-228	<LDL	<LDL	1.43
Th-227	<LDL	<LDL	1.09
U-238	0.74	0.34	0.40
U-235	<LDL	<LDL	0.40
U-233/234	0.45	0.26	0.40

Lab ID 0401310
Sample Location Bldg. 31 Shear #2

Isotope	dpm/sample	Uncertainty +/-	LDL
Pu-238	40.81	4.89	1.04
Pu-239/240	<LDL	<LDL	1.04
Th-232	0.59	0.35	0.53
Th-230	0.98	0.45	0.53
Th-228	<LDL	<LDL	1.61
Th-227	<LDL	<LDL	0.94
U-238	<LDL	<LDL	0.81
U-235	<LDL	<LDL	0.95
U-233/234	<LDL	<LDL	0.81

Lab ID 0401311
Sample Location Bldg. 31 Shear #3

Isotope	dpm/sample	Uncertainty +/-	LDL
Pu-238	<LDL	<LDL	1.28
Pu-239/240	0.69	0.41	0.63
Th-232	<LDL	<LDL	0.51
Th-230	<LDL	<LDL	0.51
Th-228	<LDL	<LDL	1.06
Th-227	<LDL	<LDL	1.18
U-238	<LDL	<LDL	0.95
U-235	<LDL	<LDL	0.95
U-233/234	<LDL	<LDL	0.54

04-TF0072

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3-10-04

Lab ID	0401312
Sample Location	I Beam #4

Isotope	dpm/sample	Uncertainty +/-	LDL
Pu-238	1148.75	139.33	1.22
Pu-239/240	16.12	3.33	2.12
Th-232	2.21	0.68	0.50
Th-230	0.74	0.38	0.50
Th-228	<LDL	<LDL	1.04
Th-227	<LDL	<LDL	1.04
U-238	<LDL	<LDL	0.95
U-235	<LDL	<LDL	0.95
U-233/234	<LDL	<LDL	0.95

[redacted]

1585 — HP#
3-10-04 — Date

7783 — HP#
3/10/4 — Date

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RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM) 3/A	SURVEY NO. 03-TF-313
PURPOSE: SCOPING SURVEY OF WALLS IN BLDG 3/A.	RWP NO. N/A
	DATE: 11/19/03
	TIME: 1600

MAP/DRAWING

SEE ATTACHED DRAWING

PERFORMED 100% WALL SCANS TO HEIGHT OF 6' IN ALL SECTIONS HIGHLIGHTED ON ATTACHED DRAWING. NO READINGS DETECTED.

COPY

LEGEND: # = mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
△# = mrem/hr neutron
[#] = air sample number
(#) = swipe number
(#/α) or/β = direct cont. measurement in dpm/100cm²

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
2350/43-68	5855/5864	6-18-04
2350/43-68	5857/5859	9-9-04

[redacted] HP # 5760 Date: 12-29-03

Counted by: (Signature) N/A HP # Date:

Counted by: (Print Name)

[redacted] HP # 6178 Date: 12-29-03

Reviewed/ [redacted]

ML-9620 (2-98)

Survey No. 03-TF-0313

RADIOLOGICAL SURVEY DATA SHEET (cont.)

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
		N/A		

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comment
		N/A		

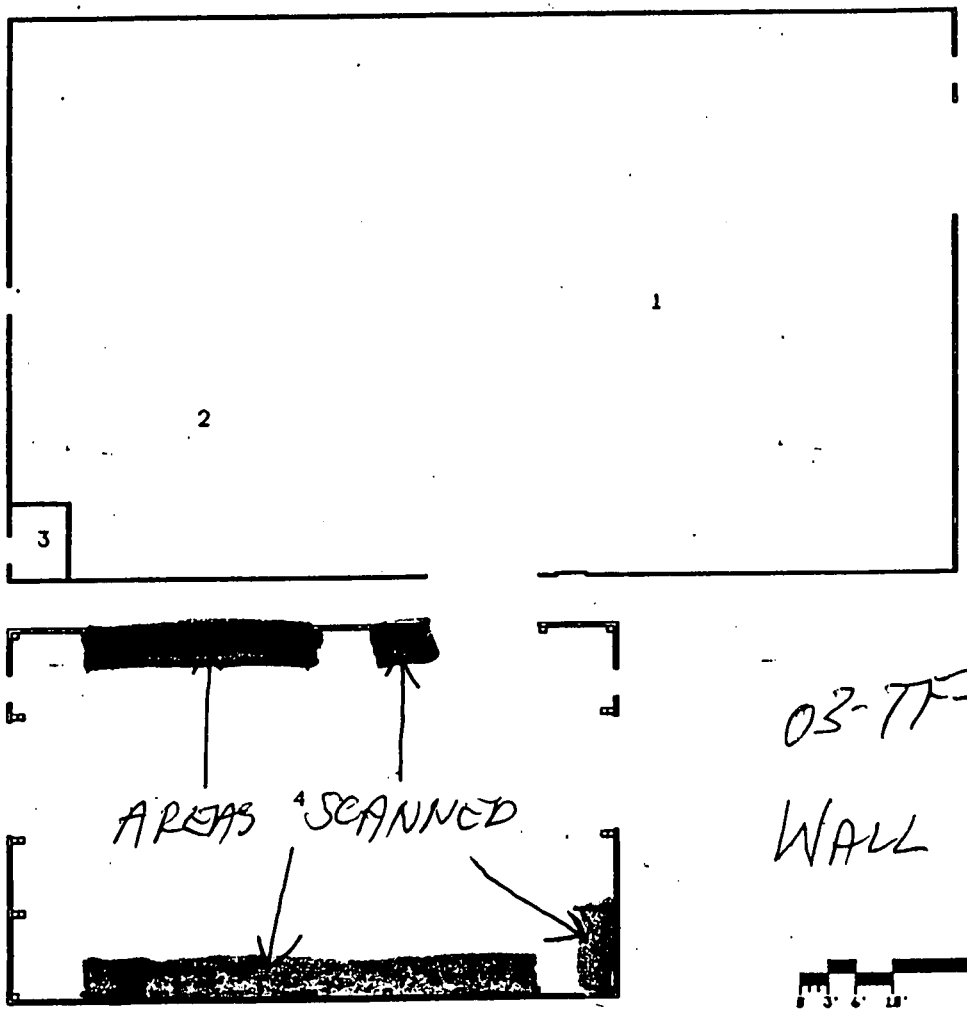
COMMENTS: N/A

NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

ML-9620A (4-98)

REV	DATE	REVISION	BY	CHKD	ENG	LPNED	APVD	N
B	12/12/91	ASBUILT ISSUE	DCB				DVD	

BLDG. 31-31A
OFFICE MODULE



UNCLASSIFIED & NON-SENSITIVE
Reviewed by Mound Declassification Office. Reviewer Initials ADM.

03-TF-0313
WALL SCANS

8' 3' 6' 18' 28'

BLDG #31
FIRST FLOOR
BLDG CODE:3031

APPROVALS: DATE:
SAFETY CONSTRAINTS REQUIRED:
___NONE ___RADIOLOGIC ___TOXIC ___CHEMICAL
TECH. REP.
SR. MGR.
RADIOLOGIC
TOXIC
CHEMICAL

PG 3 OF 6

SHEET	1	2	3	4	5	6	TITLE (U) TITLE CLASSIFICATION
TOTAL	8						BLDG #31 FLOOR PLANS
DRAWING CLASSIFICATION: UNCLASSIFIED							SIZE C · DRAWING NUMBER FSC911243 · JOB NUMBER 12333
DRAWN BY SFP · MODEL BLDG #31 · CODE 14865 · SCALE NONE · SHEET 1 OF 1							
STATUS NO-REL.-12/12/91 · GRIDS NO-BR3-V3.3							

DESIGN CHK · PROJ MGR · SPCLT · CHK SUPV · LP & QC · PROJ RDY · CHK MGR · APVD · DATE

31a-Building Characterization Survey Wall Scan

RSDS# 03-TF-0313 RCT: [illegible] RCT: _____

Alpha	43-68 BKG:	0	EFF:	0.2091	PROBE AREA:	126	cm^2	Surface Eff:		0.5	Detector # :
Beta	43-68 BKG:	0	EFF:	0.1793	PROBE AREA:	126	cm^2	Surface Eff:		0.5	Detector # :
Scan	43-37 BKG:	0	EFF:	0.2075	PROBE AREA:	584	cm^2	Surface Eff:		0.5	Detector # :
TYPE	LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100c
ALPHA	SRC BKG	5855	7474	5864	1		11/19/03	7:42	38	300	58
ALPHA	SRCCHECK	5855	7474	5864	1		11/19/03	7:58	1890	60	14347
ALPHA	SRCCHECK	5855	7474	5864	1		11/19/03	7:59	2017	60	15311
ALPHA	SRCCHECK	5855	7474	5864	1		11/19/03	8:01	2164	60	16427
ALPHA	SRCCHECK	5855	7474	5864	1		11/19/03	8:03	2029	60	15402

[illegible]

Building 31A Characterization Survey Wall Scans

RSDS# 03-TF-0313 *RCT:* [illegible] *RCT:* _____

Alpha	**43-68 BKG:**	**0**	**EFF:**	**0.2297**	**PROBE AREA:**	**126**	**cm^2**	**Surface Eff:**		**0.5**	**Detector # :** **1**
Beta	**43-68 BKG:**	**0**	**EFF:**	***0.1863***	**PROBE AREA:**	**126**	**cm^2**	**Surface Eff:**		**0.5**	**Detector # :** **2**
Scan	**43-37 BKG:**	**0**	**EFF:**	**0.1948**	**PROBE AREA:**	**584**	**cm^2**	**Surface Eff:**		**0.5**	**Detector # :** **3**
TYPE	**LOCATION**	**2350#**	**RCT ID**	**PROBE**	**DET #**	**ITEM #**	**DATE**	**TIME**	**CNTS**	**CT TIME**	**dpm/100cm2**
ALPHA	SRC BKG	5857	5760	5859	1		11/19/03	8:01	6	300	8
ALPHA	SRCCHECK	5857	5760	5859	1		11/19/03	8:07	2005	60	13855
ALPHA	SRCCHECK	5857	5760	5859	1		11/19/03	8:09	2047	60	14145
ALPHA	SRCCHECK	5857	5760	5859	1		11/19/03	8:11	2099	60	14505
ALPHA	SRCCHECK	5857	5760	5859	1		11/19/03	8:14	1981	60	13689

31A Building Characterization Survey Wall Scans

RSDS# 03-TF-0313 RCT: RCT:

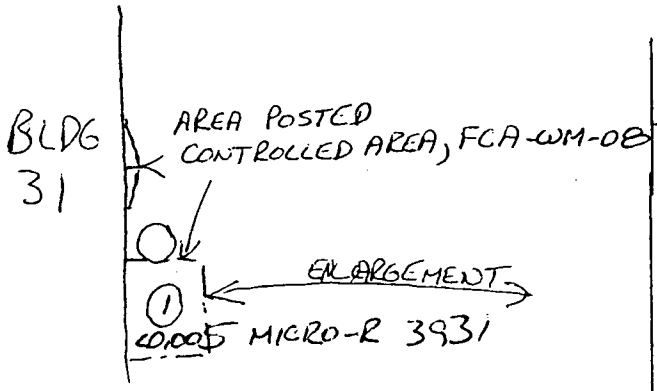
Alpha	43-68 BKG:	0	EFF:	0.2297	PROBE AREA:	126	cm^2	Surface Eff:		0.5	Detector #
Beta	43-68 BKG:	0	EFF:	0.1863	PROBE AREA:	126	cm^2	Surface Eff:		0.5	Detector #
Scan	43-37 BKG:	0	EFF:	0.1948	PROBE AREA:	584	cm^2	Surface Eff:		0.5	Detector #
TYPE	LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100
ALPHA	SRC BKG	5857	5760	5859	1		11/20/03	8:08	6	300	8
ALPHA	SRCCHECK	5857	5760	5859	1		11/20/03	8:11	1997	60	1380
ALPHA	SRCCHECK	5857	5760	5859	1		11/20/03	8:12	2020	60	1395
ALPHA	SRCCHECK	5857	5760	5859	1		11/20/03	8:15	1963	60	1356
ALPHA	SRCCHECK	5857	5760	5859	1		11/20/03	8:16	1973	60	1363

RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG. / ROOM / AREA) 31 / EAST PAD	SURVEY NO. 03-WM-0636
PURPOSE: DOWN POST RMA - POST FCA-WM-08	RWP NO. N/A
COPY	DATE: 6-24-03
	TIME: 1430

MAP / DRAWING

1) SEE RSDS 03-WM-0584 FOR DOWNPOSTING MAJORITY OF AREA FROM CONTROLLED AREA, RMA.
2) SEE RSDS 03-WM-0608 FOR ADDITIONAL INFORMATION REGARDING POSTINGS.
3) INSTRUMENT PROBE DAMAGED AT END OF SURVEY.



N/D ~~N/A~~ 6-24-03	N/A	N/A	N/A	
N/D	A	D	G	N/D
N/D	B	E	H	N/D
N/D	C	F	I	N/D
N/D				N/D

4) AVERAGE CONTAMINATION LEVEL WAS DETERMINED BY TAKE THE HIGHEST READING IN EACH OF THE NINE GRIDDED AREAS AND AVERAGING THEM TO ARRIVE AT 97.7 DPM/100cm² ALPHA, THIS RESULT IS BELOW 100 BY SUCH A SMALL MARGIN THAT THE AREA WAS POSTED AS FCA-WM-08. AS A MEASURE OF PRUDENCE.

N/A = NOT ACCESSIBLE.
N/D = NONE DETECTED (ie <DL).

LEGEND:
= mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
K = factor of 1000
— · — · — = radiological boundary
△# = mrem/hr neutron
= air sample number
(#) = swipe number
(#/α) or /β = direct contamination measurement in dpm/100 cm²

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
2360	5706/5716	8-22-03
		A
N		

Completed by: (Si[redacted]	HP# 6184	Date: 6-25-03
Counted by: (Signature) SEE ATTACHED	HP#	Date:
Counted by: (Print Name) [redacted]re)	HP# 7260	Date: 6-25-03
[redacted]me)		

Survey No.
03 WM 0636

RADIOLOGICAL SURVEY DATA SHEET (cont.)

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
1	SEE	ATTACHED		ASPHALT
				A

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
				A

COMMENTS: SWIPE EVALUATED <1K α & β.

NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If needed, mark N/A.

RADIOLOGICAL SURVEY DATA SHEET
MAP/DRAWING Continuation Page

Survey No.
03 WM 0636

MAP/DRAWING
Stationary Integrated Measurement Data
Background - 4.2 cpm α, 176 cpm β
DL - 3.0 cpm α, 20 cpm β
Correction Factor - 8 α, 4 β
Count Time - 2 min.

Location	Gross Counts		Gross cpm		Net cpm		Result dpm/100 cm²	
	Alpha	Beta	Alpha	Beta	Alpha	Beta	Alpha	Beta
A	20	410	10	205	5.8	29	46.4	116
B	24	424	12	212	7.8	36	62.4	144
C	19	395	9.5	197.5	5.3	21.5	42.4	86
D	38	410	19	205	14.8	29	118.4	116
E	44	472	22	236	17.8	60	142.4	240
F	49	473	24.5	236.5	20.3	60.5	162.4	242
G	<DL	<DL	→				<DL(24)	<DL(80)
H	44	443	22	221.5	17.8	45.5	142.4	182
I	43	402	21.5	201	17.3	25	138.4	100

LEGEND:
= mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
△# = mrem/hr neutron
(#) = swipe number
[#] = air sample number
(#/α) or /β = direct cont. measurement in dpm/100cm²

ML-9620B (2-98)

Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Red
Data file name: SMEAR011
Batch Ended: 6/24/03 15:02

Crosstalk correction performed.

Batch ID: BIRCH 03-WM-0636 (1) CYR

Recalibration Date: 4/2/05
Serial Number: 26966-2

Detector ID	Sample ID	Alpha Activity			Beta Activity		
		DPM	σ	flags	DPM	σ	flags
A1	1	1.7	2.1		1.8	2.3	

Carol G. Robinson

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Protocol #: 6 Name:Pw-H3 #401387 24-Jun-2003 15:50
Region A: LL-UL= 0.5-18.6 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region B: LL-UL= 2.0-18.6 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region C: LL-UL=40.0-2000 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Time = 2.00 QIP = tSIE/AEC ES Terminator = Count
BIRCH 03-WM-0636 (G1) CYR
Conventional DPM
Nuclide 1 = 208074
Luminescence Correction On
Data/Application Drive & Path = c:\data

SAMP	TIME	CPMA	CPMB	CPMC	FLAG	LUM	tSIE	DPM1	A:2S%
-1	10.00	6.13	6.03	5.50	B	5	658.		25.54
0	2.00	752.04	717.69	0.00		0	517.	1531.29	5.20
1	2.00	25.24	24.30	0.00		6	522.	51.13	34.02

Carol G. Robinson

Pg. 5 of 5

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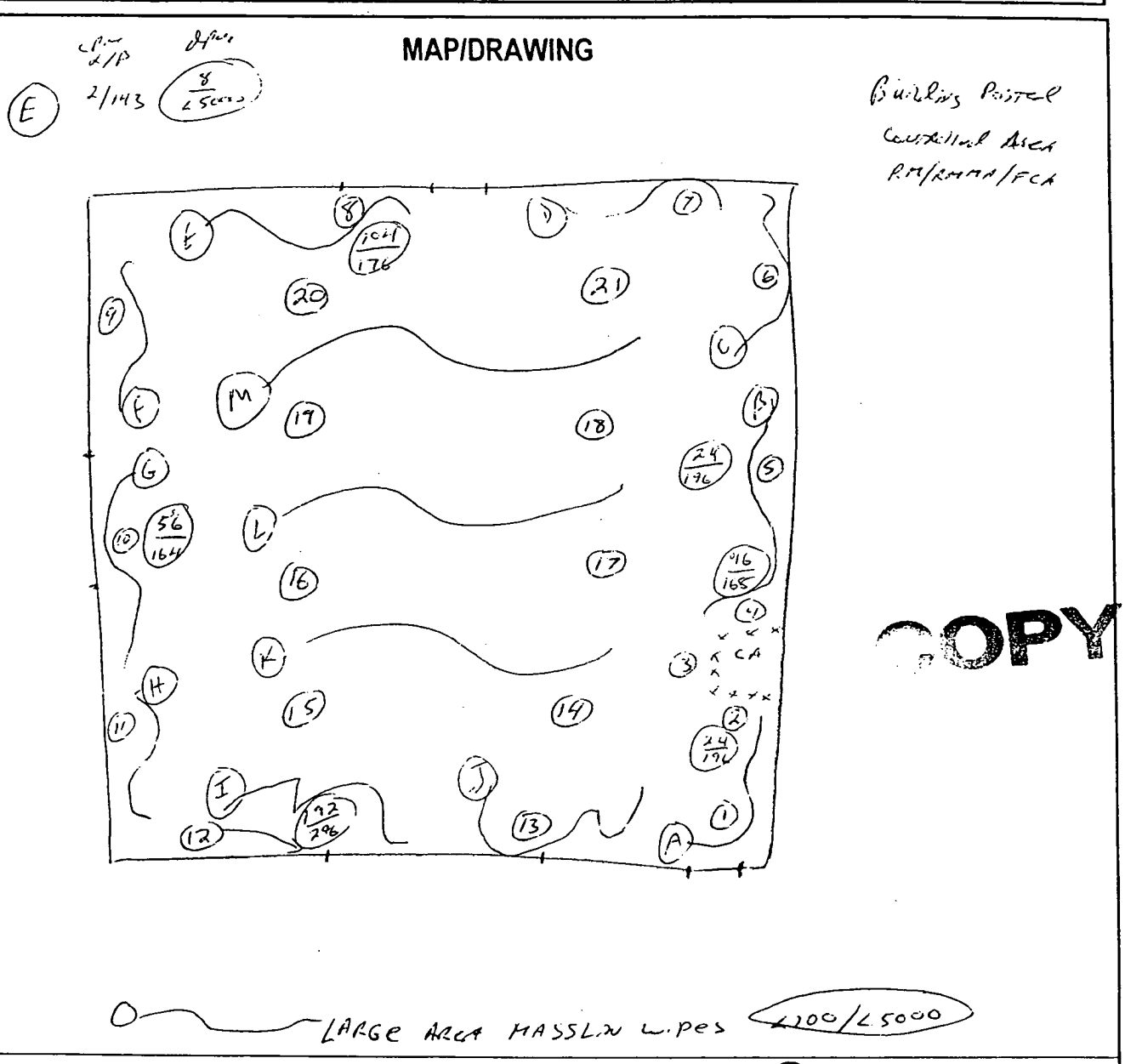
1 of 5 6-10-03

RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM) 31	SURVEY NO. 03-W.H.-0589
PURPOSE: Weekly FCA Survey (CA Boundary)	RWP NO. N/A
	DATE: 6-9-03
	TIME: 1700

MAP/DRAWING



COPY

LEGEND: # = mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
△# = mrem/hr neutron
[#] = air sample number
(#) = swipe number
(#/α) or/β = direct cont. measurement in dpm/100cm²

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
2360	5711/5721	2-19-04

[redacted]	HP # 7788	Date: 6-10-03
Completed by: (Print Name) [redacted]		
Counted by: (Signature) See	HP #	Date:
Counted by: (Print Name) ATTACHED		
Reviewed/Approved by: (Signature) [redacted]	HP # 7725	Date: 6-10-03
Reviewed/Approved by: (Print Name) [redacted]		

ML-9620 (2-98)

Survey No.
03-wm-0587

Page 2 of 5

RADIOLOGICAL SURVEY DATA SHEET (cont.)

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
1				Floor
2				CA Boundary
3				↓
4				↓
5				Floor
6	See Attached			↓
7				↓
8				↓
9				↓
10				↓
11				↓
12				↓
13				↓
14				↓
15				↓
16				↓
17				↓
18				↓
19				↓
20				↓
21				↓
N/A				

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
N/A				

COMMENTS:

NOTES:

1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of re are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

ML-9620A (4-98)

RADIOLOGICAL SURVEY DATA SHEET
MAP/DRAWING Continuation Page

Survey No. 03-WM-0589

MAP/DRAWING
Stationary Integrated Measurement Data
Background - 1.0 cpm α, 141 cpm β
DL - 1.4 cpm α, 30 cpm β
Correction Factor - 8 α, 4 β
Count Time - 1 min.

Location	Gross Counts		Gross cpm		Net cpm		Result dpm/100 cm²	
	Alpha	Beta	Alpha	Beta	Alpha	Beta	Alpha	Beta
2			4	190	3	49	24	196
4			13	183	12	42	96	168
5		A	4	190	3	49	24	196
8	N		14	185	13	44	104	176
10			8	182	7	41	56	164
12			25	215	24	74	192	296
				A				
			N					

All other directs <100 / <5000

LEGEND: # = mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
△ // = mrem/hr neutron
○ # = swipe number
□ # = air sample number
○ #/α or /β = direct cont. measurement in dpm/100cm²

ML-9620B (2-98)

Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Red
Data file name: SMEAR011
Batch Ended: 6/9/03 15:58

Crosstalk correction performed.

Batch ID: DOLEZAL 03-WM-0589 (21) CYR

Recalibration Date: 4/2/05
Serial Number: 26966-2

Detector ID	Sample ID	Alpha Activity			Beta Activity		
		DPM	σ	flags	DPM	σ	flags
A1	1	0.0	2.1		0.0	1.3	
A2	2	0.0	2.2		2.1	2.3	
A3	3	0.7	2.0		0.0	1.2	
A4	4	0.0	1.9		0.0	1.2	
B1	5	0.0	2.0		1.8	2.6	
B2	6	0.0	2.1		0.8	1.9	
B3	7	0.0	2.0		1.2	1.7	
B4	8	0.0	1.9		0.0	1.6	
C1	9	0.0	2.0		4.8	2.9	
C2	10	0.0	2.0		0.0	1.3	
C3	11	0.0	1.9		0.5	1.6	
C4	12	1.6	1.9		0.0	1.2	
D1	13	0.0	2.3		0.7	1.9	
D2	14	0.0	2.1		0.0	1.3	
D3	15	0.0	2.0		0.0	1.2	
D4	16	0.0	2.0		1.5	2.1	
A1	17	1.7	2.1		1.8	2.3	
A2	18	1.7	2.2		0.0	1.3	
A3	19	0.0	2.0		0.8	1.7	
A4	20	0.0	2.0		2.5	2.4	
B1	21	0.0	1.9		0.5	2.3	

Carol L. Robinson

Protocol #: 1 Name:PW H3 #87267 09-Jun-2003 23:40
Region A: LL-UL= 0.5-18.6 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region B: LL-UL= 2.0-18.6 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region C: LL-UL=40.0-2000 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Time = 2.00 QIR = tSIE/AEC ES Terminator = Count
DOLEZAL 03-WM-0589 (U1-U21) CYR
Conventional ~~DPM~~
Nuclide 1 = 208682
Luminescence Correction On

S#	TIME	LUM	FLAG	CPMA	CPMB	CPMC	tSIE	DPM1	2Sigma
-1	10.00	3	B	13.00	9.90	6.00	610.		0.00
0	2.00	0		951.00	889.60	2.00	560.	1970.23	175.15
1	2.00	0		0.00	0.00	0.00	547.	0.00	0.00
2	2.00	0		0.00	0.00	0.00	571.	0.00	0.00
3	2.00	0		0.00	0.00	0.50	446.	0.00	0.00
4	2.00	0		0.00	0.00	1.00	389.	0.00	0.00
5	2.00	0		0.00	0.00	0.50	524.	0.00	0.00
6	2.00	0		0.00	0.00	0.00	453.	0.00	0.00
7	2.00	0		0.00	0.00	1.00	398.	0.00	0.00
8	2.00	30		0.00	0.00	0.00	328.	0.00	0.00
9	2.00	0		0.00	0.00	0.00	508.	0.00	0.00
10	2.00	0		0.00	0.00	0.50	451.	0.00	0.00
11	2.00	0		0.00	0.00	3.00	540.	0.00	0.00
12	2.00	22		0.00	0.00	0.00	488.	0.00	0.00
13	2.00	0		0.00	0.00	0.00	419.	0.00	0.00
14	2.00	0		0.00	0.00	0.00	371.	0.00	0.00
15	2.00	0		0.00	0.00	0.00	500.	0.00	0.00
16	2.00	27		0.00	0.00	1.00	439.	0.00	0.00
17	2.00	0		0.00	0.00	0.00	425.	0.00	0.00
18	2.00	0		0.00	0.00	0.00	347.	0.00	0.00
19	2.00	0		0.00	0.00	0.00	357.	0.00	0.00
20	2.00	0		0.00	0.00	0.00	394.	0.00	0.00
21	2.00	0		0.00	0.00	0.00	468.	0.00	0.00

Carol G. Robinson

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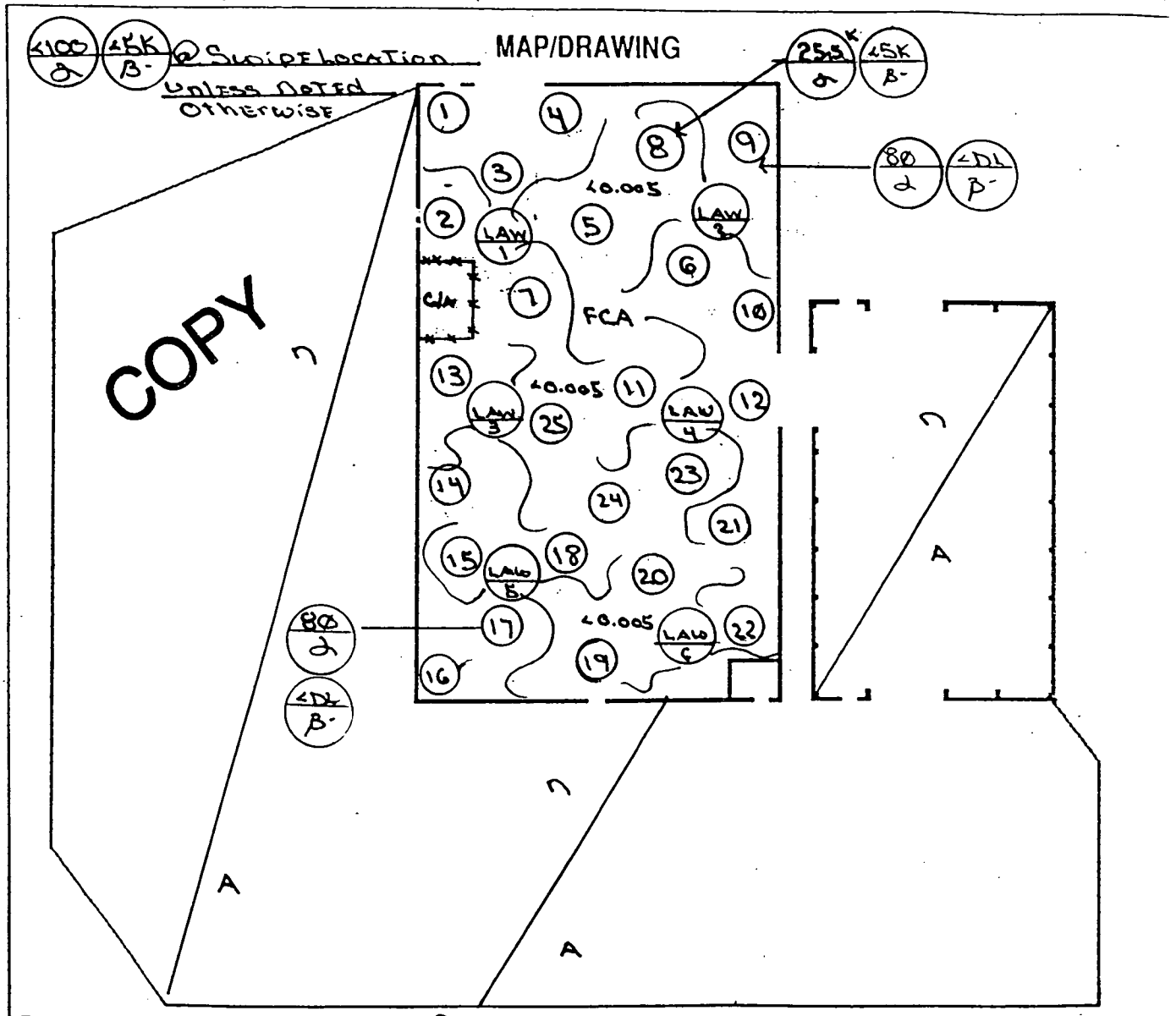
RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG/AREA/ROOM) 31 / FCA / RMA	SURVEY NO. Ø3WM-Ø574
PURPOSE: Weekly/Monthly Routine	RWP NO. N/A
	DATE: 6.3.Ø3
	TIME: 1513

MAP/DRAWING



BKGD: 2 cpm α CPM β- 220 DL: 1.8 cpm α 20 cpm β- 2 min CT

LEGEND: # = mrem/hr (γ) whole body
E = mrem/hr (β+η+γ) extremity on contact
(#) = mrem/hr neutron
[#] = air sample number
(#) = swipe number
(#/α) or /β = direct cont. measurement in dpm/100cm²

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
Ludl-2360	5767/5798	8.20.03
Bicron	3931	9.27.03

[redacted]

ML-9620 (2-98)

RADIOLOGICAL SURVEY DATA SHEET (cont.)

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
1	S	e	e	Floor
2	Attached			I Beam
3	Sheets		S	Floor
4				Wall
5				Floor
6				
7				
8				
9				
10				Wall
11				Floor
12				
13				
14				
15				
16				Wall
17				Floor
18				
19				
20				
21				
22				Wall
23				Floor
24				
25				

N/A

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments

N/A

COMMENTS: N/A

NOTES:

1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of re are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

ML-9620 (4-98)

RADIOLOGICAL SURVEY DATA SHEET
MAP/DRAWING Continuation Page

Survey No. Ø34ØM-Ø514

MAP/DRAWING
Stationary Integrated Measurement Data

Background - 2 cpm α, 22Ø cpm β
DL - 1.8 cpm α, 2Ø cpm β
Correction Factor - 8 α, 4 β
Count Time - 2 min.

Location	Gross Counts		Gross cpm		Net cpm		Result dpm/100 cm²	
	Alpha	Beta	Alpha	Beta	Alpha	Beta	Alpha	Beta
LAW #1	13	32Ø	6.5	16Ø	4.5	<BKGD	36	<DL
LAW #2	17	41Ø	8.5	2Ø5	6.5	<BKGD	52	<DL
LAW 3	<DL	35Ø	<DL	175	<DL	<BKGD	<DL	<DL
LAW 4	2Ø	46Ø	1Ø	23Ø	8	1Ø	64	4Ø
LAW 5	1Ø	375	5	188	3	<BKGD	24	<DL
LAW 6	14	39Ø	7	195	5	<BKGD	4Ø	<DL

LEGEND:
= mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
△# = mrem/hr neutron
(#) = swipe number
[#] = air sample number
(#/α) or /β = direct cont. measurement in dpm/100cm²

ML-9620B (2-98)

Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Red
Data file name: SMEAR033
Batch Ended: 6/3/03 13:11

Crosstalk correction performed.

Recalibration Date: 4/2/05
Serial Number: 26966-2

Batch ID: BIRCH 03-WM-0574 A/B (25) AG

Detector ID	Sample ID	Alpha Activity			Beta Activity		
		DPM	σ	flags	DPM	σ	flags
A1	1	0.0	2.1		0.7	1.8	
A2	2	0.0	2.2		0.0	1.3	
A3	3	0.0	2.0		0.8	1.7	
A4	4	0.0	1.9		0.0	1.2	
B1	5	0.0	1.9		0.0	1.9	
B2	6	0.0	2.1		0.8	1.9	
B3	7	0.0	2.1		4.8	2.7	
B4	8	0.0	2.0		0.8	2.0	
C1	9	1.6	1.9		0.0	1.2	
C2	10	0.0	2.0		0.0	1.3	
C3	11	0.0	1.9		1.6	2.0	
C4	12	0.0	1.9		1.7	2.0	
D1	13	0.0	2.3		0.7	1.9	
D2	14	0.0	2.1		0.0	1.3	
D3	15	0.0	2.0		1.6	2.0	
D4	16	0.0	2.0		0.0	1.2	
A1	17	0.0	2.1		0.0	1.3	
A2	18	1.7	2.2		0.0	1.3	
A3	19	0.7	2.0		0.0	1.2	
A4	20	0.0	2.0		0.1	1.7	
B1	21	1.6	2.0		5.5	3.4	
B2	22	0.0	2.1		3.4	2.6	
B3	23	0.9	2.0		0.0	1.2	
B4	24	0.0	2.0		0.8	2.0	
C1	25	0.0	1.9		0.0	1.2	

Carol G. Robinson

03 Jun 2003 15:04 ALPHA/BETA - 1.09 ~~Page #1~~
Protocol #: 7 PW H3 403728 User : 2138

Time: 2.00
Data Mode: DPM Nuclide: SMGL02 Quench Set: SMGL02
Background Subtract: 1st Vial

	LL	UL	LCR	2S%	BKG
Region A:	0.5	18.6	0	0.0	9.88
Region B:	2.0	18.6	0	0.0	9.17
Region C:	40.0	2000	0	0.0	5.40

Quench Indicator: tSIE/AES
Ext Std Terminator: Count
BIRCH 03-WM-0574 (01-025) AG
Luminescence Correction On
Coincidence Time(ns): 18
Delay Before Burst(ns): Normal
Protocol Data Filename: c:\data\prot1.dat
Count Data Filename: c:\data\SDATA7.DAT
Spectrum Data Drive & Path: c:\data

A#	TIME	CPMA	LUM	H1	AU	tSIE	DPM1	2Sigma	CPMC
-1	10.00	9.88	2		8	620.98		0.00	5.40
0	2.00	815.01	0			554.61	1682.58	131.37	0.00
1	2.00	0.00	0			567.29	0.00	0.00	0.60
2	2.00	0.00	0			577.38	0.00	0.00	1.10
3	2.00	0.00	0			629.90	0.00	0.00	0.00
4	2.00	0.00	0			607.59	0.00	0.00	1.10
5	2.00	0.00	0			609.52	0.00	0.00	0.00
6	2.00	0.47	0			570.00	0.96	10.12	0.60
7	2.00	1.21	4			614.16	2.38	10.05	0.00
8	2.00	0.00	0			605.47	0.00	0.00	0.10
9	2.00	0.00	0			634.23	0.00	0.00	2.10
10	2.00	0.00	0			616.66	0.00	0.00	0.60
11	2.00	2.62	0			592.36	5.25	10.77	0.60
12	2.00	1.65	0			580.89	3.34	10.50	0.00
13	2.00	0.00	0			592.70	0.00	0.00	0.00
14	2.00	0.00	0			530.44	0.00	0.00	0.00
15	2.00	15.76	0			646.30	30.19	14.35	0.00
16	2.00	0.00	0			599.57	0.00	0.00	2.60
17	2.00	0.00	0			607.02	0.00	0.00	0.10
18	2.00	1.12	0			571.14	2.29	10.37	1.10
19	2.00	0.00	0			542.39	0.00	0.00	2.10
20	2.00	0.69	0			560.58	1.42	10.29	0.10
21	2.00	0.00	0			572.69	0.00	0.00	0.00
22	2.00	0.00	0			561.04	0.00	0.00	2.10
23	2.00	0.00	0			522.71	0.00	0.00	0.00
24	2.00	0.00	0			544.69	0.00	0.00	0.00
25	2.00	0.00	0			592.40	0.00	0.00	1.89

MJ

Carol G. Robinson

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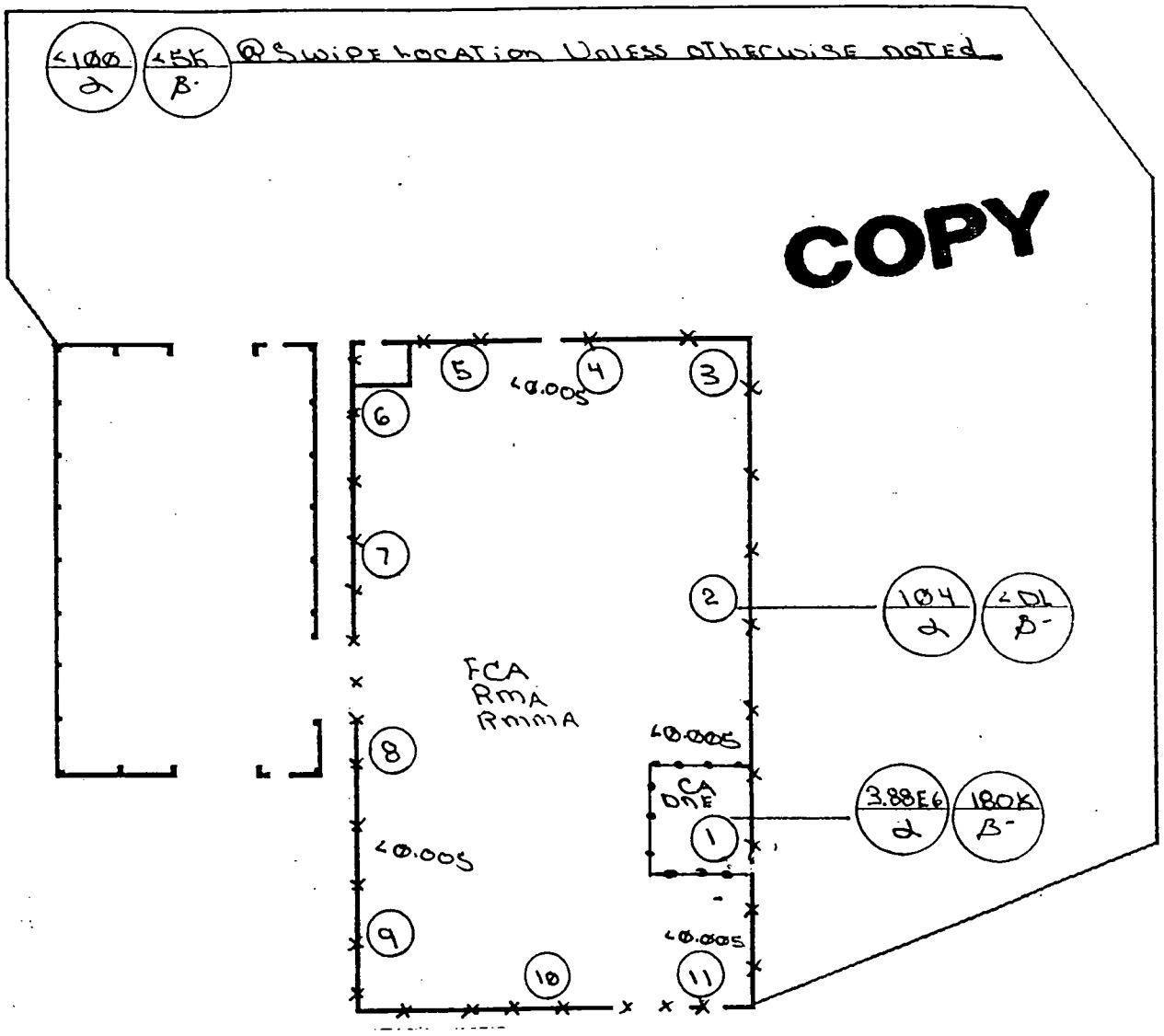
RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM) BLDG 31/31A N BLDG. PAD.	SURVEY NO. 03WM056
PURPOSE: WEEKLY FCA ROUTINE	RWP NO. N/A
	DATE: 5-29-03
	TIME: 1415

MAP/DRAWING



LEGEND: # = mrem/hr (γ) whole body
E = mrem/hr (β+η+γ) extremity on contact
△# = mrem/hr neutron
[#] = air sample number
(#) = swipe number
(#/α) or /β = direct cont. measurement in dpm/100cm²

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
Lud. 2360	5767/5798	8-20-03
Biscon	3931	9-27-03

Completed by: (Signat [redacted]	HP# 6184	Date: 5-29-03
Completed by: (Print Name) [redacted]		
Counted by: (Signature) SEE	HP#	Date:
Counted by: (Print Name) Attached Sheets		
Reviewed/Approved b [redacted]	HP# 7725	Date: 6-11-0
Reviewed/Approved by: (Print Name) [redacted]		

ML-9620 (2-98)

RADIOLOGICAL SURVEY DATA SHEET (cont.)

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
1	12	166	N/A	Floor
2	2	2		
3	Ø	Ø		
4	Ø	Ø		
5	Ø	Ø		
6	Ø	Ø		
7	Ø	Ø		
8	Ø	Ø		
9	4	Ø		
10	16	Ø		
11	Ø	Ø		

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Cor

COMMENTS: Notified R-POC, Bldg Mngr + Facility Mngr. UP Discovery of loose Contamination. Area posted CA/I

NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printou are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

ML-9620 (4-98)

BWXT of Ohio, Inc.

ANALYTICAL SERVICES REQUEST FOR ANALYSIS

DATE SUBMITTED:	SAMPLE TYPE:	COLLECTED BY:	NUMBER OF SAMPLES
6-2-03	Swipe	Mike Birch	1
PROJECT/FUNCTION:	**PRIMARY CONTACT/PHONE NO.:**		**MAIL STOP:**
Waste Mgmt	Michael Birch 3C084		

CHARGE NUMBER:	DATE(S) COLLECTED:	RSDS# (if applicable):	ATTACHMENTS (list):
	5-29-03	03WM-0561	

ANALYSES REQUESTED (check):

- ☐ ^3H
- ☐ Characterize/Approve for Sanitary or Storm Discharge. Estimate of Total Volume for Release_____ Approved_____
- ☐ Gross Alpha
- ☐ Air Filter – Isotopic Analysis
- ☒ Characterization per MD-80036, Operation #10015
- ☐ Isotopic Analysis: Pu____ U____ Th____ Am____ Other____
- ☐ Other _____

ADDITIONAL INFORMATION:

NOTE: Attach additional information (e.g. RSDS, screening results, collection data, and gamma spec. results) if applicable

LAB IDENTIFICATION	SAMPLE LOCATION	SAMPLE NUMBER	RESULTS
~~[illegible]~~	Bldg 31	1	
~~0306245~~			
0306242			

COMMENTS:

Need ASAP

ANALYZED BY:	DATE:
L.C. [illegible]	6-10-03

ML-5222 (1-01)

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Pg. 3 of 4

Laboratory ID#:	**0306242**
Project/function:	**Waste Management**
Submitted:	**Jun 2, 2003**
Submitted by:	**M. Birch**
Point of Contact:	**M. Birch x3682**
RSDS#:	**03-WM-0561**
Date:	**Jun 10, 2003**

Lab ID	0306242		
Sample Location	Bldg. 31 #1		
Isotope	**dpm/sample**	**Uncertainty +/-**	**LDL**
Pu-238	200.17	21.95	0.73
Pu-239/240	<LDL	<LDL	0.73
Am-241	6.78	1.48	0.63
Th-232	<LDL	<LDL	0.73
Th-230	<LDL	<LDL	0.73
Th-228	<LDL	<LDL	0.73
Th-227	<LDL	<LDL	0.73
U-238	<LDL	<LDL	0.73
U-235	<LDL	<LDL	1.16
U-233/234	<LDL	<LDL	0.73

Pg. 4 of 4

[redacted]

1585 6-10-03
HP# Date

5791 6/10/03
HP# Date

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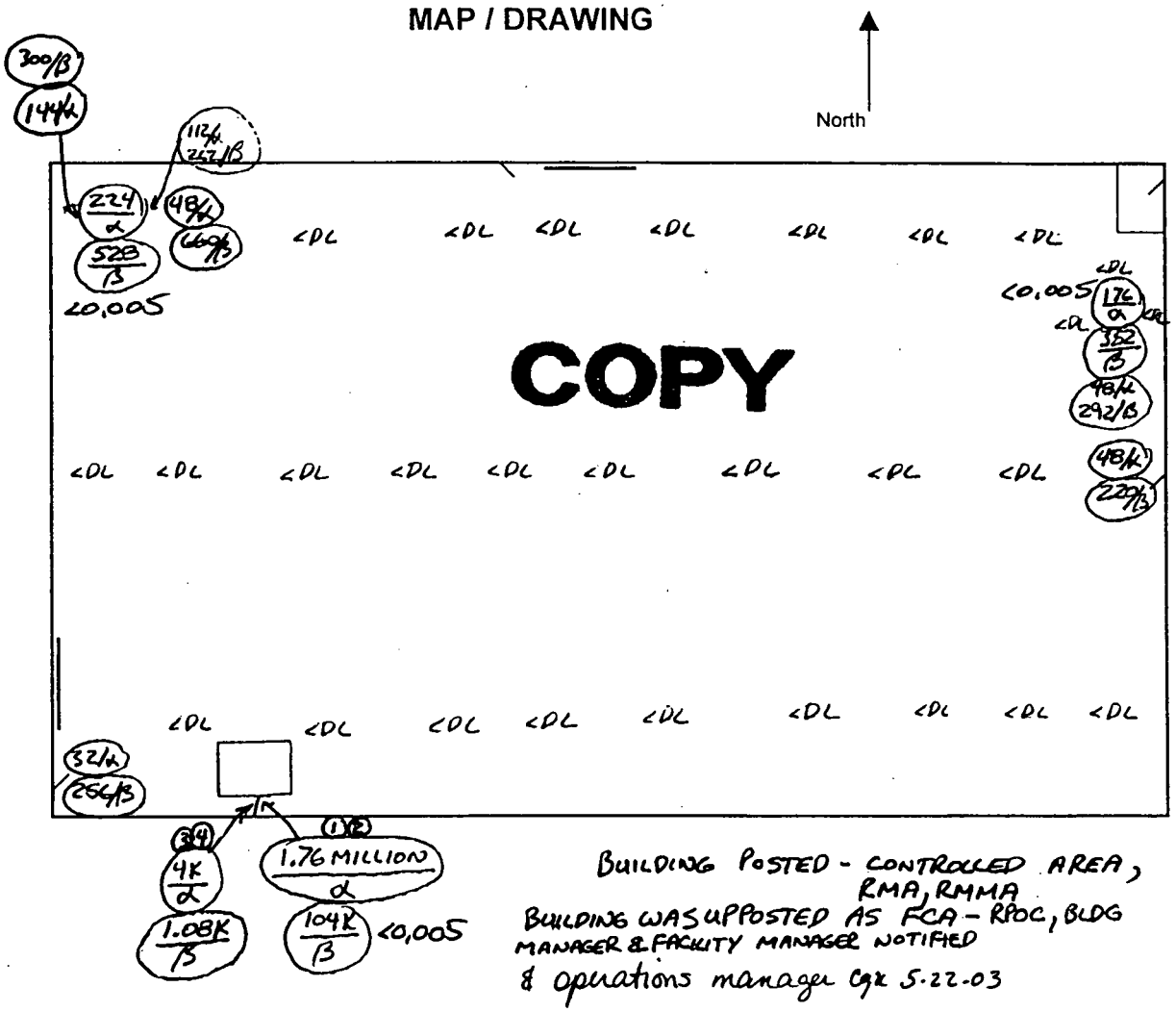
RADIOLOGICAL SURVEY DATA SHEET

Page 1 of ~~20~~ 3 5-22-03

LOCATION: (BLDG. / ROOM / AREA) Building 31	SURVEY NO. 03 WM 0541
PURPOSE: SUPPLEMENT 03 WM 0267 & 0513 WITH DIRECT READINGS OF FLOOR, POSTED BUILDING AS FCA FROM SURVEY RESULTS.	RWP NO. N/A
	DATE: 5-22-03
	TIME: 1400

MAP / DRAWING



BUILDING POSTED - CONTROLLED AREA, RMA, RMMA
BUILDING WAS UPPOSTED AS FCA - RPOC, BLDG MANAGER & FACILITY MANAGER NOTIFIED & operations manager CJK 5-22-03

NOTE: MICRO-R # 3931 9/27/03 USED TO VERIFY 30CM DOSERATES @ FIXED CONTAMINATION SPOTS.

NOTE: LOCATIONS MARKED <DL WERE SCANNED AND NO COUNTS REQUIRING A STATIONARY INTEGRATED COUNT WERE FOUND.

LEGEND:
= mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
K = factor of 1000
— · — · — = radiological boundary
△# = mrem/hr neutron
= air sample number
(#) = swipe number
(#/α) or /β = direct contamination measurement in dpm/100 cm²

INSTRUMENTS USED *SEE NOTES

Instrument	Serial Number	Cal. Due Date
2360	5831/5804	4-6-04
N		
		A

Completed by: (Signa[redacted]	HP# 7760	Date: 5-22-03
[redacted]		
Counted by: (Signature) N [redacted]	HP# 7760	Date: 5-22-03
Counted by: (Print Name) A [redacted]		
Reviewed/Appr[redacted]	HP# 7725	Date: 5-27-03
Reviewed/Approved by: (Print Name) [redacted]		

ML-9620 (2-98) Computer Generated

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Survey No.
03 WM 0541

RADIOLOGICAL SURVEY DATA SHEET (cont.)

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
1	4	0	N/A	FLOOR
2	32	12		
3	70	0		WOOD
4	101	0		SCALE
				A

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
				A

COMMENTS:
NOTE – 3030 #5824 5-19-04, #5745 4-3-04, USED TO COUNT SWIPES.
Bicron ~~3935~~ 3931 9-27-03 used for dose rates
CAL 3-27-03

NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If needed, mark N/A.

ML-9620A (4-98)

3 of 3

Page ~~2 of 2~~ 5-26-03

RADIOLOGICAL SURVEY DATA SHEET
MAP/DRAWING Continuation Page

Survey No.
03 WM 0541

MAP/DRAWING
Stationary Integrated Measurement Data
Background - 1 cpm α, 138 cpm β
DL - 1.4 cpm α, 30 cpm β
Correction Factor - 8 α, 4 β
Count Time - 1 min.

Location	Gross Counts		Gross cpm		Net cpm		Result dpm/100 cm²	
	Alpha	Beta	Alpha	Beta	Alpha	Beta	Alpha	Beta
1		A	29	270	28	132	224	528
2			23	226	22	88	176	352
3			7	193	6	55	48	220
4			7	303	6	165	48	660
5			5	202	4	64	32	256
6			7	211	6	73	48	292
7			15	202	14	64	112	256
8			19	213	18	75	144	300
9	5-22-03							A

NOTE: SWIPES TAKEN IN DIFFERENT LOCATIONS THAN THESE DIRECT READINGS. GROSS COUNTS SAME AS GROSS CPM.

LEGEND: # = mrem/hr (γ) whole body
#F = mrem/hr (β+η+γ) extremity on contact
△# = mrem/hr neutron
(#) = swipe number
[#] = air sample number
(#/α) or /β = direct cont. measurement in dpm/100cm²

ML-9620B (2-98)

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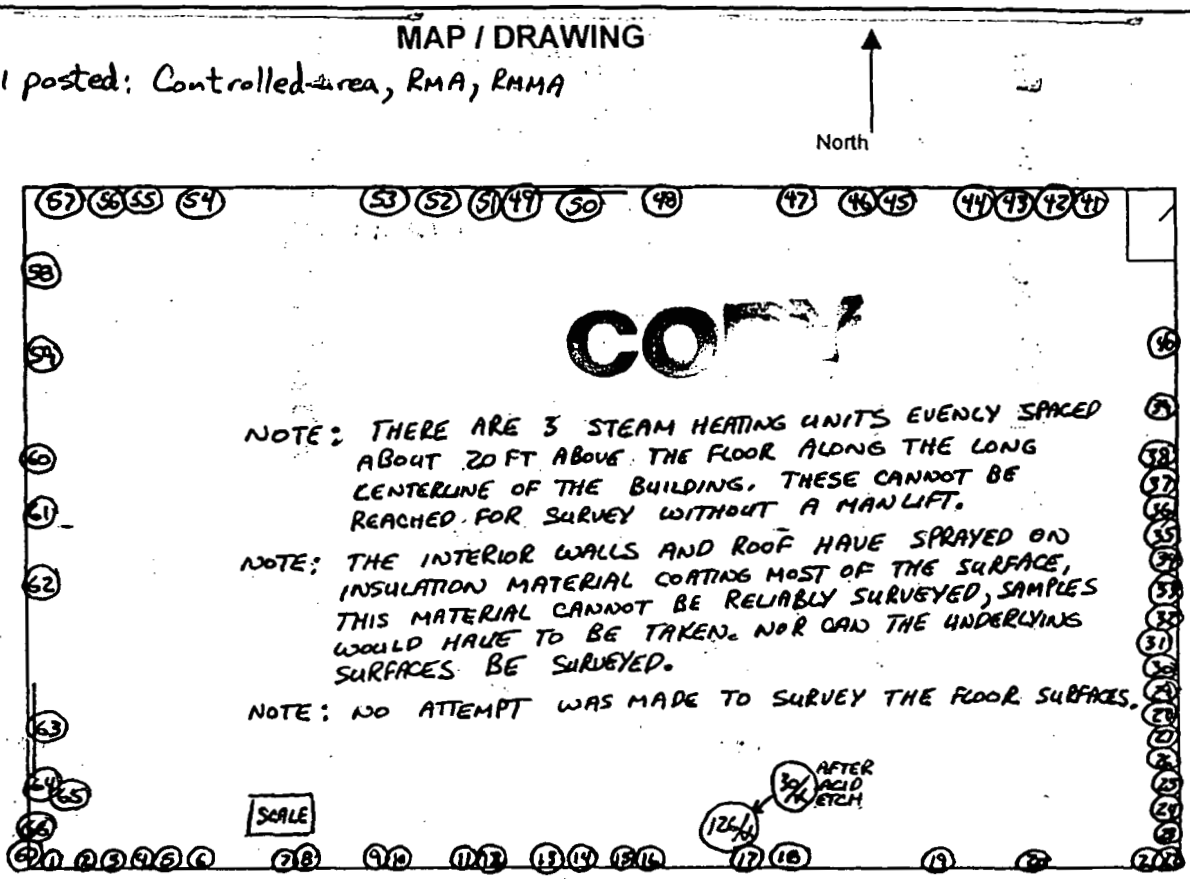
RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG. / ROOM / AREA) Building 31	SURVEY NO. 03 WM 0267
PURPOSE: MONTHLY	RWP NO. N/A
	DATE: 3-3-03
	TIME: 1400

MAP / DRAWING

Bldg 31 posted: Controlled area, RMA, RMMA



NOTE: DIRECT READINGS ALL <100 DPM α & <5000 DPM β EXCEPT (17) SHOWN. SEE PAGE 3 FOR THOSE LOCATIONS & READINGS THAT WERE ABOVE DL. THOSE READINGS THAT WERE ABOVE DL WERE ALL ON STRUCTURAL STEEL BEAMS.

NOTE: SAMPLE LOCATION (17) WAS ACID ETCHED AND TOTAL CONTAMINATION LEVELS REMEASURED ON 3-6-03, 2360 #5767/5798 8/20/03, Bkgnd 3.2cpm α/228.4cpm β, DL (2min CT) 2.6cpm α/200cpm β. Gross cnts 14α/310β Gross cpm 7cpm α/155cpm β; Net cpm 3.8cpm α/<DL β; 30.4cpm α/<DL β.

LEGEND:
= mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
K = factor of 1000
— · — · — = radiological boundary
△# = mrem/hr neutron
(#) = swipe number
[#] = air sample number
(#/α) or /β = direct contamination measurement in dpm/100 cm²

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
2360	5780/5781	7-24-03
		A
N		

[redacted]	HP# 7760	Date: 3-12-03 ~~3-4-03~~
Counted by: (Signature) SEE	HP#	Date:
Counted by: (Print Name) ATTACHED		
Reviewed/Approved [redacted]	HP# 7725	Date: 3-12-03
Reviewed/Approved by: (Print Name) [redacted]		

ML-9620 (2-98) Computer Generated

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Survey No.
03 WM 0267

RADIOLOGICAL SURVEY DATA SHEET (cont.)

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
1				WELD RECEPTACLE
2				POWER STRIP
3				WINDOW SILL
4				DIAGONAL BRACE
5				CONDUIT
6				BEAM
7				SILL
8				↓
9				BEAM
10				↓
11				SILL
12				RECEPTACLE
13				BEAM
14				↓
15				SILL
16				↓
17				BEAM
18		SEE		↓
19				DIAGONAL BRACE
20		ATTACHED		SILL
21				RECEPTACLE
22				DIAGONAL BRACE
23				↓
24				CONDUIT
25				↓
26				PANEL
27				↓
28				SWITCH
29				↓
30				↓
31				TRANSFORMER
32				DIAGONAL BRACE
33				SILL
34				BOX
35				CONDUIT

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
36				DOOR FRAME
37				CLOSERS
38				CONDUIT
39				EXTINGUISHE
40				SILL
41				DIAGONAL BRACE
42				SILL
43				DIAGONAL BRACE
44				BEAM
45				CONDUIT
46				SILL
47				BEAM
48				CONDUIT
49				SHELF
50				OH DOOR
51	SEE			BEAM
52				CONDUIT
53	ATTACHED			SILL
54				DIAGONAL BRACE
55				CONDUIT
56				SILL
57				DIAGONAL BRA
58				CONDUIT
59				SILL
60				DIAGONAL BRACE
61				CONDUIT
62				DIAGONAL BRACE
63				O.H. DOOR
64				SWITCHES
65				EXTINGUISE
66				DOOR FRAM
67				THERMOSTA
N				

COMMENTS: SWIPES EVALUATED <1000 DPM α & β.

NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If needed, mark N/A.

ML-9620A (4-98)

RADIOLOGICAL SURVEY DATA SHEET
MAP/DRAWING Continuation Page

Survey No. 03 WM 0267

MAP/DRAWING
Stationary Integrated Measurement Data
Background - 0.2 cpm α, 111.2 cpm β
DL - 1.4 cpm α, 30 cpm β
Correction Factor - 8 α, 4 β
Count Time - 1 min.

Location	Gross Counts		Gross cpm		Net cpm		Result dpm/100 cm²	
	Alpha	Beta	Alpha	Beta	Alpha	Beta	Alpha	Beta
6	9	105	9	105	8.8	<DL	70.4	<DL
9	8	95	8	95	7.8	<DL	62.4	<DL
12	16	122	16	122	15.8	<DL	126.4	<DL
47	9	130	9	130	8.8	<DL	70.4	<DL

A

LEGEND:
= mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
△# = mrem/hr neutron
(#) = swipe number
[#] = air sample number
(#/α) or /β = direct cont. measurement in dpm/100cm²

ML-9620B (2-98)

Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: SMEAR002
Batch Ended: 3/3/03 13:34
Cal. Due Date: 4/25/03
Serial Number: 26966-3

Batch ID: 03-WM-0267 BAKO-67 BSB

Pg 4 of 8 10 3-12-03

Detector ID	Sample ID	Alpha Activity DPM	Alpha Activity σ	Alpha Activity flags	Beta Activity DPM	Beta Activity σ	Beta Activity flags
A1	1	3.47	2.99		13.95	4.65	
A2	2	1.58	1.96		1.46	2.08	
A3	3	5.91	3.70		1.25	2.15	
A4	4	1.47	2.01		0.20	1.67	
B1	5	3.56	2.87		1.22	2.17	
B2	6	0.00	2.04		2.68	2.39	
B3	7	5.75	3.65		2.16	2.57	
B4	8	1.45	2.00		0.00	1.16	
C1	9	0.00	2.09		0.51	1.77	
C2	10	0.00	1.84		0.00	1.16	
C3	11	1.66	2.12		3.01	2.50	
C4	12	0.00	2.05		0.00	1.47	
D1	13	1.40	1.93		0.00	1.24	
D2	14	0.00	2.10		0.37	1.72	
D3	15	0.00	2.13		0.00	1.28	
D4	16	1.48	2.11		1.40	2.07	
A1	17	3.48	2.90		0.00	1.81	
A2	18	1.58	1.95		0.26	1.70	
A3	19	0.00	2.13		0.00	1.24	
A4	20	1.47	2.00		0.00	1.18	
B1	21	3.56	2.85		0.00	1.25	
B2	22	0.00	2.00		0.00	1.19	
B3	23	1.59	2.16		5.05	3.15	
B4	24	3.44	2.82		0.00	1.16	
C1	25	0.00	2.08		0.00	1.25	
C2	26	3.14	2.63		2.51	2.32	
C3	27	0.00	2.08		0.00	1.25	

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Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: SMEAR002
Batch Ended: 3/3/03 13:34
Cal. Due Date: 4/25/03
Serial Number: 26966-3

Batch ID: 03-WM-0267 BAKO-67 BSB

Pg 5 of ~~80~~ 10 3-12-03

Detector ID	Sample ID	Alpha Activity DPM	Alpha Activity σ	Alpha Activity flags	Beta Activity DPM	Beta Activity σ	Beta Activity flags
C4	28	0.98	2.10		3.21	2.92	
D1	29	0.00	1.95		0.37	1.75	
D2	30	1.57	2.09		0.00	1.22	
D3	31	0.00	2.14		0.36	1.81	
D4	32	1.48	2.13		2.59	2.39	
A1	33	3.47	2.95		7.57	3.63	
A2	34	1.58	1.99		3.86	2.69	
A3	35	0.00	2.16		2.91	2.48	
A4	36	1.47	2.00		0.00	1.18	
B1	37	1.56	2.03		0.13	1.77	
B2	38	0.00	2.03		1.49	2.06	
B3	39	1.59	2.13		2.49	2.57	
B4	40	3.44	2.83		0.00	1.64	
C1	41	1.56	2.11		1.61	2.16	
C2	42	1.32	1.84		0.00	1.16	
C3	43	0.00	2.10		0.67	1.76	
C4	44	0.98	2.10		3.21	2.92	
D1	45	1.40	1.93		0.00	1.24	
D2	46	0.00	2.13		2.80	2.43	
D3	47	0.00	2.16		1.64	2.22	
D4	48	1.48	2.09		0.00	1.19	
A1	49	3.48	2.91		2.46	2.56	
A2	50	0.00	1.94		0.00	1.20	
A3	51	0.00	2.16		2.91	2.48	
A4	52	0.00	2.02		1.52	2.05	
B1	53	3.56	2.86		0.00	1.77	
B2	54	1.31	2.01		0.13	1.69	
B3	55	1.59	2.15		3.77	2.87	
B4	56	0.00	2.00		0.00	1.17	
C1	57	1.56	2.09		0.36	1.77	

Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: SMEAR002
Batch Ended: 3/3/03 13:34
Cal. Due Date: 4/25/03
Serial Number: 26966-3

Batch ID: 03-WM-0267 BAKO-67 BSB

Pg 6 of 10 3-12-03

Detector ID	Sample ID	Alpha Activity DPM	Alpha Activity σ	Alpha Activity flags	Beta Activity DPM	Beta Activity σ	Beta Activity flags
C2	58	1.32	1.84		0.00	1.16	
C3	59	0.00	2.10		0.67	1.76	
C4	60	0.00	2.07		0.00	2.16	
D1	61	1.40	1.95		0.19	1.75	
D2	62	0.00	2.15		4.01	2.72	
D3	63	0.00	2.14		0.36	1.81	
D4	64	1.48	2.11		1.40	2.07	
A1	65	3.48	2.90		0.00	1.81	
A2	66	0.00	1.96		1.61	2.08	
A3	67	0.00	2.13		0.00	1.24	

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rotocol #: 2 Pw H3 405828 User : 5268

ime: 2.00
ata Mode: DPM Nuclide: SMGLS02 Quench Set: SMGLS02
ackground Subtract: 1st Vial

	LL	UL	LCR	2S%	BKG
egion A:	0.5	- 18.6	0	0.0	6.70
egion B:	2.0	- 18.6	0	0.0	6.50
egion C:	40.0	- 2000	0	0.0	11.79

uench Indicator: tSIE/AEC
Ext Std Terminator: Count
3-WM-0267 BAKO-67 BSB
uminescence Correction On
oincidence Time(ns): 18
elay Before Burst(ns): Normal
rotocol Data Filename: c:\data\PROT2.DAT
ount Data Filename: c:\data\SDATA2.DAT
pectrum Data Drive & Path: c:\data

Pg 7 of ~~8~~ 10 3-12-03

J Brown

S#	TIME	CPMA	CPMB	LUM	FLAG	tSIE	DPM1	2Sigma	CPMC
-1	10.00	6.70	6.50	0	B	588.61		0.00	11.79
0	2.00	597.14	564.99	0		484.71	1301.69	124.65	0.00
1	2.00	0.00	0.00	40		575.23	0.00	0.00	2.21
2	2.00	3.11	3.00	0		327.19	8.94	13.62	0.21
3	2.00	12.31	11.04	0		580.00	24.54	12.85	0.00
4	2.00	12.85	13.05	0		387.84	32.34	16.45	8.21
5	2.00	5.64	4.49	0		421.46	13.44	12.49	8.71
6	2.00	11.41	8.69	0		526.23	23.85	13.16	6.21
7	2.00	6.80	6.14	0		547.65	13.94	11.22	2.21
8	2.00	12.69	12.54	0		365.18	33.52	17.20	4.74
9	2.00	6.59	6.36	0		506.51	14.02	11.56	3.60
10	2.00	0.57	0.33	0		416.32	1.38	9.95	0.00
11	2.00	0.00	0.00	0		462.39	0.00	0.00	1.21
12	2.00	3.10	2.66	0		626.73	5.94	9.06	0.00
13	2.00	4.59	3.61	0		388.44	11.53	12.66	3.21
14	2.00	6.30	6.23	0		597.83	12.37	10.56	12.71
15	2.00	1.08	1.00	0		386.52	2.72	10.78	4.71
16	2.00	0.46	0.66	0		559.00	0.94	8.37	0.21
17	2.00	10.06	8.97	0		594.86	19.80	11.94	5.71
18	2.00	7.66	6.85	0		478.47	16.83	12.38	2.52
19	2.00	4.30	4.00	0		511.31	9.11	10.55	1.21
20	2.00	1.80	1.82	0		481.41	3.94	9.72	0.00
21	2.00	2.22	2.19	0		574.21	4.44	9.08	0.00
22	2.00	3.39	3.45	0		524.94	7.10	10.02	3.71
23	2.00	8.58	7.78	0		506.15	18.25	12.35	9.21
24	2.00	10.30	9.84	0		539.70	21.27	12.61	8.90
25	2.00	10.76	10.32	0		487.63	23.38	13.43	3.71
26	2.00	8.30	6.74	0		623.07	15.96	11.06	3.71
27	2.00	9.80	8.94	0		367.72	25.74	15.81	6.71
28	2.00	7.32	7.02	0		520.60	15.37	11.70	0.00
29	2.00	6.80	6.43	0		489.02	14.74	11.86	0.00
30	2.00	3.71	3.60	0		340.14	10.35	13.57	0.00
31	2.00	5.30	5.00	0		604.16	10.35	10.12	0.00
32	2.00	0.80	0.53	0		433.98	1.87	9.83	0.21
33	2.00	6.91	6.39	0		582.60	13.75	10.93	1.71
34	2.00	2.04	1.64	0		503.77	4.35	9.58	0.00

S#	TIME	CPMA	CPMB	LUM FLAG	tSIE	DPM1	2Sigma	CPMC
35	2.00	1.02	1.00	0	507.13	2.18	9.05	0.71
36	2.00	0.97	0.27	0	559.59	1.97	8.61	0.00
37	2.00	1.30	1.50	0	563.52	2.63	8.74	0.00
38	2.00	7.30	7.43	0	462.28	16.40	12.51	0.21
39	2.00	3.04	2.44	0	464.37	6.82	10.56	0.00
40	2.00	1.80	0.84	0	540.08	3.72	9.16	0.00
41	2.00	1.84	1.24	0	611.18	3.57	8.63	0.00
42	2.00	0.00	0.00	0	543.42	0.00	0.00	5.77
43	2.00	0.00	0.07	0	388.47	0.00	0.00	0.00
44	2.00	1.30	0.88	0	517.46	2.74	9.11	0.00
45	2.00	3.63	3.32	0	450.16	8.30	11.06	2.21
46	2.00	1.80	2.00	0	395.71	4.46	10.99	4.21
47	2.00	2.17	1.41	0	511.79	4.60	9.57	0.00
48	2.00	0.30	0.50	0	432.25	0.70	9.57	5.21
49	2.00	2.63	2.72	0	506.08	5.59	9.84	0.00
50	2.00	0.05	0.25	0	415.89	0.12	9.65	0.00
51	2.00	3.30	3.36	0	486.75	7.17	10.37	0.00
52	2.00	2.14	1.80	0	470.16	4.75	10.04	0.00
53	2.00	2.12	1.82	0	538.44	4.38	9.32	0.00
54	2.00	0.80	0.38	0	620.29	1.54	8.10	0.00
55	2.00	1.29	0.92	0	489.30	2.80	9.36	2.22
56	2.00	0.73	0.94	0	367.70	1.93	11.01	0.00
57	2.00	2.80	3.00	0	580.19	5.58	9.29	0.00
58	2.00	0.00	0.00	0	416.68	0.00	0.00	0.00
59	2.00	5.30	4.50	0	516.85	11.17	10.92	0.21
60	2.00	0.30	0.50	0	394.51	0.74	10.14	0.00
61	2.00	2.60	2.19	0	477.94	5.72	10.16	0.71
62	2.00	0.00	0.00	0	442.78	0.00	0.00	1.42
63	2.00	3.41	3.13	0	437.20	7.94	11.15	0.71
64	2.00	1.30	0.78	0	510.18	2.76	9.17	0.00
65	2.00	3.14	2.12	0	569.59	6.31	9.52	1.21
66	2.00	10.80	8.44	0	683.82	19.88	11.40	0.00
67	2.00	21.80	16.44	0	672.34	40.33	14.62	0.00

RSDS 03 WM026
Pg 9 of 10

BWXT of Ohio, Inc.

ANALYTICAL SERVICES REQUEST FOR ANALYSIS

DATE SUBMITTED:	SAMPLE TYPE:	COLLECTED BY:	NUMBER OF SAMPLES
3/6/03	Acid Etch	JUSTICE	1
PROJECT/FUNCTION:	**PRIMARY CONTACT/PHONE NO.:**		**MAIL STOP:**
WM	BAKO		
CHARGE NUMBER:	**DATE(S) COLLECTED:**	**RSDS# (if applicable):**	**ATTACHMENTS (list):**
C0388C	3/6/03	N/A	N/A

ANALYSES REQUESTED (check):

- ☐ ^3H
- ☐ Characterize/Approve for Sanitary or Storm Discharge. Estimate of Total Volume for Release_____ Approved_____
- ☐ Gross Alpha
- ☐ Air Filter – Isotopic Analysis
- ☐ Characterization per MD-80036, Operation #10015
- ☒ Isotopic Analysis: Pu X U X Th X Am___ Other Po
- ☐ Other _____

ADDITIONAL INFORMATION:

NOTE: Attach additional information (e.g. RSDS, screening results, collection data, and gamma spec. results) if applicable

LAB IDENTIFICATION	SAMPLE LOCATION	SAMPLE NUMBER	RESULTS
6302418	Bldg 31	1	

COMMENTS:

ANALYZED BY: [signature] DATE: 3/11/03

ML-5222 (1-01)

RSDS# 03 WM 026
Pg 10 of 10

Laboratory ID#: 0302418
Project/function: Bldg 31
Submitted: Mar 6, 2003
Submitted by: J. Bako
Point of Contact: J. Bako
RSDS#: N/A
Date: Mar 12, 2003

0302418

Isotope	Sample Location	dpm/sample	Uncertainty +/-	LDL (dpm/sample)
Pu-238	Bldg 31 #1	252.75	17.73	0.129
Pu-239	Bldg 31 #1	2.47	0.38	0.129

[redacted]

6195 — 3/12/03
HP # — Date

2857 — 3/12/03
HP # — Date

Appendix H

Radon Information

Radon level is not applicable for open air demolitions.

Appendix I

Asbestos Information

From: Christopher Ahlquist
To: Darnell, Val; Kramer, Donald
Date: 11/11/03 5:41PM
Subject: Buildings 31 & 31A

Don/Val -

For Buildings 31/31A asbestos and lead paint concerns, the following is provided for your use:

Asbestos

No previous asbestos survey information was found for Buildings 31/31A.

During July of 2002, Helix Environmental, Inc., under contract to BWXT of Ohio, Inc., performed a comprehensive walk-through survey of all areas of Buildings 31/31A in order to identify all asbestos-containing materials prior to demolition of the facility. During their survey Helix Environmental utilized Ohio Department of Health Certified Asbestos Hazard Evaluation Specialists as required by State regulations for individuals assessing asbestos-containing materials. Five (5) fire rated doors within Building 31 were assumed to contain asbestos and were identified as requiring removal prior to demolition; no asbestos-containing materials were identified in connection with Building 31A. The fire doors will be removed, packaged and labeled by asbestos worker-trained CH2M Hill personnel in accordance with NESHAP requirements prior to commencement of demolition activities.

Lead

No previous lead surveys or sampling data were found for Buildings 31/31A. Since the buildings are scheduled for imminent demolition, painted surfaces will be tested for lead content as planned work indicates the need for such testing in order to avoid worker exposure to lead. This restriction will be incorporated into work plans for which disturbance of paint is a possibility.

In accordance with guidance from Mound Waste Management, paint coatings should not result in a hazardous waste issue during the course of normal demolition by heavy-duty means.

These determinations were made by Mr. Christopher Ahlquist who is an Ohio Department of Health Licensed Lead Risk Assessor.

Let me know if I can be of further assistance,

Chris Ahlquist

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HELIX ENVIRONMENTAL, INC.

PRE-DEMOLITION ASBESTOS INSPECTION BUILDING 31 MOUND FACILITY. MIAMISBURG, OHIO

Prepared for

Mr. Dave Pratt, Senior Buyer
BWXT of Ohio, Inc.
P.O. Box 3030, OSE 216
1 Mound Road
Miamisburg, Ohio 45343-3030

Prepared by

HELIX ENVIRONMENTAL, INC.
1 East Stewart Street
Dayton, Ohio 45409

Ralph A. Froehlich, CIH, CSP, QEP
Certified Industrial Hygienist No. AP-2631

Report Date: Aug., 2002

Helix Job No. 3200

THIS REPORT CONTAINS INFORMATION ON THE ASBESTOS CONTENT OF BUILDING MATERIALS WHICH IS REQUIRED TO BE MAINTAINED FOR THE LIFE OF THE BUILDING. THIS REPORT MUST BE PROVIDED TO SUBSEQUENT BUILDING OWNERS AS REQUIRED BY 29 CFR 1926.1101

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1. EXECUTIVE SUMMARY

On July 10, 2002, Helix Environmental, Inc. contracted with BWXT of Ohio, Inc. to conduct an asbestos-containing building materials inspection of Building 31 and other buildings at the Mound Site for the U.S. Department of Energy in Miamisburg, Ohio. The asbestos inspection was necessary to identify, quantify and evaluate the condition of regulated asbestos-containing building materials (RACBM) prior to the start of building demolition. No previous inspection for asbestos containing building materials had been conducted for this building. This report summarizes the inspection procedures, sampling and analytical methods, and analytical results, with recommendations for consideration.

The following materials were identified as suspect asbestos building materials in Building 31:

- Sprayed-on Fireproofing
- Hard Wall Plaster
- Fire doors (4 Doors) (Assumed)

A total of twelve bulk samples of suspect asbestos materials were collected, documenting that the sprayed-on fireproofing and the hard wall plaster contained no asbestos.

Fire doors were assumed to contain asbestos, in accordance with current OSHA and EPA regulations and the scope of work for the project. Assumed asbestos-containing fire doors will need to be removed prior to building demolition, and should be treated as asbestos-containing materials until sampling and analytical information is available to document that these materials do not contain more than 1% asbestos.

Work which disturbs asbestos-containing materials could result in airborne fiber releases and exposures to workers and building occupants. OSHA regulations require air sampling to document worker exposures to asbestos whenever these materials are disturbed, as well as training for all workers who perform such work. State and federal environmental regulations also apply to work which damages the materials during demolition. In Ohio, if more than 50 SF or 50 LF of friable regulated asbestos-containing materials must be removed using methods which may damage them, a certified asbestos abatement contractor would be required for this work. Advance notification (ten working days) is also required prior to the start of removal and building demolition.

Based on the results, Helix Environmental, Inc. recommends that:

1. **BWXT of Ohio, Inc. maintain copies of the information from this asbestos inspection and sampling with Building 31 records.** This information must be maintained for the duration of ownership of the building, and must be transferred to subsequent owners. This may most easily be accomplished by maintaining a copy of this report in a secure location with other building records.

2. **Identified asbestos-containing materials should not be disturbed or removed except by properly trained and equipped personnel.** Since the planned demolition may disturb more than 50 SF or 50 LF of these materials, the regulated materials should be removed by trained workers or a licensed asbestos abatement contractor prior to the start of demolition. Removal of the doors can be performed by disassembling the fire doors from the frames without disturbing assumed asbestos-containing insulation within the fire doors.

3. **Air sampling should be performed during any work which disturbs the integrity of identified asbestos-containing materials, in accordance with OSHA regulations.** While disturbance of insulation within fire doors is unlikely, if it occurs, air sampling is recommended. Air monitoring should be performed by experienced industrial hygienists under the direction of a Certified Industrial Hygienist to document airborne exposures to asbestos inside and outside of the work area, before, during and after the abatement work. Certified personnel and laboratories should be used to provide adequate documentation of airborne fiber levels. Records of the abatement operation should be maintained for a minimum of thirty years.

4. **Provide ten working-day advance notification to the Regional Air Pollution Control Agency prior to the start of demolition.** Notification is required by U. S. EPA regulations (40 CFR 61M) even if no asbestos-containing building materials have been identified in the building, in order to allow regulatory officials to reinspect the building if needed.

2. BACKGROUND

On July 10, 2002, Helix Environmental, Inc. contracted with BWXT of Ohio, Inc. to conduct an asbestos-containing building materials inspection of Building 31 at the Mound Site for the U.S. Department of Energy in Miamisburg, Ohio. The asbestos inspection was necessary to identify, quantify and evaluate the condition of regulated asbestos-containing building materials (RACBM) prior to the start of building demolition.

The inspection and sampling were performed on July 24, 2002 by Ralph Froehlich, CIH, CSP, QEP. and Mr. Cameron Day, Industrial Hygienist. Mr. Froehlich is a Certified Industrial Hygienist with more than twenty years experience in the fields of occupational and environmental health. Mr. Froehlich is certified by the Ohio Department of Health as an Asbestos Hazard Evaluation Specialist, Asbestos Hazard Abatement Specialist, and as an Asbestos Project Designer (Cert. Nos. 3074, 2112, and 60038, respectively). Mr. Day has over two years experience in the fields of occupational safety and health and is certified by the Ohio Department of Health as an Asbestos Hazard Evaluation Specialist (Cert. No. 33958).

Prior to the start of the inspection, Helix Environmental, Inc. received Rad Worker II training to enable them to enter radiologically-controlled areas. Radiation areas were present in Building 31 and all samples had to be screened by radiation technician prior to sampling. Helix Environmental, Inc. personnel met with the BWXTO Project Engineer prior to the start of the inspection.

Building 31 is a one-story 6090 SF metal prefabricated building built in 1966. Currently, Building 31 is occupied and operational.

Helix Environmental, Inc. was directed to inspect the building to identify all suspect regulated asbestos-containing materials, and to sample and verify the asbestos content of these materials. Category I Nonfriable materials (resilient flooring materials, bituminous roofing materials, gaskets) were not sampled, in accordance with directions from Mr. Chris Alquist, BWXT of Ohio, Inc. In addition, Helix Environmental, Inc. was directed to assume that all fire doors contained asbestos.

3. INSPECTION AND SAMPLING PROCEDURES

The following materials were identified as suspect asbestos-containing building materials, based on a room-by-room inspection of the building:

- Sprayed-on Fireproofing
- Hard Plaster
- Fire doors (4 Doors) (Assumed)

The results of the room-by-room inspection are contained in the appendices. A total of twelve bulk samples were collected to verify the asbestos content of these materials. Materials that met the definition of Category I Nonfriable asbestos-containing materials were assumed to contain asbestos, and were not sampled. Fire doors were assumed to contain asbestos.

Representative samples of suspect asbestos-containing materials were collected by Helix Environmental, Inc. using appropriate hand sampling tools and random sampling techniques. Samples were placed in labeled resealable sampling bags. The outside of the sampling container, all sampling tools, and the immediate area were then wiped using new moist towelettes to minimize the possibility of cross contamination. The single-use towelettes were properly disposed off site by Helix Environmental, Inc. personnel. Sampling locations were sealed using labeled duct tape and then photographed for documentation purposes. Sampling personnel from Helix Environmental, Inc. used personal protective equipment where necessary, including half-face air-purifying respirators with HEPA cartridges during sampling, to minimize the possibility of personal exposure to asbestos.

Confirmed and suspect asbestos-containing materials were assessed as to the type of material, amount, condition and disturbance potential, and noted on physical assessment records. Condition of materials were rated as to the extent of damage to the material. Undamaged material was given a condition assessment of "good". Materials having less than 25% localized or less than 10% distributed damage were given a "fair" (damaged) condition assessment. Materials having more than 25% localized or more than 10% distributed damage were given a "poor" (significantly damaged) condition assessment.

Side-by-side quality assurance/quality control samples were also collected at a minimum 5% QA/QC sampling rate. The sample locations and assessments are included on the sample logs attached in the appendices.

4. ANALYTICAL PROCEDURES

Bulk asbestos samples were sent to Schneider Laboratories, Inc., Richmond, Virginia, where they were analyzed via Polarized Light Microscopy with dispersion staining in accordance with the U.S. Environmental Protection Agency's Interim Methods for the Determination of Asbestos in Bulk Insulation Samples (EPA-600/R-93/116, June, 1993.) Under this method, the limit of detection for asbestos is about 1 percent by area. Samples containing smaller amounts of asbestos are not reliably detected by this technique. Polarized light microscopes equipped with 10X eyepieces, 10X and 40X objective lenses and dispersion staining lenses were used to identify fibers present in the samples.

The side-by-side QA/QC sample was delivered to Environmental Hazards Services, L.L.C. in Richmond, Virginia for independent analysis to determine asbestos content by PLM.

Both Schneider Laboratories, Inc. and Environmental Hazard Services, L.L.C. maintain accreditation from the American Industrial Hygiene Association and have received accreditation through successful participation in the NIST National Voluntary Laboratory Accreditation Program (NVLAP) for bulk asbestos. AIHA-accredited laboratories are scrutinized on a regular basis to ensure that personnel, equipment, facilities and data are maintained. In addition, AIHA-accredited laboratories have well-developed assurance/quality control programs to ensure that analytical results accurately reflect conditions present during the sampling periods. Analytical results are attached in the appendices.

5. APPLICABLE STANDARDS

Asbestos

The U.S. EPA has established regulations which apply to friable and potentially friable materials with asbestos content in excess of 1%, as determined by PLM. These regulations establish required notification, removal techniques, and disposal of regulated asbestos-containing materials. The Ohio EPA has established additional regulations paralleling those of the U.S. EPA. "Friable" means that a suspect material can be reduced to a powder by hand pressure when dry and denotes a material that is capable of releasing significant amounts of asbestos fibers to the air. Potentially-friable materials are those that may release asbestos fibers to the air if they are extensively damaged during demolition operations, and include Category I Nonfriable materials in poor condition and Category II Nonfriable materials. Category I Nonfriable materials include bituminous roofing materials, resilient flooring materials, and gaskets, where the asbestos is mixed in a resilient matrix. Category I Nonfriable materials may be left in buildings when they are demolished, if the materials are not in poor condition. Category II Nonfriable materials include all other non friable materials, and they must be removed from buildings prior to their demolition, since demolition activities may release significant amounts of asbestos into the air (40 CFR 61 Subpart M). The Ohio EPA has established equivalent regulations for Ohio.

Additionally, U. S. EPA has promulgated regulations governing the management of asbestos in public and non-profit private school buildings, grades K-12 (40 CFR 763.80 ff), which detail the sampling and analytical protocols followed during a school asbestos inspection, as well as additional requirements for the training and certification of professionals involved in the inspection and management of asbestos materials. The requirements for training and certification have been extended by congressional action to cover all persons involved in asbestos inspection, project design, supervision and abatement work, as part of the Asbestos School Hazard Abatement Reauthorization Act (ASHARA). U. S. EPA has also promulgated regulations for the protection of public sector workers (40 CFR 763.120)

The Occupational Safety and Health Administration (OSHA) revised its asbestos regulations to reduce the eight-hour Time-Weighted Average (TWA) Permissible Exposure Limit to 0.1 fibers/cc (29 CFR 1910.1001, 29 CFR 1926.1101). A 30-minute Excursion Limit of 1 fiber/cc is also included with the standards. Asbestos-containing materials are defined as those that contain more than 1% asbestos. These regulations include complex requirements for asbestos abatement, dividing the work with and around asbestos into four classes, with varying requirements for each

class. An additional requirement calls for building owners and managers to keep information on asbestos-containing materials with each building, until all asbestos-containing materials have been removed from the building.

The American Conference of Governmental Industrial Hygienists (ACGIH) has proposed an airborne eight-hour TWA Threshold Limit Value of 0.1 fibers/cc (2002 TLVs). ACGIH TLVs denote concentrations and conditions to which it is believed that nearly all workers may be repeatedly exposed day after day without adverse effect.

The National Institute for Occupational Safety and Health (NIOSH) identifies asbestos as an occupational carcinogen, and recommends that occupational exposures be "limited to the lowest feasible concentration."

The Ohio Department of Health has established additional regulations for asbestos abatement, including a certification program for asbestos supervisors, workers, inspectors and management planners, project designers, and air monitoring technicians. ODOH regulations also require contractors to be licensed, and require 10 working day advance notifications for asbestos abatement in amounts over 50 LF or 50 SF of friable asbestos-containing material (OAC 3701-34).

Montgomery County, Ohio has adopted local regulations which require advance notification when more than 50 SF or 50 LF of friable asbestos-containing building material is removed.

6. ANALYTICAL RESULTS

The sample results are as follows:

TABLE 1: SUMMARY OF ASSUMED ASBESTOS-CONTAINING MATERIALS IN BUILDING 31, MOUND, MIAMISBURG, OHIO, JULY 24, 2002

Sample Number	Lab Number	Location	Condition	Quantity	Result
Fire Doors	--	Building 31	Good	4 Doors	Assumed

TABLE 2: SUMMARY OF CONFIRMED NONASBESTOS MATERIALS IN BUILDING 31, MOUND, MIAMISBURG, OHIO, JULY 24, 2002

Sample Number	Lab Number	Location	Result
Sprayed-on Fireproofing			
3200-7-24-11	2350382	Northwest corner	No Asbestos Detected
3200-7-24-12	2350383	West wall middle	No Asbestos Detected
3200-7-24-13	2350384	Southwest corner	No Asbestos Detected
3200-7-24-14	2350385	South wall west side	No Asbestos Detected
3200-7-24-15	2350386	South wall east side	No Asbestos Detected
3200-7-24-16	2350387	East wall middle	No Asbestos Detected
3200-7-24-17	2350388	East wall north end	No Asbestos Detected
3200-7-24-18	2350389	North wall east side	No Asbestos Detected
3200-7-24-19	2350390	North wall west side	No Asbestos Detected
Hard Plaster			
3200-7-24-20	2350391 Layer 1	Room 3, Fire Service West side top corner Base Coat	No Asbestos Detected
3200-7-24-20	2350391 Layer 2	Room 3, Fire Service West side top corner Top Coat	No Asbestos Detected
3200-7-24-21	2350392 Layer 1	Room 3, Fire Service North wall Base Coat	No Asbestos Detected
3200-7-24-21	2350392 Layer 2	Room 3, Fire Service North wall Top Coat	No Asbestos Detected
3200-7-24-22	2350393 Layer 1	Room 3, Fire Service West wall Base Coat	No Asbestos Detected
3200-7-24-22	2350393 Layer 2	Room 3, Fire Service West wall Top Coat	No Asbestos Detected

TABLE 3: QUALITY CONTROL/QUALITY ASSURANCE SAMPLES FROM BUILDING 31, MOUND, MIAMISBURG, OHIO, JULY, 2002

Sample Number	Lab Number	Location	Primary Lab Result	QA Lab Result	Comparison
Sprayed-on Fireproofing					
3200-7-24-14QA	07023458-02	South wall west side	No Asbestos Detected	No Asbestos Detected	Equivalent

7. DISCUSSION AND RECOMMENDATIONS

All bulk samples of suspect materials collected in Building 31 were found to contain no detectable asbestos.

Fire doors were assumed to contain asbestos. Fire doors must be removed from the building prior to demolition unless additional destructive testing documents that the door insulation contains 1% or less asbestos.

Quality assurance analysis of side-by-side samples found equivalent results for one of the sampled materials, with no detectable asbestos reported from both laboratories.

Removal of the assumed asbestos-containing fire doors can be performed by trained workers or a licensed asbestos abatement contractor. Costs for the removal of the asbestos-containing materials in Building 98 are estimated to be as follows:

Material	Estimated Quantity	Est. Unit Cost	Est. Cost
Fire Doors	4 Doors	$100/each	$ 400
ESTIMATED TOTAL			$ 400

These estimated costs reflect asbestos removal and disposal costs in southwest Ohio, but may vary significantly, due to scheduling, bidding procedures and other factors. They do not include costs for development of bid specifications or contractor surveillance and air monitoring expenses.

Work which disturbs asbestos-containing materials could result in airborne fiber releases and exposures to workers and building occupants. OSHA regulations require air sampling to document worker exposures to asbestos whenever these materials are disturbed, as well as training for all workers who perform such work. State and federal environmental regulations also apply to work which damages the materials during demolition. In Ohio, if more than 50 SF or 50 LF of friable regulated asbestos-containing materials must be removed using methods which may damage them, a certified asbestos abatement contractor would be required for this work. Advance notification (ten working days) is also required prior to the start of removal and building demolition.

Based on the results, Helix Environmental, Inc. recommends that:

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3. **Air sampling should be performed during any work which disturbs the integrity of identified asbestos-containing materials, in accordance with OSHA regulations.** While disturbance of insulation within fire doors is unlikely, if it occurs, air sampling is recommended. Air monitoring should be performed by experienced industrial hygienists under the direction of a Certified Industrial Hygienist to document airborne exposures to asbestos inside and outside of the work area, before, during and after the abatement work. Certified personnel and laboratories should be used to provide adequate documentation of airborne fiber levels. Records of the abatement operation should be maintained for a minimum of thirty years.

4. **Provide ten working-day advance notification to the Regional Air Pollution Control Agency prior to the start of demolition.** Notification is required by U. S. EPA regulations (40 CFR 61M) even if no asbestos-containing building materials have been identified in the building, in order to allow regulatory officials to reinspect the building if needed.

8. APPENDICES

APPENDIX A: ROOM-BY-ROOM INVENTORY OF ASSUMED ASBESTOS-CONTAINING MATERIALS

HELIX ENVIRONMENTAL, INC.

ASSUMED ACBM RECORD

PROJECT NO.	BUILDING NO./NAME	PAGE
3200	Morand Building 31	
	SAMPLE AREA	DATE 7/29/02

TYPE OF MATERIAL: ☐ CEILING TILES ☐ FLOOR TILES/FLOORING ☐ THERMAL SYS. INSUL. ☒ SURFACING ☐ MISCELLANEOUS

INSPECTORS: R. Pocklington, CE Day

HSA CODE	CONDITION	DESCRIPTION / AMOUNT	LOCATION
	Poor	Sprayed on Insulation, White Fibrous SF	Area 182 (inside Bldg.
		"	

NOTES: Fiberglass Pipe & Jt. TS/ Overhead

HELIX ENVIRONMENTAL, INC.

ASSUMED ACBM RECORD

PROJECT NO.	BUILDING NO./NAME	PAGE
3200	Mound Bldg 51	
	SAMPLE AREA	DATE 7/24/02

TYPE OF MATERIAL: ☐ CEILING TILES ☐ FLOOR TILES/FLOORING ☐ THERMAL SYS. INSUL. ☐ SURFACING ☒ MISCELLANEOUS

INSPECTOR(S): R. A. Goehlich

HSA CODE	CONDITION	DESCRIPTION / AMOUNT	LOCATION
	Fair	Hard Plaster, Two Layer 120 SF	Inside Walls of Rm 3 (Fire Service Rm)

NOTES: Only on interior walls of Room -

APPENDIX B: SAMPLE DATA SHEETS

904-027455

HELIX ENVIRONMENTAL, INC.

1 East Stewart Street • Dayton, Ohio 45409 • (937) 226-0650 • www.helixenv.com
FAX – (937) 226-0653 • helix@helixenv.com

LABORATORY: SCHNEIDER
DATE SAMPLED: 7-24-02
RUSH – YES OR (NO) DATE REQUIRED: [redacted]
LOCATION: BARAMICROR MOUND
CONTRACTOR/CLIENT: BWXT
BUILDING: BLD 31
INSPECTOR: CAMERON DAY RALPH FRIEDRICH
JOB NUMBER: 3200

BULK SAMPLE DATA SHEET

ANALYSES REQUESTED: [redacted]

LAB SAMPLE NO.	HELIX SAMPLE ID NUMBER	AMOUNT	REPRESENTATIVE SAMPLE LOCATION	MATERIAL DESCRIPTION	FRIABLE/ NON	CONDITION	COMMENTS
	3200 7-24-11		NORTH WEST CORNER	SPRAYED ON FIRE PROOFING	F	POOR	
	3200 7-24-12		WEST WALL MIDDLE	SPRAYED ON FIRE PROOFING	F	POOR	
	3200 7-24-13		SOUTH WEST CORNER	SPRAYED ON FIRE PROOFING	F	POOR	
	3200 7-24-14		SOUTH WALL WEST SIDE	SPRAYED FIRE PROOFING	F	POOR	
	3200 7-24-15		SOUTH WALL EAST SIDE	SPRAYED ON FIRE PROOFING	F	POOR	
	3200 7-24-16		EAST WALL MIDDLE	SPRAYED ON FIRE PROOFING	F	POOR	
	3200 7-24-17		EAST WALL NORTH END	SPRAYED ON FIRE PROOFING	F	POOR	
	3200 7-24-18		NORTH WALL EAST SIDE	SPRAYED ON FIRE PROOFING	F	POOR	
	3200 7-24-19		NORTH WALL WEST SIDE	SPRAYED ON FIRE PROOFING	F	POOR	
	3200 7-24-20		RM 3 FIRE SERVICE ~~[illegible]~~ WEST SIDE TOP CORNER	1 LAYER HARD PLASTER	N	FAIR	
	3200 7-24-21		RM 3 FIRE SERVICE NORTH WALL	" "	N	FAIR	
	3200 7-24-22		RM 3 FIRE SERVICE WEST WALL	" "	N	FAIR	

THIS IS A CHAIN OF CUSTODY DOCUMENT. PLEASE COMPLETE, SIGN AND DATE. PLEASE RETURN ORIGINAL TO HELIX ENVIRONMENTAL, INC.

RECD	RELINQUISHED BY:	COMPANY:	DATE/TIME	RECD	RELINQUISHED BY:	COMPANY:	DATE/TIME
1	Cameron E Day	Helix Env	7-24-02 / 5:00 PM	3			
RECD	RELINQUISHED BY:	COMPANY:	DATE/TIME	RECD	RELINQUISHED BY:	COMPANY:	DATE/TIME

4-PLM EHS 07-02-3458

SAMPLE C... TION

HELIX ENVIRONMENTAL, INC.

1 East Stewart Street ♦ Dayton, Ohio 45409 ♦ (937) 226-0650 ♦ www.helixenv.com
FAX – (937) 226-0653 ♦ helix@helixenv.com

LABORATORY: EHS LLC
DATE SAMPLED: 7/22/02
RUSH – YES OR (NO) DATE REQUIRED: 7/25/02
LOCATION: Miamisburg, Ohio
CONTRACTOR/CLIENT: BWXTO
BUILDING: Mound Bldg 98
INSPECTOR: K. Groethlich, CEDay
JOB NUMBER: 3200

BULK SAMPLE DATA SHEET | ANALYSES REQUESTED: Asbestos PLM

LAB SAMPLE NO.	HELIX SAMPLE ID NUMBER	AMOUNT	REPRESENTATIVE SAMPLE LOCATION	MATERIAL DESCRIPTION	FRIABLE/ NON	CONDITION	COMMENTS
	3200-7-22-150A	130cc	Garage Rm 115, SE Corner	2'x4' Susp. Ceiling Tile, Texturized	N	Good	
	3200-7-24-140A		BLD 31, SOUTH WALL WEST SIDE	SPRAYED ON FIRE PROOFING	F	POOR	
23	3200-7-24-010A		BLD 80, RM 8 WEST WALL DRAIN PENETRATION	DRYWALL + JOINT COMPOUND	N	FAIR	
24	3200-7-24-520A		BLD 46, RM 5 MEZZANINE ABOVE RM 3	HARD PIPE TAPE	F	GOOD	
25							
			7/25/02 9:30				

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APPENDIX C: ANALYTICAL RESULTS

SCHNEIDER LABORATORIES

INCORPORATED

2512 W. Cary Street • Richmond, Virginia • 23220-5117

804-353-6778 • 800-785-LABS (5227) • (FAX) 804-353-6928

Excellence in Service and Technology

AIHA/ELLAP 100527, NVLAP 10150-0, NYELAP/NELAC 11413, CAELAP 2078, NC 593, SC 93003

LABORATORY ANALYSIS REPORT

Asbestos Identification by EPA Method 600/R-93/116

ACCOUNT: 904-02-1455
CLIENT: HELIX ENVIRONMENTAL
ADDRESS: 1 East Stewart Street Ste B
DAYTON, OH 45409-2624
PO NO.:
PROJECT NAME: Bldg. 31
PROJECT NO.: 3200
JOB LOCATION: Miamisburg Mound

DATE COLLECTED: 07/24/2002
DATE RECEIVED: 07/25/2002
DATE ANALYZED: 07/26/2002
DATE REPORTED: 07/26/2002

Client Sample No.	SLI Sample/ Layer ID	Sample Identification/ Layer Name	Asbestos Detected (Yes/No)	Sample Description
3200-7-24-11	2350382	NW corner		
	Layer 1:	Fireproofing	No	White, Fibrous
	100% Non-Asbestos		MINERAL/GLASS WOOL 88%, NON FIBROUS MATERIAL 12%	
3200-7-24-12	2350383	W wall middle		
	Layer 1:	Fireproofing	No	White, Fibrous
	100% Non-Asbestos		MINERAL/GLASS WOOL 88%, NON FIBROUS MATERIAL 12%	
3200-7-24-13	2350384	SW corner		
	Layer 1:	Fireproofing	No	White, Fibrous
	100% Non-Asbestos		MINERAL/GLASS WOOL 90%, NON FIBROUS MATERIAL 10%	
3200-7-24-14	2350385	S wall W side		
	Layer 1:	Fireproofing	No	White, Fibrous
	100% Non-Asbestos		MINERAL/GLASS WOOL 90%, NON FIBROUS MATERIAL 10%	
3200-7-24-15	2350386	S wall E side		
	Layer 1:	Fireproofing	No	White, Fibrous
	100% Non-Asbestos		MINERAL/GLASS WOOL 87%, NON FIBROUS MATERIAL 13%	

Samples analyzed by the EPA Test Method are subject to the inherent limitations of light microscopy including interference by matrix components. Gravimetric reduction and correlative analyses are recommended for all non-friable, organically bound materials. For calibrated visual estimate, 1% is the concentration at which there is a quantitative uncertainty. This report relates only to the items tested, must not be reproduced except in full with the approval of the lab, and must not be used to claim NVLAP or other government agency endorsement.

Client Sample No.	SLI Sample/ Layer ID	Sample Identification/ Layer Name	Asbestos Detected (Yes/No)	Sample Description
3200-7-24-16	2350387	E wall middle		
	Layer 1:	Fireproofing	No	White, Fibrous
	100% Non-Asbestos		MINERAL/GLASS WOOL 85%, NON FIBROUS MATERIAL 15%	
3200-7-24-17	2350388	E wall N end		
	Layer 1:	Fireproofing	No	White, Fibrous
	100% Non-Asbestos		MINERAL/GLASS WOOL 88%, NON FIBROUS MATERIAL 12%	
3200-7-24-18	2350389	N wall E side		
	Layer 1:	Fireproofing	No	White, Fibrous
	100% Non-Asbestos		MINERAL/GLASS WOOL 88%, NON FIBROUS MATERIAL 12%	
3200-7-24-19	2350390	N wall W side		
	Layer 1:	Fireproofing	No	White, Fibrous
	100% Non-Asbestos		MINERAL/GLASS WOOL 85%, NON FIBROUS MATERIAL 15%	
3200-7-24-20	2350391	Rm 3 fire service W		
	Layer 1:	Base Coat	No	Beige, Granular
	100% Non-Asbestos		CELLULOSE FIBER < 1%, NON FIBROUS MATERIAL 100%	
	Layer 2:	Plaster	No	White, Granular
	100% Non-Asbestos		NON FIBROUS MATERIAL 100%	
3200-7-24-21	2350392	Rm 3 fire service N		
	Layer 1:	Base Coat	No	Beige, Granular
	100% Non-Asbestos		NON FIBROUS MATERIAL 100%	
	Layer 2:	Plaster	No	White, Granular
	100% Non-Asbestos		NON FIBROUS MATERIAL 100%	
3200-7-24-22	2350393	Rm 3 fire service W		
	Layer 1:	Base Coat	No	Beige, Granular
	100% Non-Asbestos		NON FIBROUS MATERIAL 100%	
	Layer 2:	Plaster	No	White, Granular
	100% Non-Asbestos		NON FIBROUS MATERIAL 100%	

ANALYST: KATHERINE M. CHARLES
Total no. of pages in report = 2

REVIEWED BY Lori A. Perez, Ana

Samples analyzed by the EPA Test Method are subject to the inherent limitations of light microscopy including interference by matrix components. Gravimetric reduction and correlative analyses are recommended for all non-friable, organically bound materials. For calibrated visual estimate, 1% is the concentration at which there is a quantitative uncertainty. This report relates only to the items tested, must not be reproduced except in full with the approval of the lab, and must not be used to claim NVLAP or other government agency endorsement.

ENVIRONMENTAL HAZARDS SERVICES, L.L.C.

7469 WHITE PINE ROAD - RICHMOND, VA 23237
804-275-4788 FAX 804-275-4907

BULK ASBESTOS SAMPLE ANALYSIS SUMMARY

CLIENT: Helix Environmental, Inc.
1 E. Stewart Street, Suite B
Dayton, OH 45409-2624

DATE OF RECEIPT: 25 JUL 2002
DATE OF ANALYSIS: 29 JUL 2002
DATE OF REPORT: 29 JUL 2002

CLIENT NUMBER: 36-2170 A
EHS PROJECT #: 07-02-3458
PROJECT: Miamisburg, Ohio; Mound Bldg 98; 3200

EHS SAMPLE #	CLIENT SAMPLE #/ LABORATORY GROSS DESCRIPTION	% ASBESTOS	OTHER MATERIALS
01	3200-7-22-15QA/ White Powder; Brown Fib.	NAD	10% Cellulose 90% Non-Fibrous
02	3200-7-24-14QA/ White Fib.	NAD	95% Fibrous Glass 5% Non-Fibrous
03	3200-7-24-01QA/ Brown Fib.; White Powder	NAD	10% Cellulose 90% Non-Fibrous
04	3200-7-24-32QA/ Gray Powder	NAD	10% Cellulose 15% Fibrous Glass 75% Non-Fibrous

QC SAMPLE: M11992-1

QC BLANK: SRM 1866 Fiberglass

REPORTING LIMIT: 1% Asbestos

METHOD: Polarized Light Microscopy, EPA Method 600/R-93/116 *

ANALYST: Laura Holder

Reviewed By Authorized Signatory: Howard S. Va

Howard Varner, Laboratory Director
Irma Faszewski, Quality Assurance Coordinator
David Xu, MS, Senior Chemist
Feng Jiang, MS, Senior Geologist
Michael A. Mueller, Quality Assurance Manager

ENVIRONMENTAL HAZARDS SERVICES, L.L.C.

CLIENT NUMBER: 36-2170 A
EHS PROJECT #: 07-02-3458
PROJECT: Miamisburg, Ohio; Mound Bldg 98; 3200

Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided l the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Governmer This report shall not be reproduced except in full, without the written consent of Environmental Hazards Services, L.L.C. Californ Certification #2319 NY ELAP #11714. All information concerning sampling location, date, and time can be found on Chain-(Custody. Environmental Hazards Services, L.L.C. does not perform any sample collection.

Environmental Hazards Services, L.L.C. recommends reanalysis by point count (for more accurate quantification) or Transmissi Electron Microscopy (TEM), for enhanced detection capabilities) for materials regulated by the EPA NESHAP (National Emissi Standards for Hazardous Air Pollutants) and found to contain less than ten percent (<10%) asbestos by polarized light microsco (PLM). Both services are available for an additional fee.

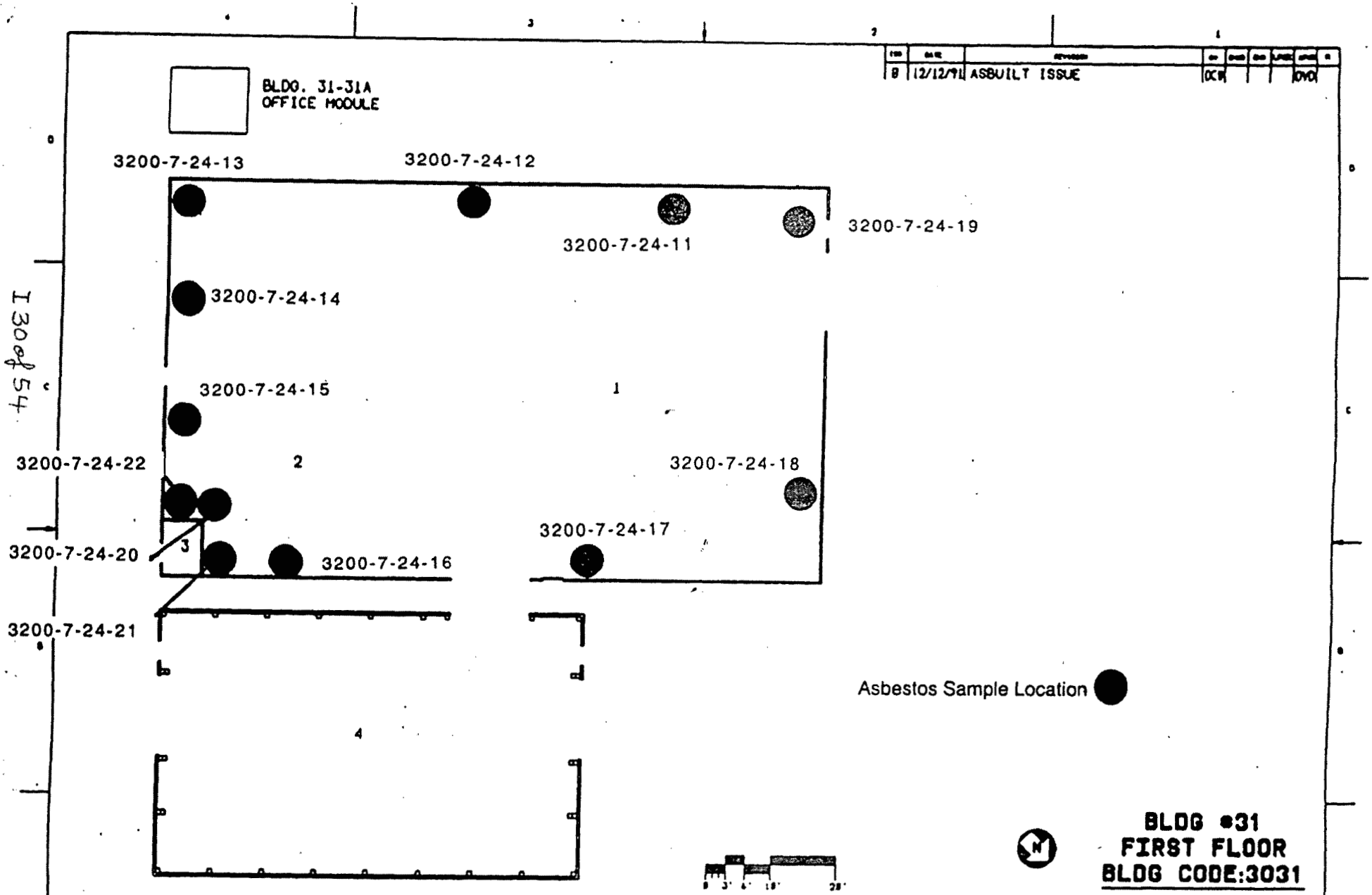
* All California samples analyzed by Polarized Light Microscopy, EPA Method 600/M4-82-020, Dec. 1982.

LEGEND	NAD = no asbestos detected
	SCF = suspected ceramic fibers

plm1.dot/07JAN2002/ pd

APPENDIX D: SAMPLE LOCATIONS

8	12/12/91	ASBUILT ISSUE	



BLDG #31
FIRST FLOOR
BLDG CODE:3031

MOUND FACILITY
BUILDING 31
MIAMISBURG, OHIO

TITLE	BLDG #31 FLOOR PLANS		
UNCLASSIFIED	C	FSC911243	12335

I 30 of 54

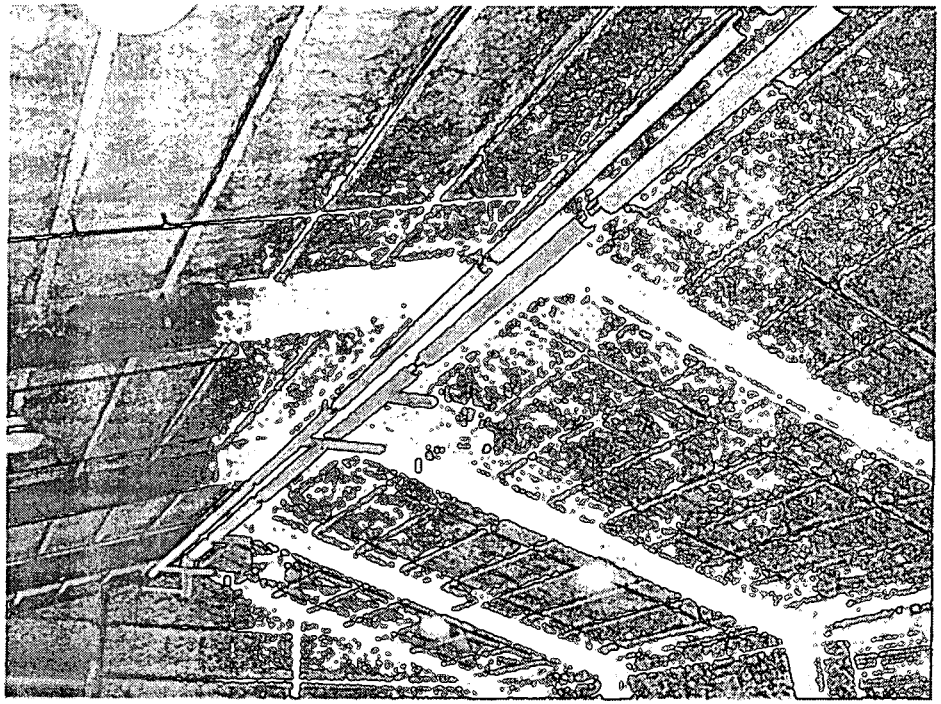
APPENDIX E: PHOTO LOG AND PHOTOGRAPHS

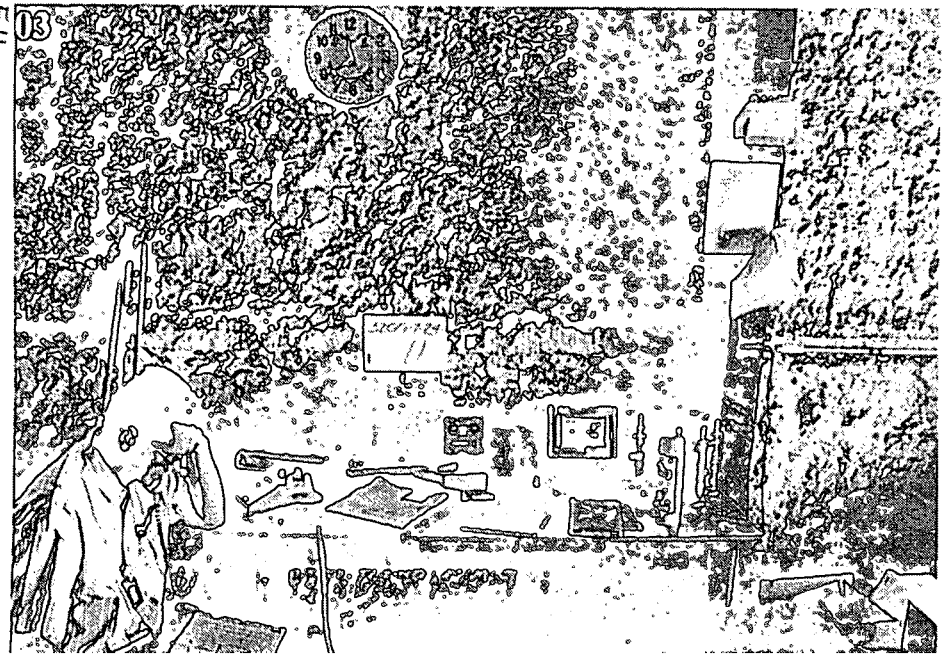
Photo Log Building 31

Photo	Description
01	Department of Energy Mound Facility, Miamisburg, Ohio, Building 31, Room Number 1, showing fiberglass TSI in the North end of building.
02	Department of Energy Mound Facility, Miamisburg, Ohio, Building 31, Room Number 1, showing fiberglass TSI in the South end of building.
03	Department of Energy Mound Facility, Miamisburg, Ohio, Building 31, showing sprayed-on fireproofing sampling location, Southeast corner, Sample 3200-7-24-11.
04	Department of Energy Mound Facility, Miamisburg, Ohio, Building 31, Room Number 1, showing sprayed-on fireproofing sampling location east wall middle, Sample 3200-7-24-12.
05	Department of Energy Mound Facility, Miamisburg, Ohio, Building 31, Room Number 1, showing sprayed-on fireproofing sampling location northeast corner, Sample 3200-7-24-13.
06	Department of Energy Mound Facility, Miamisburg, Ohio, Building 31, Room Number 1, showing sprayed-on fireproofing sampling location north wall east side, Sample 3200-7-24-14.
07	Department of Energy Mound Facility, Miamisburg, Ohio, Building 31, Room Number 1, showing sprayed-on fireproofing sampling location north wall middle, Sample 3200-7-24-15.
08	Department of Energy Mound Facility, Miamisburg, Ohio, Building 31, Room Number 1, showing sprayed-on fireproofing sampling location west wall north end, Sample 3200-7-24-16.
09	Department of Energy Mound Facility, Miamisburg, Ohio, Building 31, Room Number 1, showing sprayed-on fireproofing sampling location west wall center, Sample 3200-7-24-17.
10	Department of Energy Mound Facility, Miamisburg, Ohio, Building 31, Room Number 1, showing sprayed-on fireproofing sampling location south wall west side, Sample 3200-7-24-18.
11	Department of Energy Mound Facility, Miamisburg, Ohio, Building 31, Room Number 1, showing sprayed-on fireproofing sampling location south wall east side, Sample 3200-7-24-19.
12	Department of Energy Mound Facility, Miamisburg, Ohio, Building 31, Room Number 3 interior, side of wall showing hard plaster sampling location at east side, top corner of fire service room, Sample 3200-7-24-20.
13	Department of Energy Mound Facility, Miamisburg, Ohio, Building 31, Room Number 3, showing hard plaster sampling location at south wall of fire service room, Sample 3200-7-24-21.
14	Department of Energy Mound Facility, Miamisburg, Ohio, Building 31, Room Number 3, showing hard plaster sampling location at east wall of fire service room, Sample 3200-7-24-22.

Photo	Description
15	Department of Energy Mound Facility, Miamisburg, Ohio, Building 31, Room Number 3, showing interior of fire service room.
16	Department of Energy Mound Facility, Miamisburg, Ohio, Building 31, Room Number 3, showing detail of interior of fire service room with plywood interior walls
17	Department of Energy Mound Facility, Miamisburg, Ohio, Building 31 exterior from southeast.
18	Department of Energy Mound Facility, Miamisburg, Ohio, Building 31 exterior from west.

01

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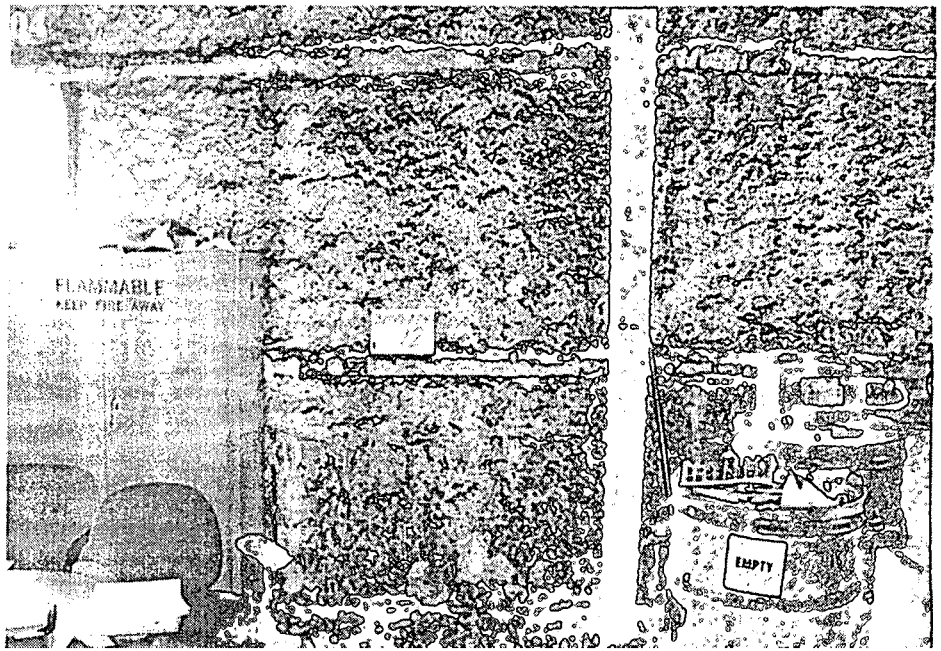
FLAMMABLE
KEEP FIRE AWAY
EMPTY

05

06

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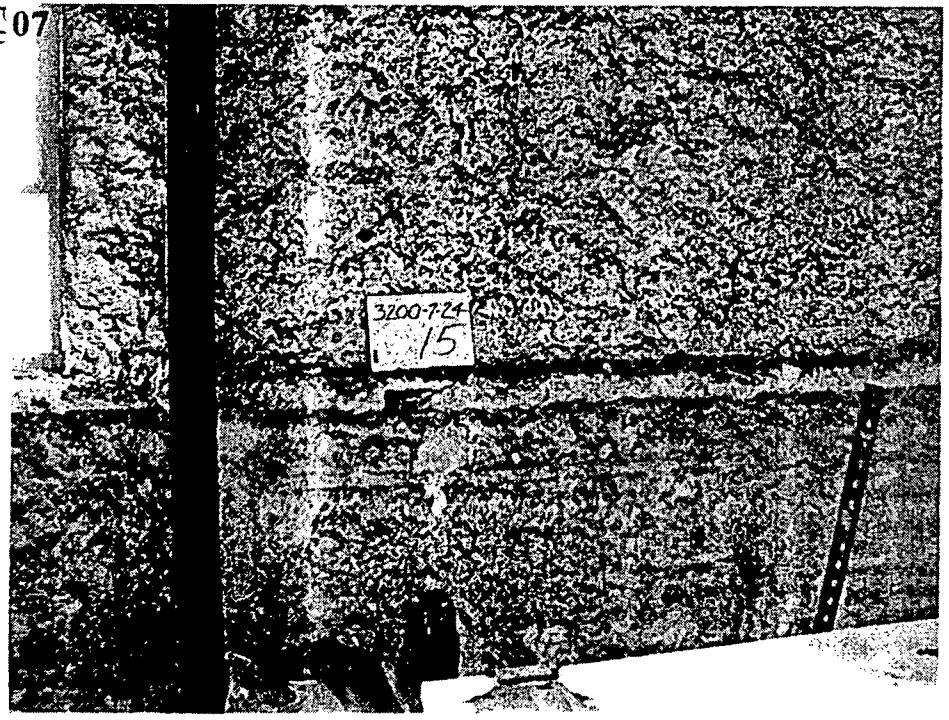

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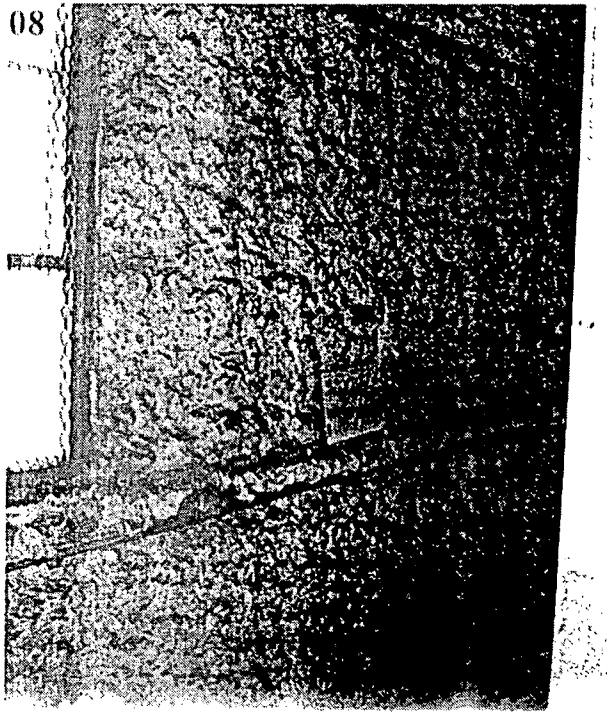

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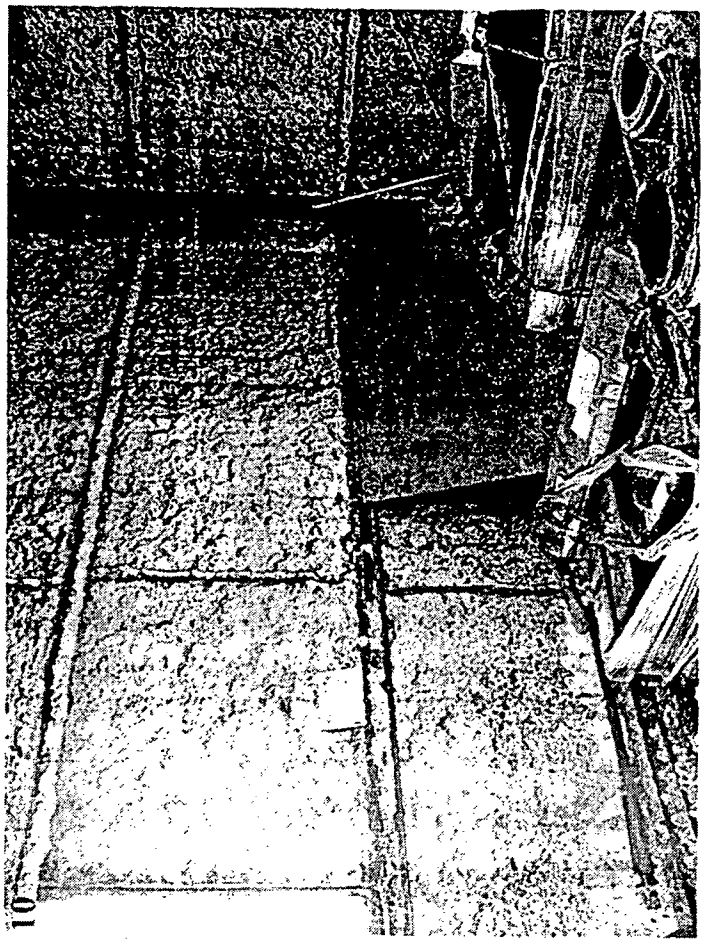

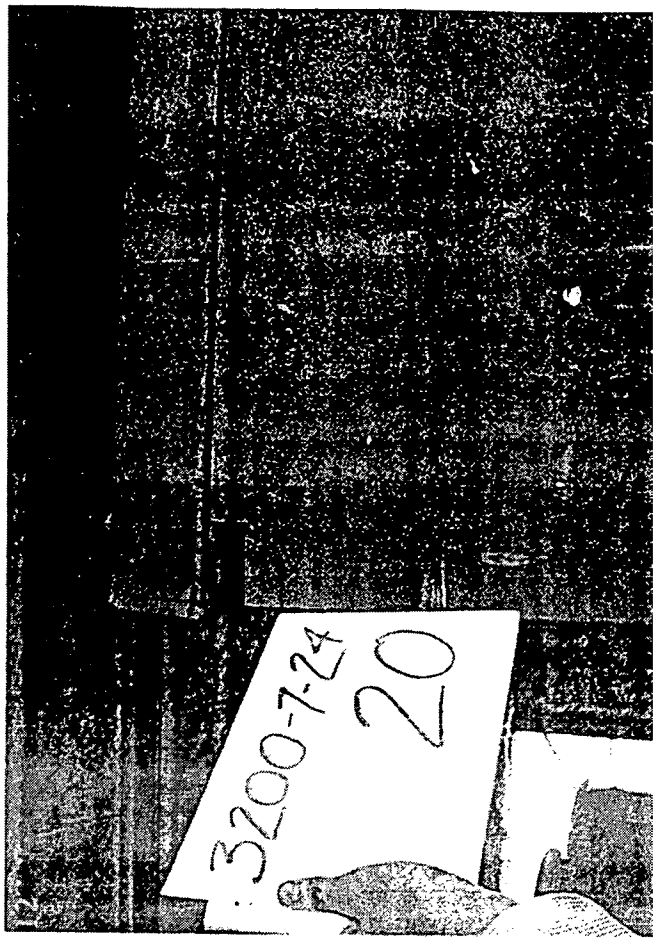
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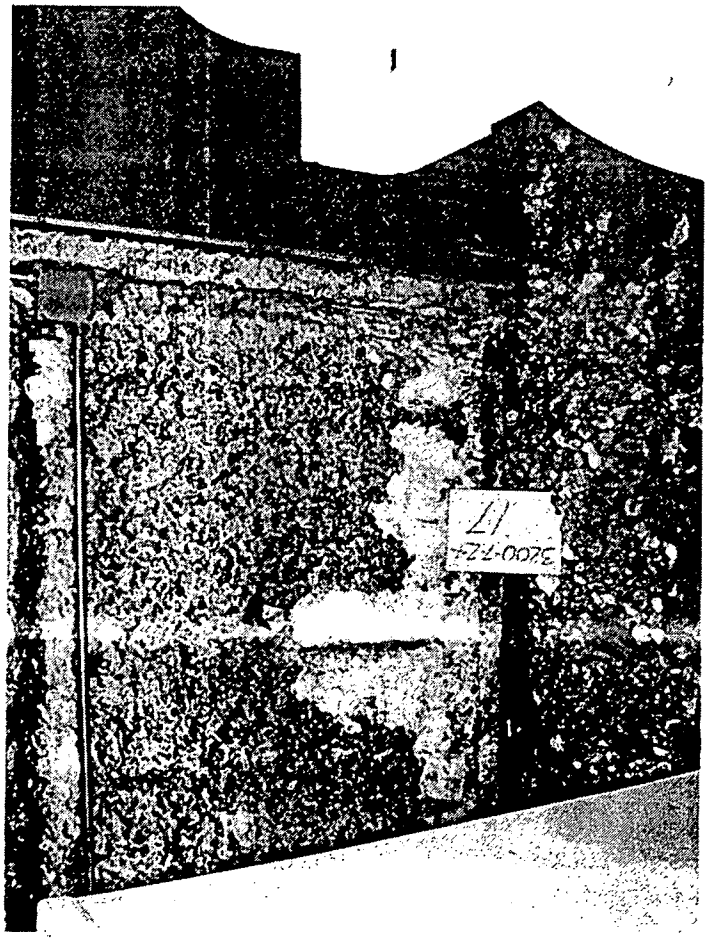
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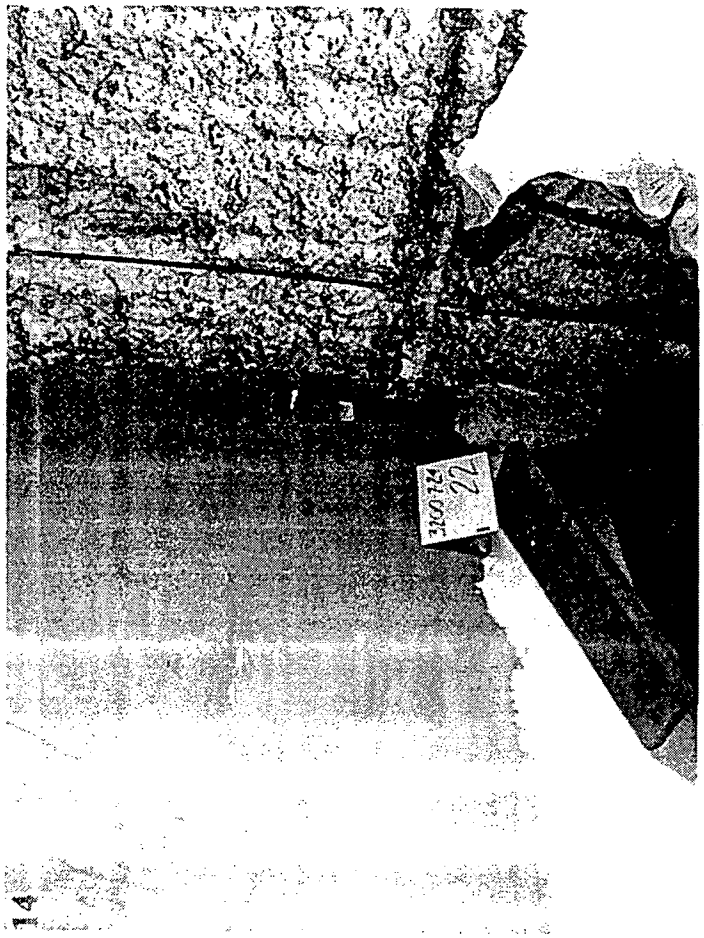
19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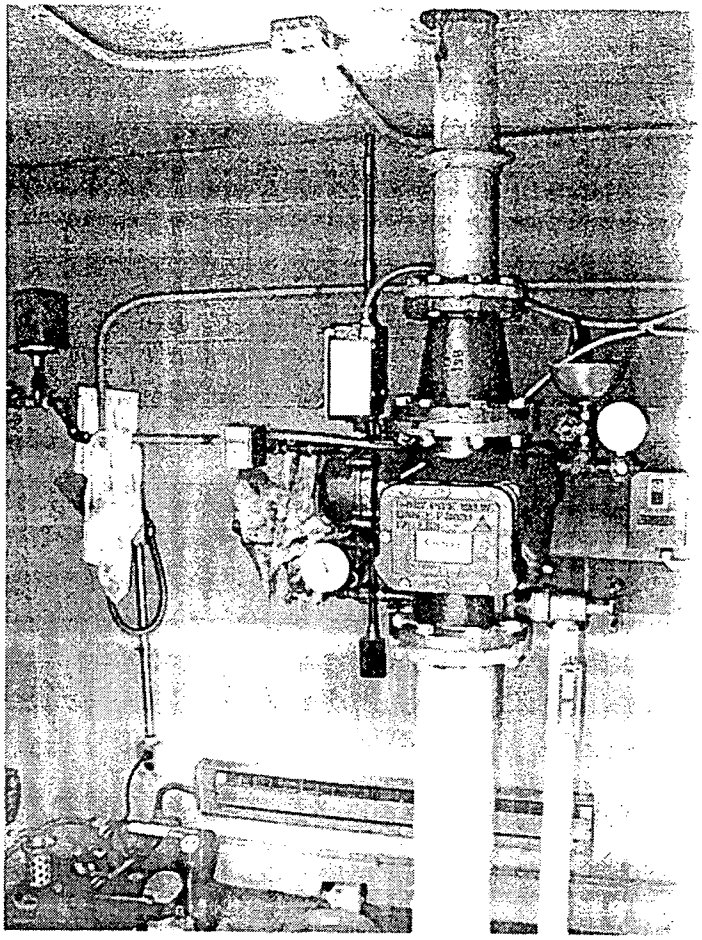

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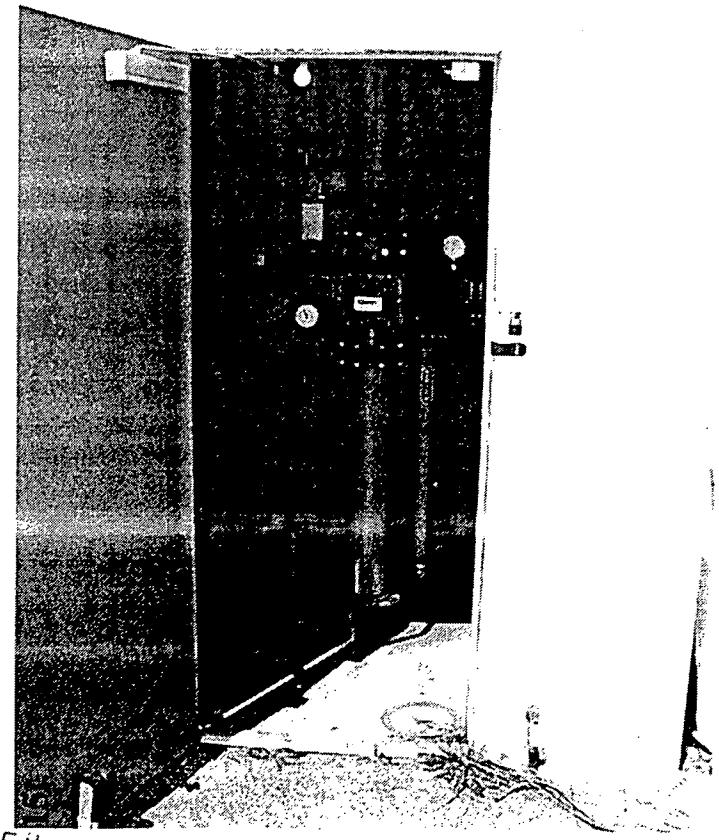

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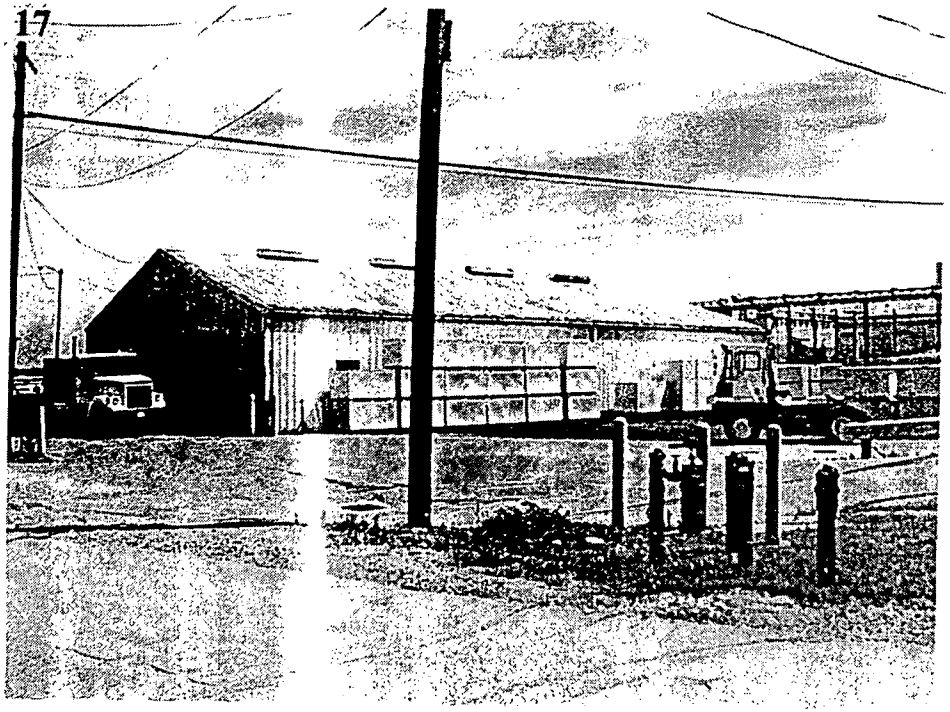

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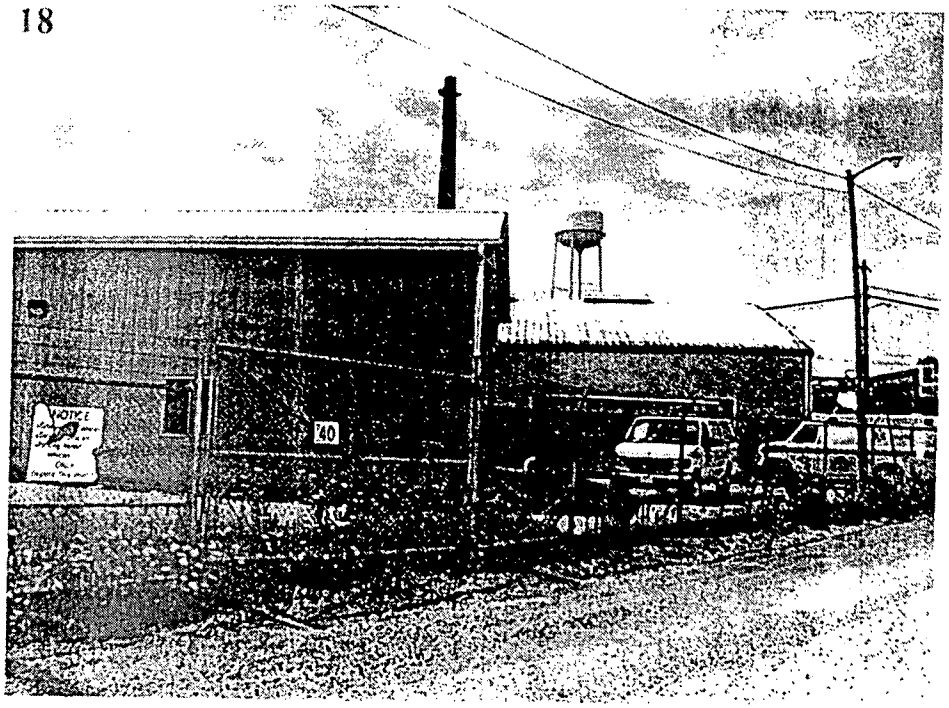

HELIX ENVIRONMENTAL, INC.

PRE-DEMOLITION ASBESTOS INSPECTION BUILDING 31A MOUND FACILITY. MIAMISBURG, OHIO

Prepared for

Mr. Dave Pratt, Senior Buyer
BWXT of Ohio, Inc.
P.O. Box 3030, OSE 216
1 Mound Road
Miamisburg, Ohio 45343-3030

Prepared by

HELIX ENVIRONMENTAL, INC.
1 East Stewart Street
Dayton, Ohio 45409

Ralph A. Froehlich, CIH, CSP, QEP
Certified Industrial Hygienist No. AP-2631

Report Date: Aug., 2002

Helix Job No. 3200

THIS REPORT CONTAINS INFORMATION ON THE ASBESTOS CONTENT OF BUILDING MATERIALS WHICH IS REQUIRED TO BE MAINTAINED FOR THE LIFE OF THE BUILDING. THIS REPORT MUST BE PROVIDED TO SUBSEQUENT BUILDING OWNERS AS REQUIRED BY 29 CFR 1926.1101

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1.	EXECUTIVE SUMMARY	1
2.	BACKGROUND	2
3.	INSPECTION AND SAMPLING PROCEDURES	3
4.	ANALYTICAL PROCEDURES	4
5.	APPLICABLE STANDARDS	5
6.	ANALYTICAL RESULTS	7
7.	DISCUSSION AND RECOMMENDATIONS	8
8.	APPENDICES	9

PRE-DEMOLITION ASBESTOS INSPECTION
BUILDING 31A, MOUND, MIAMISBURG, OHIO
JULY, 2002

1. EXECUTIVE SUMMARY

On July 10, 2002, Helix Environmental, Inc. contracted with BWXT of Ohio, Inc. to conduct an asbestos-containing building materials inspection of Building 31A and other buildings at the Mound Site for the U.S. Department of Energy in Miamisburg, Ohio. The asbestos inspection was necessary to identify, quantify and evaluate the condition of regulated asbestos-containing building materials (RACBM) prior to the start of building demolition. No previous inspection for asbestos containing building materials had been conducted for this building. This report summarizes the inspection procedures, sampling and analytical methods, and analytical results, with recommendations for consideration.

No suspect asbestos-containing materials were observed in Building 31A, and no bulk samples of suspect materials were collected or analyzed as part of this inspection.

Even though no suspect asbestos-containing materials were found in Building 31A, advance notification (ten working days) is still required prior to the start of removal and building demolition. The notification should be sent to the Regional Air Pollution Control Agency, part of the Montgomery County Combined Health District in Dayton, Ohio.

Based on the results, Helix Environmental, Inc. recommends that:

1. **BWXT of Ohio, Inc. maintain copies of the information from this asbestos inspection and sampling with Building 31A records.** This information must be maintained for the duration of ownership of the building, and must be transferred to subsequent owners. This may most easily be accomplished by maintaining a copy of this report in a secure location with other building records.

2. **Provide ten working-day advance notification to the Regional Air Pollution Control Agency prior to the start of demolition.** Notification is required by U. S. EPA regulations (40 CFR 61M) even if no asbestos-containing building materials have been identified in the building, in order to allow regulatory officials to reinspect the building if needed.

2. BACKGROUND

On July 10, 2002, Helix Environmental, Inc. contracted with BWXT of Ohio, Inc. to conduct an asbestos-containing building materials inspection of Building 31A at the Mound Site for the U.S. Department of Energy in Miamisburg, Ohio. The asbestos inspection was necessary to identify, quantify and evaluate the condition of regulated asbestos-containing building materials (RACBM) prior to the start of building demolition.

The inspection and sampling were performed on July 24, 2002 by Ralph Froehlich, CIH, CSP, QEP. and Mr. Cameron Day, Industrial Hygienist. Mr. Froehlich is a Certified Industrial Hygienist with more than twenty years experience in the fields of occupational and environmental health. Mr. Froehlich is certified by the Ohio Department of Health as an Asbestos Hazard Evaluation Specialist, Asbestos Hazard Abatement Specialist, and as an Asbestos Project Designer (Cert. Nos. 3074, 2112, and 60038, respectively). Mr. Day has over two years experience in the fields of occupational safety and health and is certified by the Ohio Department of Health as an Asbestos Hazard Evaluation Specialist (Cert. No. 33958).

Prior to the start of the inspection, Helix Environmental, Inc. received Rad Worker II training to enable them to enter radiologically-controlled areas. Radiation areas were present in Building 31A and all samples had to be screened by radiation technician prior to sampling. Helix Environmental, Inc. personnel met with the BWXTO Project Engineer prior to the start of the inspection.

Building 31A is a one-story 2650 SF wood framed metal-sided and roofed building, built in 1986. Currently, Building 31A is operational as a warehouse, but was not occupied at the time of inspection.

Helix Environmental, Inc. was directed to inspect the building to identify all suspect regulated asbestos-containing materials, and to sample and verify the asbestos content of these materials. Category I Nonfriable materials (resilient flooring materials, bituminous roofing materials, gaskets). were not sampled, in accordance with directions from Mr. Chris Alquist, BWXT of Ohio, Inc. In addition, Helix Environmental, Inc. was directed to assume that all fire doors contained asbestos.

3. INSPECTION AND SAMPLING PROCEDURES

No materials were identified as suspect asbestos-containing building materials, based on a room-by-room inspection of the building.

4. ANALYTICAL PROCEDURES

No bulk asbestos samples were collected or sent to the analytical laboratory for Polarized Light Microscopy (PLM) analysis.

No side-by-side QA/QC samples were delivered to the quality assurance/quality control laboratory for independent analysis to determine asbestos content by PLM.

5. APPLICABLE STANDARDS

Asbestos

The U.S. EPA has established regulations which apply to friable and potentially friable materials with asbestos content in excess of 1%, as determined by PLM. These regulations establish required notification, removal techniques, and disposal of regulated asbestos-containing materials. The Ohio EPA has established additional regulations paralleling those of the U.S. EPA. "Friable" means that a suspect material can be reduced to a powder by hand pressure when dry and denotes a material that is capable of releasing significant amounts of asbestos fibers to the air. Potentially-friable materials are those that may release asbestos fibers to the air if they are extensively damaged during demolition operations, and include Category I Nonfriable materials in poor condition and Category II Nonfriable materials. Category I Nonfriable materials include bituminous roofing materials, resilient flooring materials, and gaskets, where the asbestos is mixed in a resilient matrix. Category I Nonfriable materials may be left in buildings when they are demolished, if the materials are not in poor condition. Category II Nonfriable materials include all other non friable materials, and they must be removed from buildings prior to their demolition, since demolition activities may release significant amounts of asbestos into the air (40 CFR 61 Subpart M). The Ohio EPA has established equivalent regulations for Ohio.

Additionally, U. S. EPA has promulgated regulations governing the management of asbestos in public and non-profit private school buildings, grades K-12 (40 CFR 763.80 ff), which detail the sampling and analytical protocols followed during a school asbestos inspection, as well as additional requirements for the training and certification of professionals involved in the inspection and management of asbestos materials. The requirements for training and certification have been extended by congressional action to cover all persons involved in asbestos inspection, project design, supervision and abatement work, as part of the Asbestos School Hazard Abatement Reauthorization Act (ASHARA). U. S. EPA has also promulgated regulations for the protection of public sector workers (40 CFR 763.120)

The Occupational Safety and Health Administration (OSHA) revised its asbestos regulations to reduce the eight-hour Time-Weighted Average (TWA) Permissible Exposure Limit to 0.1 fibers/cc (29 CFR 1910.1001, 29 CFR 1926.1101). A 30-minute Excursion Limit of 1 fiber/cc is also included with the standards. Asbestos-containing materials are defined as those that contain more than 1% asbestos. These regulations include complex requirements for asbestos abatement, dividing the work with and around asbestos into four classes, with varying requirements for each

class. An additional requirement calls for building owners and managers to keep information on asbestos-containing materials with each building, until all asbestos-containing materials have been removed from the building.

The American Conference of Governmental Industrial Hygienists (ACGIH) has proposed an airborne eight-hour TWA Threshold Limit Value of 0.1 fibers/cc (2002 TLVs). ACGIH TLVs denote concentrations and conditions to which it is believed that nearly all workers may be repeatedly exposed day after day without adverse effect.

The National Institute for Occupational Safety and Health (NIOSH) identifies asbestos as an occupational carcinogen, and recommends that occupational exposures be "limited to the lowest feasible concentration."

The Ohio Department of Health has established additional regulations for asbestos abatement, including a certification program for asbestos supervisors, workers, inspectors and management planners, project designers, and air monitoring technicians. ODOH regulations also require contractors to be licensed, and require 10 working day advance notifications for asbestos abatement in amounts over 50 LF or 50 SF of friable asbestos-containing material (OAC 3701-34).

Montgomery County, Ohio has adopted local regulations which require advance notification when more than 50 SF or 50 LF of friable asbestos-containing building material is removed.

6. ANALYTICAL RESULTS

No samples were collected or analyzed as part of this inspection.

7. DISCUSSION AND RECOMMENDATIONS

No suspect asbestos-containing materials were observed in Building 31A, and no bulk samples of suspect materials were collected or analyzed as part of this inspection.

Even though no suspect asbestos-containing materials were found in Building 31A, advance notification (ten working days) is still required prior to the start of removal and building demolition. The notification should be sent to the Regional Air Pollution Control Agency, part of the Montgomery County Combined Health District in Dayton, Ohio.

Based on the results, Helix Environmental, Inc. recommends that:

1. **BWXT of Ohio, Inc. maintain copies of the information from this asbestos inspection and sampling with Building 31A records.** This information must be maintained for the duration of ownership of the building, and must be transferred to subsequent owners. This may most easily be accomplished by maintaining a copy of this report in a secure location with other building records.

2. **Provide ten working-day advance notification to the Regional Air Pollution Control Agency prior to the start of demolition.** Notification is required by U. S. EPA regulations (40 CFR 61M) even if no asbestos-containing building materials have been identified in the building, in order to allow regulatory officials to reinspect the building if needed.

8. APPENDICES

APPENDIX A: ROOM-BY-ROOM INVENTORY OF ASSUMED ASBESTOS-CONTAINING MATERIALS

HELIX ENVIRONMENTAL, INC.

ASSUMED ACBM RECORD

PROJECT NO.	BUILDING NO./NAME	PAGE
3200	Merrad Bldg 31A	
	SAMPLE AREA	DATE 7/24/02

TYPE OF MATERIAL
- ☐ CEILING TILES
- ☐ FLOOR TILES/FLOORING
- ☐ THERMAL SYS. INSUL.
- ☐ SURFACING
- ☐ MISCELLANEOUS

INSPECTOR(S) [illegible] Frohlich, C Day

HSA CODE	CONDITION	DESCRIPTION / AMOUNT	LOCATION
		No Suspect Materials Identified	
		in or on Bldg.	

NOTES Wood Interior Frame with sheet Metal Exterior Siding and Roof.

APPENDIX B: PHOTO LOG AND PHOTOGRAPHS

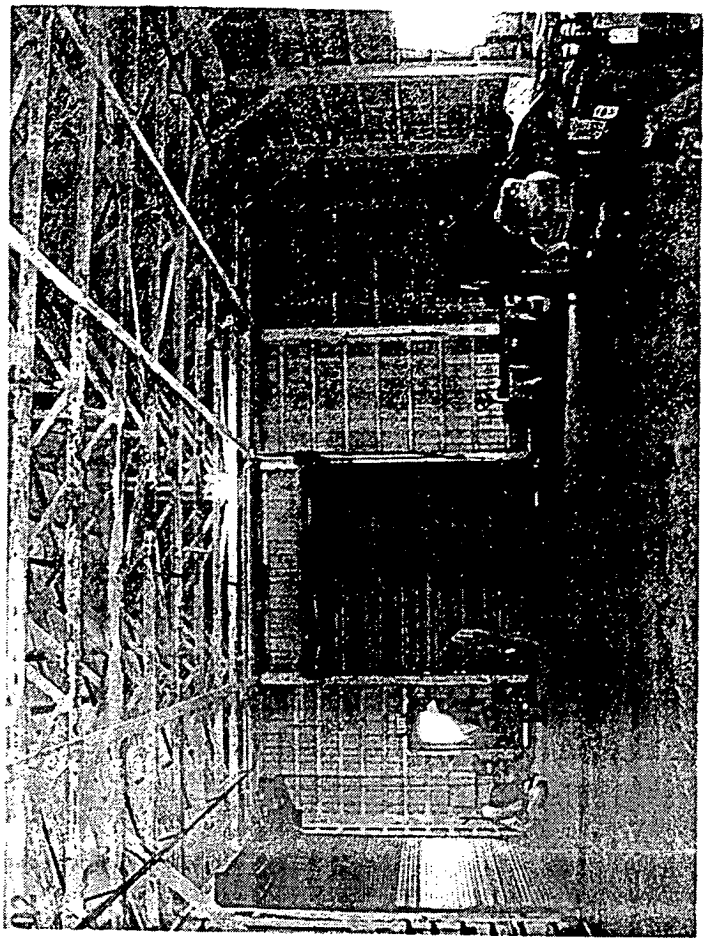
Photo Log Building 31A

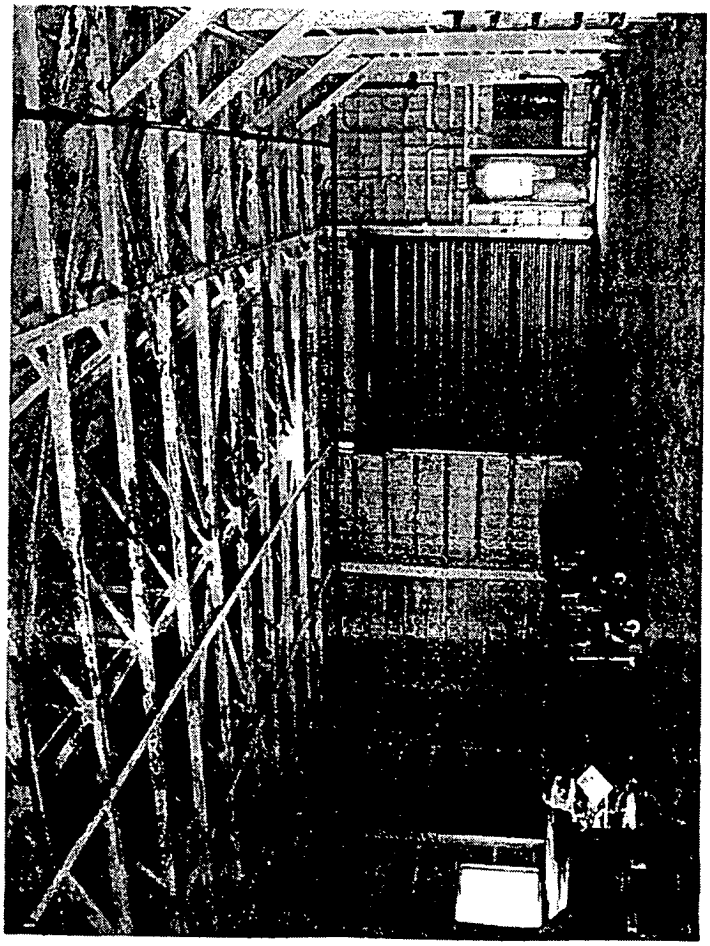
Photo Description

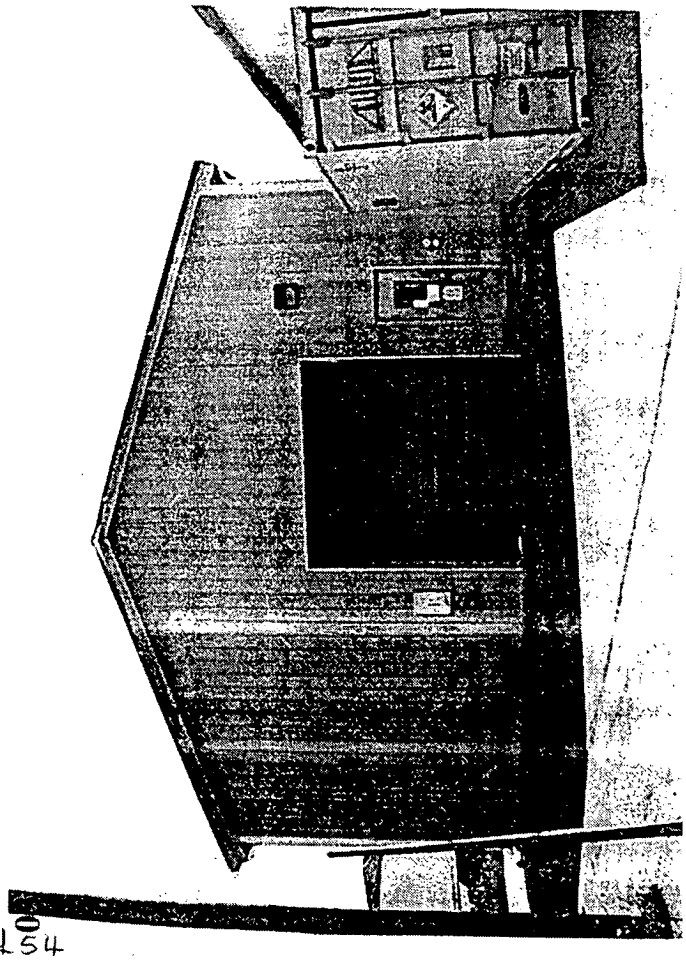
01 Department of Energy Mound Facility, Miamisburg, Ohio, Building 31A, showing white painted wood support trusses above overhead doors and wood wall framing.

02 Department of Energy Mound Facility, Miamisburg, Ohio, Building 31A, showing bare wood above overhead doors and white painted wood framing.

03 Department of Energy Mound Facility, Miamisburg, Ohio, Building 31A showing north view of exterior overhead door and metal siding and roof.







Appendix J

Lead Information

From: Christopher Ahlquist
To: Darnell, Val; Kramer, Donald
Date: 11/11/03 5:41PM
Subject: Buildings 31 & 31A

Don/Val -

For Buildings 31/31A asbestos and lead paint concerns, the following is provided for your use:

Asbestos

No previous asbestos survey information was found for Buildings 31/31A.

During July of 2002, Helix Environmental, Inc., under contract to BWXT of Ohio, Inc., performed a comprehensive walk-through survey of all areas of Buildings 31/31A in order to identify all asbestos-containing materials prior to demolition of the facility. During their survey Helix Environmental utilized Ohio Department of Health Certified Asbestos Hazard Evaluation Specialists as required by State regulations for individuals assessing asbestos-containing materials. Five (5) fire rated doors within Building 31 were assumed to contain asbestos and were identified as requiring removal prior to demolition; no asbestos-containing materials were identified in connection with Building 31A. The fire doors will be removed, packaged and labeled by asbestos worker-trained CH2M Hill personnel in accordance with NESHAP requirements prior to commencement of demolition activities.

Lead

No previous lead surveys or sampling data were found for Buildings 31/31A. Since the buildings are scheduled for imminent demolition, painted surfaces will be tested for lead content as planned work indicates the need for such testing in order to avoid worker exposure to lead. This restriction will be incorporated into work plans for which disturbance of paint is a possibility.

In accordance with guidance from Mound Waste Management, paint coatings should not result in a hazardous waste issue during the course of normal demolition by heavy-duty means.

These determinations were made by Mr. Christopher Ahlquist who is an Ohio Department of Health Licensed Lead Risk Assessor.

Let me know if I can be of further assistance,

Chris Ahlquist

Appendix K

Chemical Information

Chemicals and Products Used or Stored in Buildings 31 and 31A

Acetylene cylinder
Adhesive
Alkyd Paint
Chlorodifluoromethane
Dichlorodifluoromethane
Dichlorodifluoromethane/difluoromethane
Naphtha
Oxygen Cylinder, 1A
Paint Thinner
Propane

Historical documents for Buildings 31 and 31A did not provide a listing of standard janitorial and maintenance supplies that were used and stored in the buildings.

Appendix L

Soil Sampling, Vicinity

Appendix L of industrial demolition BDPs traditionally provides a graphic showing all historic soil sample locations within 15 feet of the perimeter of a building, tables for detected and non-detected compounds, and a table of all soil sample results above screening levels. However, since Buildings 31 and 31A, the asphalt staging area, and the metal grating are within the boundary of PRS 267 (binned a Removal Action), the soil data for the entire area has already been evaluated and is not included in the scope of this effort.

The contaminated soil in PRS 267 will be removed per a separate Removal Action. For information regarding the evaluation of the PRS 267 soil data and the Core Team recommendation for a Removal Action, please refer to Potential Release Site Package, PRS 267, Final, August 2003. For details of the soil removal work, please refer to Work Package #ER/ST-04-010, PRS 267 Soils Removal, February 2004. For details of the verification sampling and analysis, please refer to the Building 38 Area VSAP, Final, March 2004.

In this BDP, Appendix L provides Figure 24 from the Building 38 Area VSAP. This figure shows the soil results by location of the specific areas of contamination in the vicinity. The removal of contaminated soil at the locations shown on the graphic will commence after the completion of the building removal described in this BDP.

The soil below and around the truck dock is not within the PRS 267 boundary and has not been evaluated. As part of the building demolition project, soil sampling will be conducted per the Core Team approved Building 31 Dock Sampling and Analysis Plan (SAP). Verification of structure removal will be via photographs provided in the Structure OSC Report.

Per the FA SAP, **S0339** (total thorium = 12) was collected in 1984 & cannot be spatially located due to RSS ± 25' accuracy issue. RadCon walkover in 2002 of the entire area documented the vicinity of the sample to be below instrument background. A surface result of 12 would be found, if present, during a walkover survey. No action required.

C0039: Thorium = 5.6 @ 1.5'
9901: Pu-238 = 156 @ 4-7'
9909: Pu-238 = 141 @ 4-8'
Excavate required depths & verify base only for isotope causing dig. Locations already bounded.

SCR804 (Th-232 = 2.2) was collected in 1993 at a depth of 1.5'-1.5'. The sample depth conflicts with the symbology of a soil boring. Because the sample is located graphically on top of a storm catch basin, it was assumed the sample was from within the catch basin and not the nearby soil. Therefore, was not called out in the FA SAP or PRS Pkg as requiring action and not addressed herein. No action required.

SCR660:
Pu-238 = 63 @ 0'
Th-232 = 16.2 @ 0'
Removal of SCR660 was initiated during the PRS 266 RA but ceased when a corrugated pipe was uncovered that contained sediment @ 24.8 Th-232. Chase pipe to origin. Verify (Iso Th) per standard following RadCon deposting of dig.

B40 Th-232=2.5 @ 0-4'
B39 Th-232=10.7 @ 0-4'
☆ surface locations of elevated thorium (max. Th-232 = 152 pCi/g). Excavate borings to 4' and ☆ areas per RadCon monitoring. Verify per standard & provide sketch upon completion of dig.

SCR626:
Pu-238 = 238 @ 0'
Pu-238 = 91 @ 6'
Th-232 = 35.8 @ 0'
Th-232 = 18 @ 6'
Excavate point to 6'. Verify base & sides (Iso Pu & Th) following RadCon deposting of dig.

Note: Retain for inclusion in OSC Report soil sample results that may be collected by BOSS RadCon as part of demolition of and within the footprints of Bldgs. 31 & 31A and the concrete loading dock.

C0043:
Th-232=6.2 @ 1.5'
Th-232=2U @ 3'
Excavate to 1.5' and collect verification sample at base; offsite Iso Th analysis.
= 2.1 @ 0-0', other results same loc < 2.0.

B60/60A:
Th-232 = 14.6@ 0-1'
Th-232 = 6.6@ 0-4'
Ra-226 = 2.9@ 0-4'
Excavate boring & offset location to 4'. Verify base & sides (Iso Th) following RadCon deposting of dig. Preverification samples will document sufficiency of Ra-226 removal.

SCR714:
30 sets of Pu/Th data at 0-0' depth. Most recent day, highest results are Th-232 =1.6 & Pu-238 = 19; therefore no action required.

SCR734:
3 sets of Pu/Th data at 0-0' depth. All for same day, highest results are Th-232=2.1 & Pu-238 = 18; therefore no action required.

Sample > Cleanup Objective
Sample Detect
Sample Nondetect

25 0 25 50 75 100 Feet

Note: all results are in pCi/g

Environmental Restoration Geographic Information System

Figure 24: PRS 267 Anticipated Limits of Removal

23march04

Appendix M

Occurrence Reports

A search of the occurrence reporting system revealed six reports, all of which were minor and without environmental impact:

Building 31

- legacy contamination on pad outside WD Building (the stanchions of a trailer that was located on the pad were contaminated, and the trailer was moved to Building 31 for storage and disposal) (copy provided),
- Building 31, ruptured sprinkler line (copy provided), and
- boxes of contaminated soil slide off a flatbed truck during onsite transport (this incident did not take place in the vicinity of Buildings 31 or 31A).

Building 31A

- discovery of inadequate safety analysis,
- noncompliance with safety authorization basis for transuranic waste transfer (USQ), and
- leak in sprinkler system line in Building 31A (audible air leak coming from the 'dry' sprinkler fire suppression system. Leak was not large enough to activate the water release valve).

Eckramer
11-13-03

OH-MB-BWO-BWO06-1999-0005

Final Report

Occurrence Report

Waste Management Facilities

(Name of Facility)

Nuclear Waste Operations/Disposal

(Facility Function)

Mound Plant — Babcock and Wilcox of Ohio, Inc.

(Laboratory, Site, or Organization)

Name: HENDERSON, WILLIAM R
Title: FACILITY MANAGER - WASTE MANAGEMENT — **Telephone No.:** (937) 865-4242

(Facility Manager/Designee)

Name: HENDERSON, WILLIAM R
Title: FACILITY MANAGER - WASTE MANAGEMENT — **Telephone No.:** (937) 865-4242

(Originator/Transmitter)

Name: James N. Brogger — **Date:** 01/11/2000

(Authorized Classifier (AC))

1. Occurrence Report Number: OH-MB-BWO-BWO06-1999-0005

Legacy Contamination On Pad Outside WD Building

2. Report Type and Date: Final

	Date	Time
Notification:	11/10/1999	08:37 (MTZ)
Initial Update:	01/11/2000	10:50 (MTZ)
Latest Update:	01/11/2000	10:50 (MTZ)
Final:	01/24/2000	08:47 (MTZ)

3. Occurrence Category: Off-Normal

4. Number of Occurrences: 1 **Original OR:**

5. Division or Project: Babcock and Wilcox of Ohio

6. Secretarial Office: EM - Environmental Management

7. System, Bldg., or Equipment: WD South Pad Exterior to Room 15

8. UCNI?: No

9. Plant Area: Test Fire Valley

10. Date and Time Discovered: 11/09/1999 11:30 (ETZ)

M1 of 8

DC Kramer
11-13-03

11. Date and Time Categorized: 11/09/1999 12:30 (ETZ)

12. DOE Notification:

13. Other Notifications:

Date	Time	Person Notified	Organization
11/09/1999	15:30 (ETZ)	Chris White	DOE/MEMP

14. Subject or Title of Occurrence:

Legacy Contamination On Pad Outside WD Building

15. Nature of Occurrence:

01) Facility Condition
D. Loss of Control of Radioactive Material/Spread of Radioactive Contamination

16. Description of Occurrence:

On November 09, 1999 at 11:30 hours, Test Fire Valley (TFV) Radiological Point of Contact (RPOC) notified the WD/WDA Facility Manager (Waste Management) of a contamination event for an empty trailer that was being relocated. The trailer was located on an asphalt pad on the south side of WD adjacent to the exterior door of room 15 and the Rubb tent. The tires and stanchions of the trailer were sunk into the asphalt and left depressions when the trailer was moved. When the trailer was moved to stage for removal, in front of the Rubb tent, field surveys indicated fixed contamination on the front stanchions. The trailer was posted as a Controlled Area and Fixed Contamination Area.

Additional surveys where the trailer had been located included the pad depressions and a larger area around the pad. The exterior door to room 15 had a field survey fixed alpha reading of approximately 8,300 dpm/100cm2. This resulted in the Controlled Area and Fixed Contamination Area being expanded back to WD, from the trailer, while further surveys within this larger area were taken.

At 12:30 hours, both Waste Management and Test Fire Valley radiological and facility management personnel held a field meeting to assess the event.

At 13:30 hours, survey results for the trailer indicated that one stanchion had fixed alpha contamination of 150 dpm/100cm2 which is above the free release limit of 100 dpm/100cm2. The trailer is attached to the tractor and will remain posted within a controlled area pending disposition.

At 16:20 hours, surveys indicated that the highest recorded levels were 9,300 dpm/100cm2 alpha fixed contamination on the pad outside the exterior door to room 15. Based on gamma spectroscopy, it was verified the isotopes are transuranic. This meets the reporting criteria for transuranics for Group 01D(3) based on 10CFR835 Appendix D Total values.

A Facility Manager's Meeting was held on November 10, 1999 to gather information relevant to this event prior to the November 15 Critique Meeting. This included historical information that has been lost due to the numerous contractor and personnel changes during the last decade.

On November 10, 1999, and presented at the Facility Manager's Meeting, TFV RPOC was notified of historical Radiological Survey Data Sheets (RSDS) by TFV Radiological Engineer from August 11-12, 1999. This indicated fixed and removable contamination which required Controlled Area/Contamination Area postings. This was not done. Fixed alpha readings were as high as 8,300 dpm/100cm2. Readings above 100 dpm/100cm2 alpha action level were recorded from the exterior of room 15 (pad) eastward to the door area for room 12. Removeable alpha contamination (38 dpm/100cm2) above the 20 dpm/100cm2 alpha action level was located on the exterior door handle to room 15. The smear analysis flagged this as an action level, but no action was taken for posting.

A further search for historical radiological surveys discovered a survey from February 04, 1999 for the same area which indicated fixed contamination which required Controlled Area/Contamination Area postings. This was not done. Fixed alpha readings were as high as 6,000 dpm/100cm2. Readings above 100 dpm/100cm2 alpha action level were recorded from the exterior of room 15 (pad) eastward to the door area for room 12. Removeable alpha contamination above the 20 dpm/100cm2 alpha action level was not found.

M2 of 8

DC Kramer
11-13-03

17. Operating Conditions of Facility at Time of Occurrence:

Normal Radiological Survey Operations for Trailer Removal

18. Activity Category:

03 - Normal Operations

19. Immediate Actions Taken and Results:

A Control Area and Fixed Contamination Area was established from WD to the trailer, which includes the entire pad. The DOE Facility Representative was notified of the event. Surveys of the area and trailer were undertaken. The trailer stanchions were bagged. The trailer was moved to Building-31 for storage. The stanchions will either be removed or decontaminated.

20. Direct Cause:

3) Personnel Error
A. Inattention to Detail

21. Contributing Cause(s):

3) Personnel Error
C. Communication Problem

6) Management Problem
A. Inadequate Administrative Control

22. Root Cause:

6) Management Problem
C. Inadequate Supervision

NOTE:
PER CONVERSATION WITH CAROL ANDERSON OF THE WASTE MANAGEMENT GROUP ON 11/5/03, THE CONTAMINATED STANCHIONS WERE REMOVED FROM THE TRAILER AND WERE DISPOSED OF AS RAD WASTE. THE TRAILER ITSELF, ALTHOUGH NOT CONTAMINATED, WAS IN POOR CONDITION AND WAS NOT WANTED. THE TRAILER WAS REDUCED IN SIZE (CRUSHED), PLACED IN A ROLL-OFF, AND DISPOSED OF IN AN OFF-SITE, SANITARY LAND FILL.
Don Kramer 11/5/03

23. Description of Cause:

The Mound Radiological Operations Procedures define the techniques and responsibilities for radiological personnel to use for radiological surveys, documentation of the surveys, and posting changes when applicable. The RSDS forms require multiple reviews and provide for Radiological Control Technician, Count Room (if required), and Radiological Point of Contact (Supervisor) signatures. Although the RSDS forms from the February and August surveys indicated that posting changes were required, personnel that signed for review did not take action to repost the affected area.

24. Evaluation (by Facility Manager/Designee):

The meetings, critique, and follow-up communications for the event have identified areas needing addressing that do not directly relate to this event. These are addressed in lessons learned of this report.

25. Is Further Evaluation Required?: No

26. Corrective Actions
(* = Date added/revised since final report was approved.)

1.

Radiological Operations management will conduct briefings for all radiological supervisors to re-emphasize the importance of thorough review of survey data.	
Target Completion Date: 02/11/2000	***Completion Date:** 03/02/2000

27. Impact on Environment, Safety and Health:

M3 of 8

DC Kramer
11-13-03

There were no environment, safety, and health consequences related to this event. The event does indicate the need to aggressively pursue historical information for planning and work processes to anticipate contamination outside of nuclear/radiological facilities due to legacy contamination.

28. Programmatic Impact:

There are no immediate programmatic impacts. Potential impacts would result from the additional time and resources needed to do detailed surveys, including historical radiological survey searches, of areas around nuclear and radiological facilities where appropriate characterization is not available.

29. Impact on Codes and Standards:

Not applicable.

30. Lessons Learned:

For facilities that will be ultimately demolished for site closure, the demolition project operating the facility is responsible for the environment within 15 feet from the structure to accomodate foundation excavation and related activities during demolition. Environmental Restoration is responsible for the environment outside this zone. Multiple projects, such as soil remediation and facility operations, should interface on co-handling of existing external contamination issues and potential contamination issues. The historical information makes it clear there are potential contamination issues around most of the exterior of WD/WDA. Other facilities should consider these same issues when planning for job activities that have this potential.

The changeover of multiple site contractors over the last decade, personnel changes through early retirement/attrition/job changes/downsizing, and multiple functional organizations operating near a facility, but with different responsibilities, lead to the loss of important radiological control and process knowledge information for project planning. CERCLA information provides some planning information, but is not sufficient unto itself.

Consideration should be given for a method to capture and disseminate historical information pertaining to the areas outside of facilities that have the potential for similar contamination. The historical information for this event, from personnel with process knowledge, may have resulted in a modified approach to characterization of the area.

31. Similar Occurrence Report Numbers:

1. OH-MB-BWO-BWO01-1999-0014

32. User-defined Field #1:

33. User-defined Field #2:

34. DOE Facility Representative Input:

35. DOE Program Manager Input:

36. Approvals:

Approved by: HENDERSON, WILLIAM R, Facility Manager/Designee
Date: 01/11/2000
Telephone No.: (937) 865-4242

Approved by: WHITE, CHRISTOPHER A, Facility Representative/Designee
Date: 01/24/2000
Telephone No.: (937) 865-4396

Approved by: Approval delegated to FR
Date: 01/24/2000
Telephone No.:

M 4 of 8

OH-MB-EGGM-EGGMAT04-1996-0012 Final Report

Occurrence Report

Sites and Grounds

(Name of Facility)

Nuclear Waste Operations/Disposal

(Facility Function)

Mound Plant EG&G Mound Applied Technologies

(Laboratory, Site, or Organization)

Name: Robert E. Ellis
Title: Sr. Chemist **Telephone No.:** (937) 865-3552

(Facility Manager/Designee)

Name: KOEHLER, KATHY G
Title: SITE GROUNDS MANAGER **Telephone No.:** (513) 865-4886

(Originator/Transmitter)

Name: Don Dixon **Date:** 12/05/1996

(Authorized Classifier (AC))

1. Occurrence Report Number: OH-MB-EGGM-EGGMAT04-1996-0012

Building 31, Ruptured Sprinkler Line

2. Report Type and Date: Final

	Date	Time
Notification:	10/22/1996	15:07 (MTZ)
Initial Update:	12/05/1996	15:29 (MTZ)
Latest Update:	12/05/1996	15:29 (MTZ)
Final:	01/10/1997	11:05 (MTZ)

3. Occurrence Category: Off-Normal

4. Number of Occurrences: 1 **Original OR:**

5. Division or Project: EG&G Mound Applied Technologies

6. Secretarial Office: EM - Environmental Management

7. System, Bldg., or Equipment: Building 31, Fire Suppression System, Sprinkler line

8. UCNI?: No

9. Plant Area: SMPP Hill

10. Date and Time Discovered: 10/22/1996 12:25 (ETZ)

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11. Date and Time Categorized: 10/22/1996 14:20 (ETZ)

12. DOE Notification:

13. Other Notifications:

Date	Time	Person Notified	Organization
10/22/1996	13:45 (ETZ)	Raymond J. Powell	DOE/MB

14. Subject or Title of Occurrence:

Building 31, Ruptured Sprinkler Line

15. Nature of Occurrence:

01) Facility Condition
E. Safety Structure/System/Component Degradation

16. Description of Occurrence:

On October 22, 1996 at approximately 1225 hours (ETZ) a forklift operator accidentally struck a sprinkler system header manifold while transporting a box of Low Specific Activity (LSA) waste into building 31. Building 31 is a LSA Waste Storage facility. One line from the manifold was ruptured and several gallons of water sprayed onto surrounding boxes and the building ceiling. The Fire Department was immediately called and arrived at 1227 hours (ETZ). The supply valve to the building 31 sprinkler system was closed and the drain valve was opened to allow in-line water to drain.

This Occurrence Report was reviewed by an Authorized Derivative Classifier (Donald V. Dixon, Space Manager) on 12/5/96 at 1500 hours (ETZ) and contains no Classified or UCNI Information.

17. Operating Conditions of Facility at Time of Occurrence:

Normal Plant Operations

18. Activity Category:

03 - Normal Operations

19. Immediate Actions Taken and Results:

Although there are no contamination areas in Building 31 and LSA boxes stored in building 31 do not have exterior contamination, radiological operations personnel surveyed water samples to confirm that the water did not contain radionuclides.

The Fire Department immediately responded to the incident. Fire suppression water to the building was shut off. Repair of the sprinkler system was initiated October 22, 1996 and was completed October 22, 1996.

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20. Direct Cause:

3) Personnel Error
A. Inattention to Detail

21. Contributing Cause(s):

6) Management Problem
F. Other Management Problem

22. Root Cause:

2) Procedure Problem
A. Defective or Inadequate Procedure

23. Description of Cause:

The direct cause of the incident was in attention to detail. The forklift operator did not observe the configuration of stacked boxes prior to lifting and attempting to place additional boxes in place. A Waste Management technician normally assists the forklift operator during this operation by directing the placement of the boxes being moved. While this activity was not required by the procedure (MD-81240, Low-level Radioactive Waste Management Operations), the incident would have been avoided if it had been done. A contributing cause was failure of management to formally update the procedure to include the use of a technician to direct the forklift operator.

24. Evaluation (by Facility Manager/Designee):

The occurrence was the result of the use of an inadequate procedure. The procedure did not include activities found to be necessary to do the work properly. It is likely that the incident would have been avoided had the procedure specifically stated that the assistance of the technician was required.

25. Is Further Evaluation Required?: No

26. Corrective Actions
(* = Date added/revised since final report was approved.)

1.	Repair and return the fire suppression system to operational status.	
	Target Completion Date: 10/22/1996	**Completion Date:** 10/22/1996
2.	Management review of the existing procedure for level of detail in the stacking and pre-staging of containers/boxes.	
	Target Completion Date: 12/15/1996	**Completion Date:** 12/05/1996
3.	Manage review of other Waste Management storage facilities (Building 22, 31A, and 23) for the potential for a similar event.	
	Target Completion Date: 12/31/1996	**Completion Date:** 12/05/1996
4.	Train personnel on procedure changes.	
	Target Completion Date: 12/31/1996	**Completion Date:** 12/07/1996

M7 of 8

27. Impact on Environment, Safety and Health:

None

28. Programmatic Impact:

None

29. Impact on Codes and Standards:

None

30. Lessons Learned:

Modifications to procedures found to be necessary during actual practice must be formally incorporated in the procedures so that they will be consistently applied. Procedures must be frequently reviewed and updated to ensure that all necessary steps are included.

31. Similar Occurrence Report Numbers:

1. None

32. User-defined Field #1:

33. User-defined Field #2:

34. DOE Facility Representative Input:

Response of support services was satisfactory. Review of past occurrences shows this type of event is not frequent at Mound - the procedure modifications and heightened operator/supervior awareness will minimize possibiliy of repeat occurrence.

Entered by: POWELL, RAYMOND J Date: 12/16/1996

35. DOE Program Manager Input:

36. Approvals:

Approved by: Robert E. Ellis, Facility Manager/Designee
Date: 12/05/1996
Telephone No.: (937) 865-3552

Approved by: POWELL, RAYMOND J, Facility Representative/Designee
Date: 12/16/1996
Telephone No.: (513) 865-3041

Approved by: TRACY, TERRANCE, Program Manager/Designee
Date: 01/10/1997
Telephone No.: (301) 903-2173

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Appendix N

PRS Information

Recommendation pages are not generated for PRSs that require Further Assessment (FA) or that are unbinned. Accordingly, there is no recommendation page for PRS 268 included herein.

RECOMMENDATION

The Potential Release Sites (PRSs) 266 and 412 Removal Actions (RAs) were successfully completed at soil locations on the northeast portion of the site. These RAs resulted in the excavation and disposal of approximately 486,000 cubic feet (18,000 cubic yards) of material. All material was shipped via railcar to Envirocare disposal facility. The contaminant of concern (COC) for PRS 412 was thorium-232 with a cleanup objective (CO) (10^{-5} Risk-Based Guideline Value (RBGV) plus background) of 2.1 pCi/g. All results for PRS 412 were below their respective COs. The COs for the RA COCs for PRS 266, thorium-228, thorium-230, thorium-232, plutonium-238, and radium-226, are 2.6 pCi/g, 2.8 pCi/g, 2.1 pCi/g, 55 pCi/g, and 2.9 pCi/g respectively.

For PRS 266 all results were below COs except for one verification sample (V62) having thorium-228 and thorium-232 concentrations slightly greater than COs but less than the hot spot criteria (respectively 4.8 pCi/g, and 3.5 pCi/g). 95% upper confidence limit (UCL) and Sign Test calculations were performed that indicated that PRS 266 met the cleanup criteria. During excavation of PRS 266, an isolated area of volatile organic compounds (VOCs) contamination was identified & excavated. Results of sampling and analysis after excavation indicated no remaining VOCs above the more restrictive of the 10^{-6} RBGV or Hazard Index equal to one value. Potential for leaching to groundwater was considered but calculations were not performed because the VOC data set yielded only one detected, unqualified result which does not indicate a VOC concern. Sampling and analytical results adequately demonstrate that PRSs 266 and 412 RAs are complete and the PRSs require no further action.

Note: Two locations near PRS 266 (historic location SCR626 and SCR660) have historic elevated results of thorium-232 and plutonium-238 above cleanup objectives. Excavation of SCR660 was attempted during the PRS 266 RA but ceased when a corrugated metal pipe was found with thorium-232 in excess of cleanup objective in the sediment. Neither of the two locations is within a PRS nor identified as a PRS, but will be addressed as part of the PRS 267 RA.

Paul Lucas 8/22/03
Paul Lucas, OSC
U.S. Department of Energy
Miamisburg, Ohio

David P. Seely 8/22/03
David P. Seely, RPM
USEPA
Chicago, Illinois

Brian Nickel 8/22/03
Brian Nickel
OEPA
Dayton, Ohio

N1084

MIAMISBURG CLOSURE PROJECT
PRS 267

RECOMMENDATION:

Potential Release Site (PRS 267) is identified as one of the site's historic thorium redrumming areas. It became a PRS based on historic operations and sample results above screening levels. Further Assessment was performed and confirmed that limited plutonium-238 (historic) and thorium-232 (historic results & recent results) remains at isolated locations at levels that exceed the cleanup objectives (10^{-5} Risk-Based Guideline Values plus background).

Additionally, two locations southwest of PRS 267 (historic location SCR626 and SCR660) have historic elevated results of thorium-232 and plutonium-238 above cleanup objectives. Excavation of SCR660 was attempted but ceased when a corrugated metal pipe was found with thorium-232 in excess of cleanup objective in the sediment. Neither of the two locations is within a PRS nor identified as a PRS, but will be addressed as part of the PRS 267 removal.

Therefore, the Core Team recommends a **Removal Action** for PRS 267, the corrugated metal pipe at SCR660, and SCR626.

A PRS Package recommendation page for a Removal Action signed by the Core Team constitutes the final step in the PRS Package process. Successful completion of the Removal Action will be documented via an On-Scene Coordinator (OSC) Report signed by the Core Team, which will be placed in the Public Reading Room.

CONCURRENCE:

DOE/MCP: 4/30/03
Robert S. Rothman, Remedial Project Manager (date)

USEPA: 5/21/03
David P. Seely, Remedial Project Manager (date)

OEPA: 4/30/03
Brian K. Nickel, Project Manager (date)

N 2 of 4

MOUND PLANT
PRS 389/392
SOIL CONTAMINATION

RECOMMENDATION:

PRSs 389 and 392 are located in the eastern sector of the original Mound plant. These soil locations were identified as PRSs due to qualitative hydrocarbon detections found during the PETREX soil gas portion of the ***OU5, Non Area of Concern*** investigation.

In 1996, the Soil Gas Confirmation sampling effort sampled the locations with the highest ion counts (confirmation sample locations 5, 6 and 9) in the eastern sector and discovered no contamination above the 2×10^{-6} risk range. PRSs 389 and 392 were not sampled as part of the *Soil Gas Confirmation Sampling* but the PRSs had lower ion counts than confirmation sample locations 5, 6, and 9. This implies that these PRSs will have similar or lower health risk.

All radiological samples collected near these PRSs indicate that radionuclides are below their applicable 10^{-5} Risk Based Guideline Criteria or regulatory levels. Therefore, NO FURTHER ASSESSMENT is recommended.

CONCURRENCE:

DOE/MB: Arthur W. Kleinrath 11/20/96
Arthur W. Kleinrath, Remedial Project Manager (date)

USEPA: Timothy J. Fischer 11/20/96
Timothy J. Fischer, Remedial Project Manager (date)

OEPA: Brian K. Nickel 11/20/96
Brian K. Nickel, Project Manager (date)

SUMMARY OF COMMENTS AND RESPONSES:

Comment period from 12/19/96 to 1/23/97

☒ No comments were received during the comment period.

☐ Comment responses can be found on page _____ of this package.

MOUND PLANT
PRS 390/393/394
SOIL CONTAMINATION -- ORGANIC COMPOUNDS

RECOMMENDATION:

PRSs 390, 393, and 394 are located in the northern sector of the original Mound plant. These soil locations were identified as PRSs solely due to qualitative hydrocarbon detections found during the PETREX soil gas portion of the ***OU5, Non Area of Concern*** investigation.

In 1996, the Soil Gas Confirmation sampling effort sampled the locations with the highest ion counts (confirmation sample locations 2 and 4) in the northern sector and discovered no contamination above the 10^{-5} risk range. PRSs 390, 393, and 394 were not sampled as part of the *Soil Gas Confirmation Sampling* but these PRSs had lower ion counts than confirmation sample locations 2 and 4. This implies that PRSs 390, 393 and 394 will have similar or lower health risk than confirmation sample locations 2 and 4 ($<10^{-5}$ risk).

All sample results from PRS 390 indicate all radionuclides are below guideline criteria. Potential radiological contamination near PRS 393 will be addressed by creating a new PRS (PRS 412) and potential radiological contamination relevant to PRS 394 will be addressed by the PRS 266 removal action. Therefore NO FURTHER ASSESSMENT is recommended for PRSs 390,393 and 394.

CONCURRENCE:

DOE/MB: Arthur W. Kleinrath, Remedial Project Manager 12/17/96 (date)

USEPA: Timothy J. Fischer, Remedial Project Manager 12/17/96 (date)

OEPA: Brian K. Nickel, Project Manager 12/17/96 (date)

SUMMARY OF COMMENTS AND RESPONSES:

Comment period from 2/27/97 to 4/3/97

☒ No comments were received during the comment period.

☐ Comment responses can be found on page _____ of this package.

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Appendix O

Work Plan

Some drawings listed on the flysheet for Appendix C of the Work Package are structural drawings and therefore are not included in the Work Package in this appendix (Appendix O). However, the structural drawings are included in field and record copies of the Work Package and are available upon request.

WORK PACKAGE / PRELIMINARY HAZARD ANALYSIS

☐ **Office Master Copy** (**Original Approval Signatures**) ☐ **Field Working Copy** (**Original Field Sign -Offs**) ☐ **Review Copy** [**Note: Mark this section in color**] ☐ **Other Copy**

Note: The Project Engineer is responsible for completing Sections 1 through 10.

1. WORK PACKAGE TITLE: **Demolition of Buildings 31 & 31A**

2. WORK PACKAGE NUMBER: **BOSS-37544 - 00.**

3. WORK PACKAGE SCOPE:

The purpose of this project is the demolition and disposal of Buildings 31 & 31A superstructures and slabs/foundations, asphalt staging area, and the truck dock and metal grates south of Building 31. Their removal is handled as a CERCLA Removal Action in accordance with the Contingent Removal Action Addendum 1, April 2004. Heavy duty equipment will be used to demolish the building superstructures, dock, and metal grating south of Building 31, slabs, foundations, and underground utility piping, and to remove and dispose of the debris. **NOTE:** Building 31 and the dock are radiologically contaminated. An RWP will be required for its removal.

NOTE: Since Buildings 31 and 31A are within the boundary of PRS 267 (binned a Removal Action), the soil data for the entire area has already been evaluated and is not included in the scope of this effort. For information regarding the evaluation of the PRS 267 soil data and the Core Team recommendation for a Removal Action, please refer to Potential Release Site Package, PRS 267, Final, August 2003. For details of the soil removal work, please refer to Work Package #ER/ST-04-010, PRS 267 Soil Removal. For details of the verification sampling and analysis, please refer to the Building 38 Area VSAP, Final, March 2004.All Safe Shutdown, Utility Isolation, and Asbestos Abatement activities will have been completed before initiation of this project.

4. WORK LOCATION: **Building 31 & 31A – SM/PP Area**

5. WORK PACKAGE PHASES:

1. Site Information
2. Site Preparation & Mobilization
3. Building, Slab, and Dock Demolition and Debris Disposal
4. Area Radiological Evaluation, Site Posting, & Demobilization

LIST OF APPENDIXES:

A – PHA/JSHA

B – Pre-Job Briefing/Job Status Log

C – Drawings/Sketches/Photographs

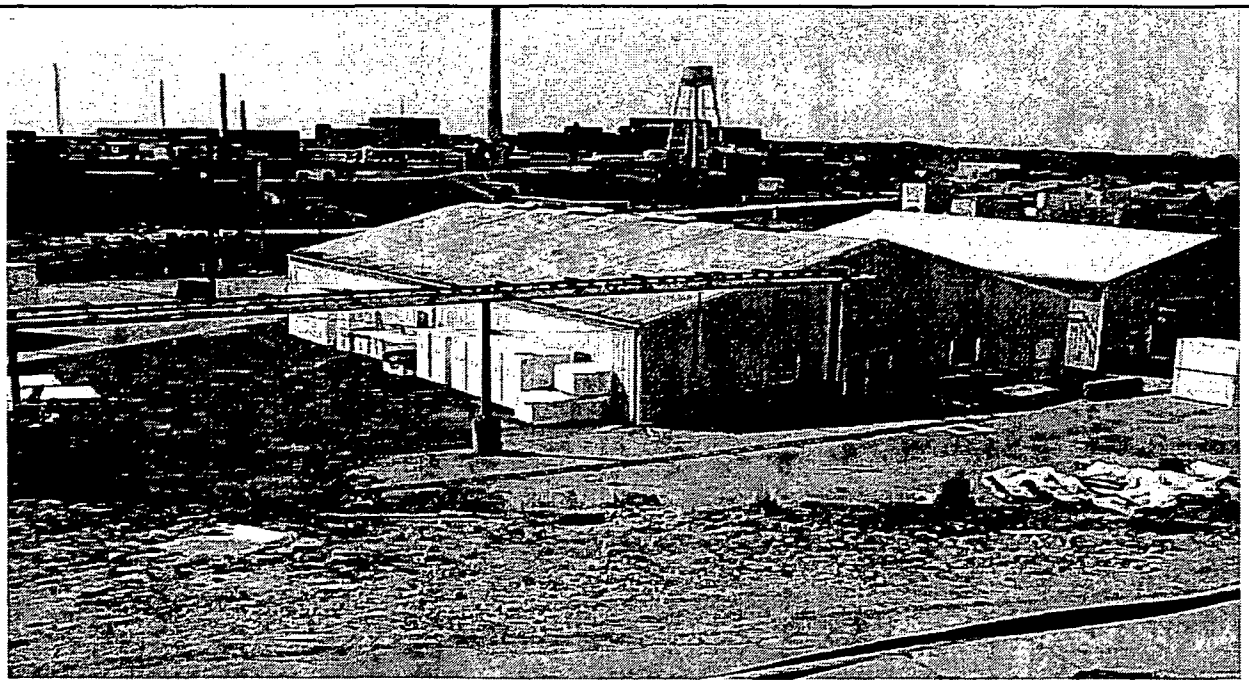
D – Miscellaneous (RWP, USQ, etc.)

E – Post-Job Conference/Lessons Learned

6. SPECIAL MATERIALS AND EQUIPMENT:

1. Tracked excavator with shear, grapple, hoe ram, concrete cracker/pulverizer, or bucket attachment
2. Rock crusher
3. Rubber tired and tracked front-end loaders
4. Transport equipment for debris as required
5. Fog Cannon
6. Torch Equipment

Volvo Dump Truck



7.0 DETAILED WORK STEPS:

7.1 SITE INFORMATION:

Building 31 is a pre-fabricated metal building. The building measures 60'-0' x 102'-0", on a 6"+ thick slab (varied at doors). Door and wall foundations are set on approximately 3'-8" deep footers. The base of the footer is reinforced concrete with three #5 reinforcing bars. Underlayment consists of 4" to 6" thick tamped sand or gravel.

Building 31A also is a pre-fabricated metal structure, consisting of wooden posts, beams, and rafters with metal siding, and to the north-northeast of the original Building 31 constructed on an existing asphalt pad. Footers/caissons were set at approximately 8' (western side—approximately 8'-2" to 8'4") along the sides of the building. The top elevations for the footer/caissons are about 866 feet to 867 feet, and can range in depth from 4'-5' along the eastern side to approximately 8' along the western side

There are interlocking metal grates south of Building 31. Because of soil contamination in the area, the grates were installed to prevent soil disturbance. The grates cover an area of approximately 5,300 sq. ft., which is trapezoidal in shape. (see photo in Appendix C)

The dock is a free standing concrete structure located south of the metal grates. The dock measures approximately 35 feet by 20 feet.

7.2 NATIONAL HISTORIC PRESERVATION ACT (NHPA)

Buildings 31 & 31A are not listed as a historic structure with the Ohio Historic Preservation Office (OHPO). No mitigative documentation package is required.

IMPORTANT: However, if any items or artifacts are discovered as this project progresses, the Cultural Resource Representative will be notified at extension 3691. Work will be temporarily suspended until which time the items or artifacts have been recovered.

IMPORTANT NOTE: All workers have Stop Work Authority. Situations where stop work authority is to be exercised are:

- To stop unsafe work.
- To stop unauthorized work, for example, work outside the scope of this work package.

7.3 SITE PREPARATION & MOBILIZATION

7.3.1 Site Access Control

Establish work zone boundary using fencing and/or with barricade tape as directed by the Project Foreman. Natural barriers, such as, waterways, spillways, etc. may be used to control access to the site.

Proper signage will be placed at all access points to the site.

This zone is not to be entered by anyone not directly involved with the demolition unless they have contacted the Project Construction Manager/Foreman first.

7.3.2 Clear Area and Mark/Protect Utility Equipment

The area around the building will be cleared of obstacles as appropriate. Coordinate with site Safety and Health and Environmental Compliance.

Verify/Mark/Protect fire hydrants and other above grade utility equipment to prevent damage during demolition activities.

Install storm drain protection in accordance with OPA 980099, Storm Water Pollution Prevention plan, by utilizing a grating slipcover (see Appendix C). Utilize GPS shoot-in locations of all outside grate drains that may be covered and difficult to re-locate.

Provide silt fencing and other measures to control/prevent storm water run-off and soil erosion in accordance with OPA 980099, Storm Water Pollution Prevention plan and Environmental Compliance PoC instructions. Periodically reevaluate

effectiveness.

7.3.3 Temporary Utilities

Water is required to control dust emissions. Ensure backflow prevention is present for domestic water source. Coordinate with site Radiological, Safety and Health and Environmental Compliance PoCs.

7.3.4 Temporary Facilities

This project will use BOSS Project facilities in C-Lot.

7.3.5 Temporary Communications

Temporary communications are required (cell phone, radios) due to the functions and equipment for hearing emergency notifications have been removed prior to demolition. At the job site, emergency notifications can be heard on the project two-way radios.

7.3.6 Staging Areas

The project site is of sufficient size to also be used as a staging area.

7.3.7 Erosion/Dust Control Measures

Control measures will be instituted to mitigate effects of excess storm water run-on/ run-off and the effects of erosion. The site Storm Water Pollution Prevention Plan, OPA980099 (latest issue) is written to comply with the site National Pollutant Discharge System (NPDES) Permit {OAC 3435-33}. Reference Table 1, Airborne Contamination Protection Methods, below.

7.3.7.1 Installation of Silt Fence

In order to prevent excess debris, soils, silt or other deleterious materials from entering surface streams or the storm sewer system a retention barrier will be erected where appropriate. This barrier will consist of straw bales or equivalent and industry standard "silt fence". Periodic inspections will be made by the project Superintendent or designee to ensure the fence is functioning properly. If, in the opinion of the Job Superintentent, the fence is not functioning properly, steps will be taken to re-enforce or alter the configuration until satisfactory results are achieved.

7.3.7.2 Installation of Fugitive Emissions Controls

The requirements of OPA 980014 Section 2.11, Fugitive Dust Control, will be followed in this work package. The goal of fugitive emission controls is no visible dust/emissions. Best available technology (BAT) determination for the demolition of Building 31/31A is reasonably available control measures (RACM). Reasonably available control measures (RACM) will be employed to maintain fugitive particulate emissions as low as reasonably achievable. Visual particulate emissions shall not exceed 20% opacity as a three-minute average for building demolition. Mitigating controls to be employed include, but are not limited to:

- Use of fixatives on internal and external surfaces, removal of loose paint and decontamination prior to demolition.
- Use of fixatives in-situ during work or prior to pauses in work (i.e. weekends and holidays)
- Controlled water misting of the building demolition area and common waste zone by misters installed on equipment, portable towers or operated by trained personnel.

The intent will be to add enough water to control fugitive emissions without over-saturating the area and creating undesirable run-off. Periodic inspections will be made by the Job Superintendant or designee to assure fugitive emissions controls are achieving the desired effect and meeting acceptable standards. Reference Table 1, Airborne Contamination Protection Methods, below.

Table 1 Airborne Contaminant Protection Methods

Dust Generating Activities	Administrative and Engineering Dust Control Measures
Building Demolition	• Applying dust control materials such as water and surfactants
Hauling Material and Equipment	• Reducing vehicle speeds (<20 mph) • Covering truck beds when transporting materials • Keeping soil levels in vehicles below the vehicle sides • Wetting roads used for transport • Wet sweeping or otherwise removing soil and mud deposits from paved roadways and parking areas
Vehicle and Equipment Traffic	• Reducing vehicle speeds (<20 mph) • Covering truck beds when transporting materials • Wetting roads used for transport • Minimizing unnecessary traffic on roadways, parking areas, and areas around field activities
Excavation	• Applying dust control materials water and surfactants • Covering storage piles with a tarpaulin, plastic, etc. • Keeping soil levels in vehicles below the vehicle sides • Minimizing the material drop height during excavation and loading operations • Compacting soils in work areas and in stockpiles at the end of each workday • Changing excavation and transportation method(s) when feasible • Applying vegetative cover or asphalt to project work area at completion of project • Sealing off work areas, stockpiles, etc., before the workday and during lunch breaks
Trenching	• Applying dust control materials water and surfactants • Covering storage piles with a tarpaulin, plastic, etc. • Keeping soil levels in vehicles below the vehicle sides • Minimizing the material drop height during excavation and loading operations • Compacting soils in work areas and in stockpiles at the end of each workday • Changing excavation and transportation method(s) when feasible • Applying vegetative cover or asphalt to project work area at completion of project • Sealing off work areas, stockpiles, etc., before the workday and during lunch breaks

Table 1 Airborne Contaminant Protection Methods (continued)

Dust Generating Activities	Administrative and Engineering Dust Control Measures
Material Loading and Unloading	• Reducing vehicle speeds (<20 mph) • Covering truck beds when transporting materials • Keeping soil levels in vehicles below the vehicle sides • Wetting roads used for transport • Wet sweeping or otherwise removing soil and mud deposits from paved roadways and parking areas
Storage Piles	• Compacting soils in work areas and in stockpiles at the end of each workday • Sealing off work areas, stockpiles, etc., before the workday and during lunch breaks • Covering storage piles with a tarpaulin, plastic, etc. • Applying vegetative cover to storage pile areas at completion of project
Wind Erosion from Work Sites	• Compacting soils in work areas and in stockpiles at the end of each workday • Sealing off work areas, stockpiles, etc., before the workday and during lunch breaks • Covering storage piles with a tarpaulin, plastic, etc. • Applying vegetative cover or asphalt to project work area at completion of project

7.3.8 Permits

The following permits may be applicable to perform this work:

- Penetration Permits
- Hot Work or Burning Permit
- Excavation Permits
- Lock Out Tag Out Permits
- Radiological Work Permits (RWP)
- Certification of equipment
- Sling Inspection

7.3.9 Radionuclides/Chemicals/Hazardous Materials

All known sources of chemicals of concern and Asbestos Containing Material will have been removed from the buildings prior to demolition. Asbestos Containing Material will have been abated in Buildings31 and 31A prior to the start of demolition by a certified abatement subcontractor.

Material, equipment, and debris (except hazardous material) associated with this project will be evaluated for feasibility to be free-released. Where sufficient Rad survey data exists, when debris pile surveys are below release limits, and debris can be protected from being contaminated during demolition, the debris will be free-released. The remainder of the debris will be treated as low-level radioactive waste unless radiological surveys determine waste exceeds 100 nCi/g. Any waste determined to exceed TRU levels will be segregated and packaged accordingly.

Mixed wastes may be encountered during the structure demolition activities. Any hazardous waste material (i.e. ACM, lead and mercury) encountered during demolition will be abated (as practical) and disposed of according to CH2M Hill Waste Management requirements.

Silica/nuisance dust and lead paint may be encountered during demolition. Engineering/administrative controls (such as water misting) will be used to mitigate the potential hazard to workers and the environment.

Fixative coatings and/or surfactants may be used to seal particulate in-place during extended breaks in work evolutions (i.e. long weekends and/or holiday breaks). Fixative coatings will be non-hazardous and/or non-RCRA and will be approved in accordance with CH2M Hill Safety and Health guidelines.

7.3.10 NESHAPS

The offsite estimated effective dose equivalent (EDE) for the demolition of the Buildings 31 and 31A was calculated to be (based on average survey results) ~3.0e-03 mrem, which is less than the 0.1 mrem/year threshold. Therefore USEPA approval is not required for this project. This work plan will contain methods/requirements to mitigate any potential dose that would exceed the threshold level.

7.3.11 Material Disposition

Based on a review of the work to be performed, the Waste Generator and Waste Coordinator determine types (sanitary, hazardous, LLW, LLMW, TRU) and estimated amounts of waste prior to generation. An evaluation of the physical, radiological and chemical properties is made to determine a disposal path for each type of waste. The proposed disposal facility, waste profile, and knowledge of the waste generating process will determine the characterization methodology required for each waste type.

Process knowledge will generally be sufficient to characterize sanitary and hazardous waste for disposal. Sampling and analysis for radiological characterization of radioactive waste will be determined based on process knowledge of the source of the waste. Analytical methods employed include surface contamination measurements, air concentration measurements and calorimetry (tritium), alpha spectroscopy and gamma spectroscopy. All characterization determinations are documented and peer reviewed prior to waste shipment. Material Safety Data Sheets (MSDS) are used to supplement process knowledge of chemical properties of the waste. Where process knowledge is not sufficient to provide a RCRA determination, analysis of waste will be accomplished through the Toxicity Characteristic Leaching Procedure (TCLP) performed by an offsite laboratory.

Procedures controlling waste characterization are contained in Mound Technical Manuals MD-10167, *Radioactive Waste Procedures*, Operations 420: *Waste Stream Characterization* and 428: *Waste Radionuclide Identification and Quantification*, and MD-70523, *Management of Hazardous Waste, Trash, and Recyclable Materials*, Operation 001: *Waste Verification Sampling and Analysis*. Additional direction is contained in these manuals in operations specific to the waste type and container being used.

7.4 PRELIMINARY ACTIVITIES AND VERIFICATIONS

7.4.1 Verify all Building Utility Isolation activities have been completed per BOSS – 37541 Building 31/31A Safe Shutdown Work Package and FTS-37545 Electrical Utilities Isolation Work Package, and verify the following have been disconnected:

- Fire Alarm Pull Boxes
- Fire Suppression Water Flow Alarms
- Smoke Detector Alarms
- Security Systems
- DDC signals

HOLD POINT: Utility Isolation Activity Completion Verification
Building 31/31A Safe Shutdown Work Package and
FTS-37545 Electrical Utilities Isolation Work Package

_____ Date/Time_____
Project Supervisor signature or email confirmation

7.4.2 The *Pre-Job Briefing Record,* per PP-1045/PP-1045A must be completed and signed.

7.4.3 The *Job Specific Hazards Analysis (JSHA)* must be reviewed.

7.4.4 DOE Lessons Learned will be reviewed.

7.4.5 Notification of Demolition and Renovation form must be filed with the Regional Air Pollution Control Agency (RAPCA) at least 10 business days before planned building demolition.

HOLD POINT: RAPCA Notification Verification

_____ Date to Proceed with Demo_____
Environmental Compliance PoC signature or email confirmation

HOLD POINT: Regulatory Requirements met

Verified by_____ Date & Time_____
Robert Ransbottom or designee/email confirmation

7.4.6 The "Cold & Dark" Implementation Requirements Document requires a Review Team tour, per D&D Requirements Implementation Plan, of the facility & scope of the project prior to Project Manager authorizing the start of work.

HOLD POINT: 'COLD & DARK' Review Team Walkdown Completed &
Project Manager Authorizes Work to Start:

Project Manager _____ Date & Time : _____

WARNING HAZARD: Dust Control – Utilize dust control measures for demolition activities as described in Table 1 in Appendix A. The Goal is no visible dust emissions. Controls will be evaluated routinely to determine their effectiveness.

CAUTION ELECTRICAL HAZARD: Contact of overhead power lines with heavy-duty equipment. If any part of heavy-duty equipment has the potential to come within 10' of street lighting circuit, perform LOTO to de-energize

electrical power source. This circuit must be re-energized each evening when demolition is complete for that day. Note locations on 'Cold & Dark' Safety Sketch

CAUTION HAZARD: Struck by flying debris. Establish construction boundary. Wear hard hat, safety glasses, safety shoes, and reflective vest or high visibility clothing inside construction area.

CAUTION HAZARD: Struck by moving equipment.

- Maintain the following distances from operating equipment:
- Shear – 75 feet
- Hoe Ram – 50 feet
- Other heavy duty equipment – 30 feet
- Bobcat – 15 feet

WARNING NOISE HAZARD: If noise surveys indicate the need, hearing protection will be worn while operating heavy-duty equipment. Follow the requirements of MD-10286 D9.

CAUTION LEAD HAZARD: Exposure to airborne lead during torch cutting. Contact Industrial Hygiene to verify absence of lead in paint or remove paint prior to torch cutting.

CAUTION HAZARD: Heat/Cold Stress. Follow the requirements of MD-10286, D13/D16.

WARNING

See Attached Photographs and Note Locations of:

- Three Radiologically Fixed Contaminated Areas (FCAs)
  - FCA-WM-07 is the flooring inside Building 31, it is posted at the doorways
  - FCA-WM-08 is on the ground located outside Building 31 on the west end, indicated with Radiological Postings & roped off
  - (No FCA log number) The truck dock, indicated with Radiological postings and roped off.
- One Radiological Contamination Area (CA)
  - The CA is on the ground located within Building 31, and is indicated with Radiological Postings & roped off
- One Radiological Materials Management Area (RMMA)
  - The RMMA is within Building 31 and is posted at the doorways

Do not enter or disturb the posted areas without contacting the Radiological PoC

NOTE: Removal of Buildings 31 & 31A superstructures/slabs/foundations, the asphalt staging area, and the truck dock and metal grates south of Building 31 are handled as a CERCLA Removal Action in accordance with the Contingent Removal Action Addendum 1.

HOLD POINT (Step 7.5.1):
Radiological Contaminated Material & Airborne Contamination Hazardous Work
Ensure all Workers are signed onto RWP for this phase of project
Follow all requirements of RWP for PPE, Monitoring, and Contamination Control

_____ Date/Time_____
Project Supervisor signature

7.5 BUILDING DEMOLITION SEQUENCE OF WORK

NOTE: The progression of the building demolition and selection/sizing of demolition equipment will ultimately be determined in the field. However, when a decision is made in the field to deviate from the work plan, the deviation will be discussed with and approved by the Job Supervisor and the Job Status Log will be filled out to document the change. Changes will be evaluated for any increased collapse potential.

NOTE: Demolition of the buildings will begin by removing designated clean areas of the buildings in order not to contaminate the clean debris with adjacent contaminated debris. Based on radiological screening results, Building 31A is not radiologically contaminated and will be disposed as non-Rad waste, unless debris pile surveys indicate otherwise.

NOTE: Waste debris created during demolition will be staged as much as possible within the footprint of each building. After appropriate surveys, it will then be loaded directly into the appropriate packaging or haulers. **Do not put Rad contaminated debris on an uncontaminated slab. Use Rad contaminated slab for Rad contaminated debris, only.** All waste will be packaged and disposed per CH2M Hill Waste Management requirements.

NOTE: Wind direction must be taken into account when pre-placing personnel operated and/or portable water misting equipment. Place personnel and misting equipment upwind to allow easy water application.

7.5.1 Demolish the above ground structures using heavy duty equipment to cut or dismantle and pull down the joists, roofing materials, wall sections, and support beams. Bldg. 31 structure is Rad contaminated and is to be handled as LLW. Bldg. 31A structure is non-contaminated and its debris piles will be surveyed by the Rad Con PoC to determine waste disposition.

7.5.2 Use the existing slabs of each respective building for the load out surface for loading debris and placing into appropriate hauling containers or trucks

Waste shall be size reduced and loaded into appropriate waste containers for hauling and disposal and disposed as directed by Waste Management PoC.

7.5.3 Metal Grating, Truck Dock, Slab, and Foundation Demolition

WARNING:

The Demolition Site Area is designated as an Underground Radiological Materials Area (URMA)
Radiological monitoring of all activities that disturb the soil is required.

Radiological contamination is present in the soil below and around Building 31, 31A, the metal grates/asphalt, and the dock.

HOLD POINT: (Step 7.5.2):
Radiological Contaminated Material & Airborne Contamination Hazardous Work; ensure all Workers are signed onto RWP for this phase of project. Follow all requirements of RWP for PPE, Monitoring, and Contamination Control

Project Supervisor _____Date/Time_____
Signature or email confirmation

HOLD POINT:
Obtain & follow completed Excavation/Soil Disturbance Permit, MD_10286, O5. Ensure entire area is clearly marked, or remarked, after building demolition activities, denoting all underground utilities as required by the permit

Project Supervisor _____Date & Time _____
Signature or email confirmation

HOLD POINT:
Coordinate demolition of slabs, foundation walls, caissons, footers, and grating with ER Soils Project PoC (Dennis Gault 865-3913 or 608-8224) such that soils remediation activities immediately follow demolition activities.

Project Supervisor _____ Date & Time _____
Signature or email confirmation

NOTE: During the metal grating, asphalt, and concrete demolition, use heavy duty equipment to assist RCTs to perform a radiological survey and categorize the waste for disposition.

NOTE: Concrete debris from the Building 31 slab and the dock will be segregated and disposed as Low Level Waste per Waste Management direction.

7.5.3.1 Using heavy equipment, break apart the metal grating, truck dock, slabs, foundation, and footers to 3 feet below grade, torch cut the rebar if required (Hot Work Permit is required) to support demolition and downsizing.

7.5.3.2 The soil below and around the truck dock is not within the PRS 267 boundary and has not been evaluated. Accordingly, as part of the building demolition project, soil sampling will be conducted per the Core Team approved Building 31 Dock Sampling and Analysis Plan (SAP). Verification of structure removal will be via photographs provided in the Structure OSC Report. Verification of structure removal will be via photographs provided in the Structure OSC Report.

7.5.3.3 Dismantle and dispose of the metal grate south of Building 31 per Waste Management direction.

7.5.3.4 Using heavy equipment, break apart and remove the asphalt staging area around Buildings 31/31A. Rad Con to survey debris. Debris will be sized and placed into appropriate containers. Based on radiological screening results, transport to designated disposal/shipping area as directed by Waste Management PoC.

7.6 SITE REMEDIATION & DEMOBILIZATION

7.6.1 Site Remediation will not be performed within the scope of this work package. The demolition site will be Radiologically surveyed, evaluated, and the area will be posted with Radiological Signage.

7.6.2 Erosion and Fugitive Dust Control.

Maintain erosion control/protection in accordance with OPA 980099, Storm Water Pollution Prevention Plan (latest issue) and fugitive dust controls in accordance with OPA 980014 Section 2.11, Fugitive Dust Controls and per Environmental Compliance PoC instructions. Coordinate any required site grading with the ER Project. Final site restoration will be completed by the ER Project.

NOTE: These controls will be maintained until the ER Soils Project performs work under the PRS 267 Removal Action.

Remove any unnecessary remaining sediment/storm water control fences

7.6.3 Remove Temporary Protection Structures

Remove barriers and/or wooden boxes from fire hydrants, fire prevention water lines

7.6.4 Demobilize Construction Equipment

Remove dust control water distribution system, temporary power and water, fencing and any traffic control. Scan equipment for radiological contamination prior to leaving area as required dependent upon in-process Rad surveys.

Note: Insert the activities to be performed during the job. Describe the specific methods of accomplishing these activities and appropriate level of detail based on the complexity, hazard, and skill of the craft. Activities listed must be grouped under the Work Package phases listed in item 5.

Work Package /Preliminary Hazard Analysis (Continued)

8.COMMENTS:

Note: Comments, to identify activities/hazards that are common to multiple phases of the project (example: Wear leather gloves when handling cut pipe). Identification of these items will facilitate the addressing the items once in the pre-job briefing.

9. REVIEW SIGNATURES:

Written by: Stephen Davis	Date: 6/1/04	Phone: 4436
Superintendent:	Date: 6/9/04	Phone: 608-8202
Foreman:	Date: 6/9/04	Phone: 608-8202
Project Eng. Mgr:	Date: 6/1/04	Phone: 608-8201
Industrial Safety & Hygiene:	Date: 6-9-04 6/8/04	Phone: 608-8008 608-8203
Rad. Controls: R. Case	Date: 6/1/04	Phone: 865-3714
ES&C: Ronald Paulick	Date: 6/2/04	Phone: 865 4080
Waste Mgmt: Dan Kapp	Date: 06/02/04	Phone: 673-8384
Bldg. Mgmt: Gary L Wadenbach	Date: 06/09/04	Phone: 608-8207
Classification: : N/A	Date: / /	Phone:
Other: NA	Date: / /	Phone:

Note: Project Manager has the authority to N/A signatures if review is not applicable.

10. USQ SCREEN / DETERMINATION REQUIRED? ☐YES X NO

Brief Explanation_ Buildings 31 & 31A are not categorized as Nuclear Facilities and the work scope will not affect other Radiological or Nuclear Facilities

USQ Trained Person: Gary L Wadenbach Date: 06/09/04 Phone: 608-8207

11. AUTHORIZATION SIGNATURE:

Project Manager: Date: 6/9/04 Phone: 608-8007

12. WORK PACKAGE CLOSURE:

Job Supervisor: Date: / / Phone:

Project Manager: Date: / / Phone:

RETURN PHA TO IS&H AT JOB COMPLETION.

APPROVAL CONTINUATION SHEET

Reviews:

Name	Signature	Date	Department

Reference Drawings	Rev.	Reference Procedures	Rev.

WORK PLAN REVISION SHEET

1. WORK PACKAGE TITLE: Demolition of Buildings 31 & 31A
2. WORK PACKAGE NUMBER: BOSS-37544 - 00.

[Note: Mark this section in color]

☐ Office Master Copy (Original Approval Signatures) ☐ Field Working Copy (Original Field Sign -Offs) ☐ Review Copy ☐ Other Copy

Revision Description: (attach page revisions to form)

Reviewed by:	Name	Signature	Date
Project Engineering:			
Project Superintendent/Foreman:			
Radiological Operations:			
Industrial Safety & Hygiene:			
Waste Management:			
Environmental Safeguards & Compliance:			
Building Manager:			
Other:			

Approved by:

CH2M Hill Project Manager

Name Signature

Date

REVISION LOG

1. WORK PACKAGE TITLE: Demolition of Buildings 31 & 31A

2. WORK PACKAGE NUMBER. BOSS-37544 - 00.

Revision	Reason	By	Date

Appendix A

Preliminary Hazards Analysis (PHA)

Job Safety & Health Analysis (JSHA)

APPENDIX A

Preliminary Hazard Analysis (PHA)For Work Package Activities

SECTION A, INDUSTRIAL SAFETY - TO BE COMPLETED BY THE INDUSTRIAL SAFETY AND HEALTH REPRESENTATIVE
Identify engineering/administrative controls or PPE as required, keyed to the following checklist items. Insert any required and/or other special actions to be taken because of the particular hazard (i.e. lead compliance plans, confined space plans, hearing conservation programs, etc.), Including any notations for future Hazard Analyses. Additionally, identify any activities which DOE prescribed Occupational Safety and Health standards, that require protective measures be designed, inspected, or approved by a professional engineer or other competent person. (Use Section F if additional space is needed.)

Item	Exist	Work Package Phase	Comments, Controls, Methods of Compliance
Access/Blockage:			
Blockage of exits or means of egress	No		[EGRESS]
Blockages/obstructions (Identify)	YES	3	Periodic blockages of roadways leading to 38 Soils area and to Building 128 during demolition.
Confined space entry **(permit)**	No		[CONFINE]
Emergency alarms or evacuation plans required	Yes	All	[EMERG] Plant Public Address system will be used to announce any plant emergency over the plant radio channel, cell phones will be used also, no specific added hazards exist in the demolition of this building.
Obstruction of fire protection equipment (pull boxes, hydrants, fire department connections, control panels, fire extinguishers, etc.)	Yes	All	Fire hydrant will be protected, but still available for emergency use.
Traffic control/flagman	Yes	All	[TRAFFIC] Provide sufficient flagmen and signage to ensure safe traffic control
Flammable/Explosive:			
Burning, welding, hot-work (Fire Watch) **(permit)**	Yes	2 & 3	[BURN] Obtain & follow Hot Work Permit per MD-10444. Paint may contain lead, do not torch cut painted surfaces without verification by IH or Safety PoC.
Chemical compatibility of corrosives/flammables	No		
Explosive/flammable atmosphere	No		
Explosives	No		
Fire protection system/equipment outage	No		[FIRE/EFIRE]
Fire Hazards Analysis/Fire Engineer Approval	Yes	N/A	[FHA/ADJA] Completed in Utilities Isolation Package
Flammable liquids/gases	Yes	2 & 3	[FLAM] Acetylene & oxygen – Utilize proper tank restraints. Follow Mound Procedure MD-10286, H1
Powder-actuated tools **(permit)**	No		
Special Fire Protection Equipment Required	No		[FIREQU]
Chemicals:			
Chemical process safety	No		
Compressed gas cylinders	Yes	2 & 3	Acetylene & oxygen Follow Mound Procedure MD-10286, H1
Emergency eyewash/shower available	No		[EWASH]
Elevated/Aerial Work:			
Crane operations, overhead or mobile	No		
Critical lifts (heavy or high value loads)	No		[CLIFT]
Elevated work/fall protection	Yes	All	[ELEV] Follow Mound Procedure MD-10286, M8
Forklifts, aerial lifts or material handling equipment	Yes	All	Trained operators only
Hoisting and rigging	No		[HOIST]
Overhead utilities (Identify)	Yes	All	[UITL] Street Lighting Circuit

APPENDIX A

Preliminary Hazard Analysis (PHA)For Work Package Activities (Continued)

SECTION A, INDUSTRIAL SAFETY - TO BE COMPLETED BY THE SAFETY AND HEALTH REPRESENTATIVE
Identify engineering/administrative controls or PPE as required, keyed to the following checklist items. Insert any required and/or other special actions to be taken because of the particular hazard (i.e. lead compliance plans, confined space plans, hearing conservation programs, etc.), Including any notations for future Job Safety and Health Analysis(JSHA). Additionally, identify any activities which DOE prescribed Occupational Safety and Health standards that require protective measures be designed, inspected, or approved by a professional engineer or other competent person. (Use Section F if additional space is needed.)

Item	Exist	Work Package Phase	Comments, Controls, Methods of Compliance
***Lockout/tagout, outages, disconnects* (permit)**			[LOTO/ISO]
• Electrical	Yes	All	Electrical isolation of the facility is accomplished during Utilities Isolation Activities. LOTO Street Lighting Circuit as needed during demolition.
• Mechanical (steam, hydraulic, pneumatic, gravity)	No		Utility isolation of the facility is accomplished during Utilities Isolation Activities and Safe Shutdown Activities.
• Interlocks	No		[ILOCK]
• Chemical	No		
• Radiological	No		
Outages of the plant public announcement (PA) system or the emergency notification system	No		[OUTAGE]
Building Systems Alarms - Ensure systems are not functional by contacting: Fire Department Security Facilities Services.	Yes	2	-Fire Alarm Pull Boxes -Fire Suppression Water Flow Alarms -Smoke Detector Alarms -Security Systems -DDC signals
Alarm Disable/Disconnect	No		
Structure Related:			
Modification to Fire Wall/Door	No		[FIREWAL]
Penetrations into walls, floors, etc. **(permit)**	No		[PENETR]
Plastic sheeting or wood framing/enclosures	No		
Structural Modification	YES		Demolish building [STRUCT]
Work impacting adjacent normally occupied areas	Yes	All	[ADJAC/BMAPP/SIGNS/NOTIF]
Building Structural Engineering Survey per OSHA 29 CFR 1926.850	Yes	N/A	Survey Completed by __W._Johanan__-letter in Appendix D_____ Date:
Temporary Requirements:			
Temporary heating facilities	No		
Temporary/portable buildings or structures	No		[FACIL]
Temporary service hook-ups (Identify)	Yes	All	Water hydrant for misting, including backflow prevention, if required or fog cannon & self contained water tanks
Public utilities (Identify)	No		[WATER]
Lighting/illumination/adequacy	No		[MLITE]
Miscellaneous:			
Machine guards	No		
Off-shift work	Yes	All	As determined by Project Manager
Repetitive work	No		[ERGO]
Other (Specify)	None		
Work in attics, ceilings, chases, or crawlspaces	No		
Work Requiring Scaffolding **(inspection required)**	No		[SCAFF]
Electrical:			
Electrical hazards	No		[LIVEL]

APPENDIX A

Preliminary Hazard Analysis (PHA)For Work Package Activities (Continued)

SECTION A, INDUSTRIAL SAFETY - TO BE COMPLETED BY THE SAFETY AND HEALTH REPRESENTATIVE
Identify engineering/administrative controls or PPE as required, keyed to the following checklist items. Insert any required and/or other special actions to be taken because of the particular hazard (i.e. lead compliance plans, confined space plans, hearing conservation programs, etc.), Including any notations for future Job Safety and Health Analysis(JSHA). Additionally, identify any activities which DOE prescribed Occupational Safety and Health standards that require protective measures be designed, inspected, or approved by a professional engineer or other competent person. (Use Section F if additional space is needed.)

Item	Exist	Work Package Phase	Comments, Controls, Methods of Compliance
Grounding of electrical equipment	No		
Soils/Excavation:			
Underground utilities (Identify)	Yes	3 & 4	[UITL] Utilize Excavation/Soil Disturbance Permit, MD_10286, O5 before slab demolition
Trenching/Shoring **(permit)**	No		[DIG]
Hazards due to condition of facility or terrain (Identify)	No		
Any soil disturbance	Yes	3 & 4	[DIG] (Note: Check for URMAs) Obtain & follow Excavation/Soil Disturbance Permit, MD_10286, O5 before slab demolition. Remediation of this contamination will be conducted by the ER Project.

SECTION B, INDUSTRIAL HYGIENE - TO BE COMPLETED BY INDUSTRIAL HYGIENE REPRESENTATIVE
Identify engineering/administrative controls or PPE as required, keyed to the following checklist items. Insert any required and/or other special actions to be taken because of the particular hazard (i.e. lead compliance plans, confined space plans, hearing conservation programs, etc.), Including any notations for future Job Safety and Health Analysis (JSHA) . Additionally, identify any activities which DOE prescribed Occupational Safety and Health standards that require protective measures be designed, inspected, or approved by a professional engineer or other competent person. (Use Section F if additional space is needed.)

Item	Exist	Work Package Phase	Comments, Controls, Methods of Compliance
Asbestos/Fibers:			
Asbestos	No		[ASBEST]
Removal of ceiling tiles*	No		
Insulation/man-made mineral fibers (☐ MSDS available)*	No		
Hazardous Materials:			
Beryllium	No		
Cadmium	No		
Chlorofluorcarbon (CFC)	No		[CFC]
Coal, tar or asphalt products	No		
Lead	Yes	All	Exposure to airborne lead during torch cutting. Contact Industrial Hygiene to verify absence of lead in paint or remove paint prior to torch cutting
Mercury	No		
Polychlorinated biphenyls (PCBs)	No		
Carcinogens (☐ MSDS available)*	No		[CARC]
Chemical/Corrosives:			
Chemicals/solvents (☐ MSDS available)*	No		[CHEM/MSDS]
Corrosives/acids/caustics (☐ MSDS available)*	No		

***NOTE:** Requires a description of the materials involved which present a hazard. Identify the physical location of the MSDS.

APPENDIX A

Preliminary Hazard Analysis (PHA)For Work Package Activities (Continued)

SECTION B, INDUSTRIAL HYGIENE - TO BE COMPLETED BY INDUSTRIAL HYGIENE REPRESENTATIVE
Identify engineering/administrative controls or PPE as required, keyed to the following checklist items. Insert any required and/or other special actions to be taken because of the particular hazard (i.e. lead compliance plans, confined space plans, hearing conservation programs, etc.), Including any notations for future Job Safety and Health Analysis (JSHA). Additionally, identify any activities which DOE prescribed Occupational Safety and Health standards that require protective measures be designed, inspected, or approved by a professional engineer or other competent person. (Use Section F if additional space is needed.)

Item	Exist	Work Package Phase	Comments, Controls, Methods of Compliance
Ventilation/Air:			
Abrasive blast (☐ MSDS available)*	No		
Coating/painting (☐ MSDS available)*	No		
Dusty operations	Yes	3 & 4	[POWDER] Utilize dust control measures as appropriate from Table 1 (OPA980014).
Foam in Place Operations	No		
Spraying/generation of mists*	Yes	3 & 4	Demolition dust control water misting during demolition and road wetting during waste hauling. Control misting water run-off in accordance with OPA 980099, Storm Water Pollution Prevention Plan (latest issue).
Ventilation or Air Monitoring requirements	Yes	3 & 4	[VENTIL/IH] Air monitoring for potential silica during demolition activities wil be performed as needed for annual site assessment.
Miscellaneous:			
High Pressure systems	No		[HIPRES]
Lasers	No		
Noise in excess of 85 dBA	Yes	3	[NOISE] Hearing protection required during noise hazard activities.
Blood-borne pathogens*	No		
Temperature extremes (heat or cold stress)	Yes	All	[CRYRO/COLD/HEAT] discuss in daily pre-job briefings & monitor per MD-10286 Operations D13/D16
Welding, brazing, or thermal cutting operations (permit)	Yes	2, 3,& 4	[BURN] Hot Work Permit Required. Paint may contain lead, do not torch cut painted surfaces without verification by IH.
Hazardous Waste Operations (HAZWOPER)*	No		
Other (specify)	None		-

***NOTE:** Requires a description of the materials involved which present a hazard. Identify the physical location of the MSDS.

Preliminary Hazard Analysis (PHA)For Work Package Activities (Continued)

SECTION C, RADIOLOGICAL PROTECTION - TO BE COMPLETED BY RADIOLOGICAL CONTROLS REPRESENTATIVE
Identify engineering/administrative controls or PPE as required, keyed to the following checklist items. Insert any required and/or other special actions to be taken because of the particular hazard (i.e. RWP, ALARA Plan, etc.), Additionally, identify any activities which DOE prescribed Occupational Safety and Health standards that require protective measures be designed, inspected, or approved by a professional engineer or other competent person. (Use Section F if additional space is needed.)

Item		Exist	Work Package Phase	Comments, Controls, Methods of Compliance
Location:	Controlled Areas (Specify)			
•	Three Radiologically Fixed Contaminated Areas (FCAs)	Yes	All	-FCA-WM-07 is the flooring inside Building 31, it is posted at the doorways -FCA-WM-08 is located outside Building 31 on the west end, indicated with Radiological Postings & roped off at the doorways -(No FCA log number) The truck dock, indicated with Radiological postings and roped off.
•	One Radiological Contamination Area (CA)	Yes	All	The CA is located within Building 31, is indicated with Radiological Postings & roped off
•	One Radiological Materials Management Area (RMMA)	Yes	All	The RMMA is within Building 31 and is posted
	Other (Specify)	None		
Activities:	Digging/Soil Removal (permit)	Yes	3 & 4	[DIG] Excavation permit required for slab/foundation removal and site remediation activities
	• URMA	Yes	All	Demolition Site is located on an URMA. All surface disturbances must be coordinated & approved with Radiological PoC. Soil Remediation being handled by the ER Project.
	Welding, burning, grinding, hammering, chipping, or scraping of contaminated materials	Yes	2, 3 & 4	Precautions to be taken to prevent physical disturbance of contaminated areas
	Decontamination	No		
	- Site Remediation	No	None	None Performed as part of this work package scope
	Waste Disposal	Yes	All	See Waste Disposal Plan, section E.
	Other (Specify) – Radiological Survey, Evaluation & Posted	Yes	4	The demolition site will be Radiologically surveyed, evaluated, and the area will be posted with Radiological Signage
Sources:	X-Ray equipment, sealed, or unsealed sources	No		
Controls:	Radiological Work Permit	Yes	All	[RWP/RWP=JS/RWP=N/R/RPGEN]
	ALARA Plan	No		[ALARA] No
	Other	None		

APPENDIX A

Preliminary Hazard Analysis (PHA)For Work Package Activities (Continued)

SECTION D, ENVIRONMENTAL COMPLIANCE- TO BE COMPLETED BY ENVIRONMENTAL COMPLIANCE REPRESENTATIVE
Identify engineering/administrative controls as required, keyed to the following checklist items. Insert any required and/or other special actions to be taken because of the particular hazard. Additionally, identify any activities which are DOE or EPA prescribed protective requirements. (Use Section F if additional space is needed.)

		Exist	Work Package Phase	Comments, Controls, Methods of Compliance
Conditions:	Fugitive Dust **(refer to Table 1 below)**	Yes	All	OPA 980014 Section 2.11
	Storm Water Runoff	Yes	All	Install sediment/storm water protective "slip cover" around storm drain grating & silt fencing. Referenc OPA 980099, Storm Water Pollution Prevention Plan (latest issue).
	Erosion Control	Yes	All	Grading and stabilization in coordination with ER and Environmental. Final site restoration will be handled by the ER Project after the PRS 267 remediation effort. Reference OPA 980099, Storm Water Pollution Prevention Plan (latest issue).
	NESHAPS Calculation	Yes	N/A	Emission Levels determined to be below requirement. No US EPA approval required for this building.
	National Historic Preservation	No	N/A	Building 31/31A is not listed as a historic structure with the Ohio Historic Preservation Office (OHPO). No mitigative documentation package is required.
	• Artifacts found			If any items or artifacts are discovered as this project progresses, the Cultural Resource Representative will be notified @ extension 3691. Work will be temporarily suspended until which time the items or artifacts have been recovered.
	Safe Drinking Water Act	No	N/A	All Utilities were isolated with Utility Isolation Work Package
	• Potable water	No	N/A	Potable water was disconnected for building during Utilities Isolation Work Package.
	• Backflow preventers for misting	Yes	All	Install backflow prevention for water misting source as directed by Environmental Compliance PoC
	Emergency Spill Response Materials (Confirm process lines are drained)	Yes	All	Ensure spill kits are available
	Locate Monitoring Wells	No	N/A	No monitoring wells within project site boundary
Notifications:	RAPCA Notification for Asbestos	No	N/A	All regulated asbestos material was removed during a previous phase of this project
	RAPCA Notification for Demolition	Yes	3	Required 10 business days before beginning demolition activity
	Emergency Spill Response Notification	Yes	All	AAA-911 or 8-911
	Other	None		

Preliminary Hazard Analysis (PHA)For Work Package Activities (Continued)

SECTION E, WASTE MANAGEMENT- TO BE COMPLETED BY WASTE MANAGEMENT REPRESENTATIVE *Include any required and/or other special actions to be taken because of the particular hazard. Additionally, identify any activities which are required by DOE, Nevada Test Site, Envirocare or other waste site.* (Use Section F if additional space is needed.)

	Quantity Expected Cu. Ft.	Work Package Phase	Radiological Characterization	Packaging Requirements	Mode of Disposal
Types:					
Sanitary Landfill Waste: • Concrete • Steel & Copper Piping • Metal Roofing • PVC • Electrical Wiring • Fiberglass Insulation • Wood	20,394 (Bldg. 31A, grates, and asphalt)	3	Structure surveys and debris pile surveys. 31A slab may be used as onsite fill.	Trucks, rolloffs	Trucks to sanitary landfill.
Hazardous Waste: • RCRA Hazardous Waste • Asbestos • Other	None				
Mixed Waste	None				
Low Level Radiological Waste: • Building Debris • Below grade	24,528 (Bldg. 31)	3	TBD during disposal. If final structure surveys and debris pile surveys allow, the structure may be free-released. 31 is contaminated and will be disposed as LLW..	Per Waste Management direction	Per Waste Management direction
Transuranic (TRU) Waste	None				
NOTE: 1. Sealed pressure vessels will need to be at <1.5 atmosphere if present. 2. Any items not previously evaluated are to be set aside for evaluation by Waste Management prior to disposal.					
Other:					
Material sent off-site Fill out MD-200180 Attachment 1 (see below)	None				
Material sent to concrete crusher Fill out MD-200180 Attachments 1 & 2 (see below)	None				

SECTION F - OTHER CONDITIONS, CONCERNS, OR SUPPLEMENTAL INFORMATION FROM SECTIONS A THROUGH C INCLUDING APPLICABLE LESSONS LEARNED:

EMERGENCY PREPAREDNESS

- Site Notification Procedures
  Use **911** for all emergency services onsite. This is the first response for any emergency, spill, or release. If using a cell phone, dial **AA911** (NEXTEL). Any injury, no matter how minor, shall be reported immediately to the Medical Department for evaluation and treatment. The injured employee shall report any injury to the supervisor in charge or designee.

  Employees will be notified of emergency or abnormal conditions by the project two-way radios. Additionally, unique sheltering and evacuation signals are available should site-wide protective actions be necessary.
  Evacuation: Continuous air horn blasts
  Take Shelter: Two air horn blasts – pause – two air horn blasts

- Evacuation Route/Assembly Areas
  Assembly area is West of Building 31 outside the work area boundary fence.

- Take Shelter Area
  Be aware of threatening weather and take shelter when life-threatening storms are imminent.

  The take shelter area is Building 126.

APPLICABLE LESSONS LEARNED – See Appendix E

JOB SAFETY & HEALTH ANALYSIS

JSHA MASTER DOCUMENT CONTROL NO:
BOSS - 31/31A - 102703

SIGNATURES

ORIGINATOR: Steve Davis X 4436
REVIEW/REV: [illegible] 608-8203
REVIEW/REV: [illegible]
REVIEW/REV: [illegible]
APPROVED: [illegible] 608-8037

DATE: 04/26/04	_X_ NEW ___ REV	**BUILDING:** 31/31A	**JOB:** Demolish Building 31/31A MSR #37544
DEPARTMENT/COMPANY: BOSS Project/CH2M Hill Mound, Inc.			**SECTION:** N/A

OCCUPATIONS: : Heavy Duty Operators, Demolition Tech's, Demolition Crafts, & Electricians.
Supported by Project Personnel e.g.. Supervision, Engineering, Building/Facility Manager, RAD Control, Ind. Hygiene, and Safety

REQUIRED PERSONAL PROTECTIVE EQUIPMENT:
Hard Hat, Safety Glasses with side shields, safety shoes, safety vest

MSDS(s)/CHEMICALS ASSOCIATED WITH THE JOB:

BASIC JOB STEPS	POTENTIAL ACCIDENT/ILLNESSES OR KNOWN HAZARDS	SAFE JOB PROCEDURES
Break the job down into basic steps that tell what is done first, what is done next, and so on. Record the job steps in their normal order of occurrence. Describe what is done, not the details of how it is done. Usually, three or four words are sufficient to describe each job step. For example, the job of "replacing a light bulb" may break down into basic steps as follows: 1. Bring and set up ladder 2. Ascend ladder 3. Remove light globe & bulb 4. Replace light bulb 5. Replace light globe 6. Descend ladder 7. Remove and store ladder	Ask yourself for each job what accidents/illnesses could occur to the employee doing the job. Record potential accidents/illnesses by combining one of the abbreviations below with the agent of contact. For example, "struck by a crane hook" is recorded "SB-crane hook." Number each potential accident. SB - Struck by CB - Contacted by SA - Struck against CW - Contact with CI - Caught in CO - Caught on IB - Caught between F - Fall SO - Strain-overexertion* E - Exposure (occ. illness) *Show ergonomic stresses as SO (repetitive trauma, single event strain, or awkward position)	For each potential accident/illness, ask yourself exactly what the employee should do or not do to avoid the accident/illness. Describe specific precautions in detail. Give each precaution the same number given in the potential accident (center column) to which it applies. Avoid generalities such as "Be alert," "Be careful," and "Take caution." Use simple do or don't statements; e.g., "Lock out main power switch," "Stand clear of lift before signaling," or "Check wrench grip before exerting full force." If necessary, explain how, as well as what, to do. Amount of detail is a matter of judgment. Describe ergonomic solutions (job redesign, new tools, worker lift assistance, etc.)
General Safety Note	A wide variety of incidents occur on a regular basis that potentially could result in injury or illness	-Be cognizant of your own safe work practices as well as those of your co-workers -Review any related safety procedures of which you are unsure -Utilize STOP WORK Authority as necessary
Pre-job meeting with involved personnel to discuss the work plan and safety requirements. This meeting is conducted daily.	N/A	-This project engages in Enhanced Work Planning(EWP), an ISM process that evaluates and improves the approach by which work is identified, planned, approved, controlled, and executed.
1. Site Preparation & Mobilization	Standard construction hazards. CW – Radiological Contamination	-Demolition preparation is defined by 29CFR1926.850; workers, unfamiliar with construction standards must notify the project supervision and/or project health and safety personnel. -All workers to be Rad Worker Trained & signed onto RWP
1a. Site Access Control	Struck by equipment, debris	-Once the work area is defined, only authorized personnel are permitted in the construction perimeter. -Unescorted, Non-project and Non-emergency personnel, must have acceptance of the BOSS Project Project Manager for entry. -Emergency access to the work zone will be maintained to the extent possible.
1b. Clear Area and Mark/Protect Utility Equipment	Running into fire hydrants, manhole covers, or grates over field drains.	-Mark/protect hydrant and other utility equipment with wooden boxes, visible stakes, and/or colored flags. -Cover field grates to protect

JOB SAFETY AND HEALTH ANALYSIS FORM
(CONTINUATION SHEET)

BASIC JOB STEPS	POTENTIAL ACCIDENT/ILLNESSES OR KNOWN HAZARDS	SAFE JOB PROCEDURES
2 Building Demolition & Debris Disposition	Vehicle Traffic Hazard	-Control traffic with flagmen and signage as necessary
2a. Demolish building using excavator mounted shear, hoe ram, grapple, loader, and bobcat	Struck by flying debris Struck by moving equipment Noise Hazard	-Establish construction boundary. -Wear hard hat, safety glasses, safety shoes, and reflective vest inside construction area. Make eye contact with operator when working around equipment. Use hand signals to communicate intent. -Maintain the following distances from operating equipment: Shear – 75 feet Hoe Ram – 50 feet Other heavy duty equipment – 30 feet Bobcat – 15 feet -Make sure equipment is in safe working order. Use spotter if vision is obstructed. -Install traffic control with sufficient flagmen -Wear hearing protection while running heavy duty equipment Follow the requirements of MD-10286 D9
2b. Torch cut rebar or to weaken structural members	Burns, fire Potential lead paint fume exposure Compressed Gas Cylinders (CGCs)	-Obtain and follow Hot Work permit per MD-10286 O2. Wear proper PPE, have fire extinguishers in the construction zone. -Test for lead paint; do not torch cut lead paint. -Follow Mound Procedure MD-10286, H1
2c. Working in excessive heat/cold	Heat Stress/Cold Stress	-Follow the requirements of MD-10286 D13/D16 and discuss in daily pre-job briefings
2d. Debris Characterization & Disposal	Radiological Contamination	-RCTs to conduct debris pile surveys. -Follow any RWP requirements
2e. Slab & Foundation Demolition & Removal	Underground Utility Contact – Electrical/Water Pressure Exposure Radiological Contamination	-Evaluate & Mark area per Excavation/Soil Disturbance Permit, MD_10286, O5 for Underground Utilities. -Follow any RWP requirements. -Have RCTs survey bottom of slab before disposal
3a. Rough grading	Equipment/ personnel mixture	-Stay clear of operating heavy equipment

0 2448 45

JOB SAFETY AND HEALTH ANALYSIS FORM
(CONTINUATION SHEET)

BASIC JOB STEPS	POTENTIAL ACCIDENT/ILLNESSES OR KNOWN HAZARDS	SAFE JOB PROCEDURES
3b. Erosion control installation	Slip – Trip – Fall Lifting /twisting strain	-Uneven walking and/or working surfaces –use extra caution. -Follow accepted practices
3c. Demobilize Construction Equipment Remove dust control water distribution system Remove temporary power Remove fencing	Equipment/ personnel mixture Cuts and abrasions Lifting /twisting strain Radiological contamination of equipment if required by in-process surveys	-Be cognizant of your own safe work practices as well as those of your co-workers -Review any related safety procedures of which you are unsure -Utilize STOP WORK Authority as necessary -Coordinate in-process Rad Surveys with Rad Techs

Appendix B

Pre-Job Briefings/Job Status Log

PRE-JOB BRIEFING RECORD

MSR/PROCEDURE (if applicable):	JOB SUPERVISOR:

A. Time, Date and Location of PJB: _____

B. Applicable Procedure Number: _____

C. Job Description: _____

D. Personnel Attending:

HP#	SIGNATURE	HP#	SIGNATURE

BRIEFING CHECK OFF LIST

JOB SUPERVISOR:	**Check When Completed***
1. Scope of work reviewed:	
a. The assignments and responsibilities of each individual were specifically identified.	Done ☐ N/A☐
b. The current facility conditions, tagouts, valve lineups, and work permits relating to this job have been discussed.	Done ☐ N/A☐
c. The precautions, limitations, initial conditions, and prerequisites were adequately reviewed.	Done ☐ N/A☐
d. Potential hazards associated with the job have been discussed (JSHA).	Done ☐ N/A☐
e. Specific work covered by RWP (any limitations).	Done ☐ N/A☐
2. All necessary safety equipment and PPE is available.	Done ☐ N/A☐
3. All required personnel have satisfied initial and continuing training requirements to perform the job including training specified on the RWP.	Done ☐ N/A☐
4. All required personnel have reviewed the applicable documentation listed in B above as it applied to their part of the job.	Done ☐ N/A☐
5. Reliable and adequate communications are available.	Done ☐ N/A☐
6. The required tools and equipment are available.	Done ☐ N/A☐
7. Appropriate lob sheets, material transfer, and data recording forms are available.	Done ☐ N/A☐
8. All required documents available at the PJB are approved and current.	Done ☐ N/A☐

*For items not applicable, write in N/A.

PRE-JOB BRIEFING RECORD (Page 2)

9. Related past problems, unusual events, and occurrences were discussed. Done ☐ N/A☐
10. All personnel understand egress procedures and egress areas. Done ☐ N/A☐
11. RWP requirements:
    a. Radiological conditions of the workplace. This should include a review of the most recent survey of the area. It is important to ensure that the survey is specific to the work area. In cases where a system of unquantified activity will be breached, discuss the "anticipated activity" to be expected after the breech. Done ☐ N/A☐
    b. Dosimetry requirements. Done ☐ N/A☐
    c. Protective clothing and respiratory protection requirements (cite location of doffing instructions). Done ☐ N/A☐
    d. Job coverage requirements (continuous vs. intermittent). Explain that continuous means "within line of sight and field of control of RCT at all times." Done ☐ N/A☐
    e. Stop Work Levels (SWLs) and other applicable limitations. Done ☐ N/A☐
    f. POC's/RCT's must discuss the type of radiological monitoring to be employed at the job site during and subsequent to the work. Personnel assigned to do the work MUST EXPRESS THEIR FULL UNDERSTANDING of the monitoring to be employed and of the alarm signals if applicable. Workers MUST CONCUR in the type and scope of monitoring planned at the job site before work can begin. Done ☐ N/A☐
    g. Dose reduction/contamination control techniques (e.g., use of; shielding, capture velocity, containment devices). Done ☐ N/A☐
    h. Personnel and equipment monitoring requirements (including control point locations). Done ☐ N/A☐
    i. Bioassay requirements. Discuss; isotopes to be encountered, proper use of the bioassay information form, use of nosewipes as appropriate (and disposition of nosewipe results), and bioassay frequency if this will be a long term task. Done ☐ N/A☐
    j. Effective date and expiration date of RWP reviewed. Done ☐ N/A☐
    k. Briefly cover WORKER RESPONSIBILITIES (Article 123 of the DOE RADCON MANUAL) Done ☐ N/A☐
12. Necessary instrumentation is adequately tested and calibrated. Done ☐ N/A☐
13. Key task steps in which radiological conditions may change and where the RCT will perform in-process surveys to assess radiological conditions. Done ☐ N/A☐
14. If an ALARA Job Review was required, then this would be an appropriate time for the review. Done ☐ N/A☐
15. Radiological hold points, if any. Done ☐ N/A☐
16. Discuss any appropriate response actions to emergencies, such as CAM, alarms, criticality alarms, or increasing radiation levels. Done ☐ N/A☐
17. When nonradiological health monitoring (e.g. asbestos) is to be employed at the job site during and subsequent to the work, the personnel assigned to do the work MUST EXPRESS THEIR FULL UNDERSTANDING of the monitoring to be employed and of the alarm signals if applicable. Workers MUST CONCUR in the type and scope of the monitoring planned at the job site before work can begin. Done ☐ N/A☐
18. Communications and coordination with other groups. Done ☐ N/A☐
19. Provisions for waste management and job cleanup. Done ☐ N/A☐
20. Open floor to questions. Done ☐ N/A☐

The above minimum requirements have been met; this PJB has been conducted in sufficient detail to ensure save conduct of the job.

_____

Job Supervisor/Foreman Date

NOTE: Completed pre-job briefing sheet must be retained with the work package or maintained in your record file.

CAUTION: Working on or Near Live, Active Lines/Utilities
Consider Alternative Means of Protection (Blocking, Shielding, etc.)
And Alternative Manual Methods for Removal

PRE-JOB UPDATE RECORD

MSR/PROCEDURE (if applicable):	JOB SUPERVISOR:

A	Time, Date and Location of PJU:
B	Applicable Procedure Number:
C	Job Description:
D	Personnel Attending:

HP#	SIGNATURE	HP#	SIGNATURE

JOB SUPERVISOR – This is a reminder checklist for the update. The supervisor need only discuss and note changes from the previous day's briefing or update. (Use NC for No Change).

1. Any changes/revisions to safety envelope for work:
a. New/added assignments and responsibilities of any individual
b. Changes in facility conditions, tagouts, valve lineups
c. New or changed precautions/hazards
d. Valid RWP or other required work permits still in effect
2. Adequate supply of PPE
3. New Training, any training coming up on expiration
4. New changes to relevant Category "A" or Category "B" procedures
5. Equipment and tools calibrations in effect
6. Relevant lessons learned, critique reports
7. RWP revisions:
a. Changes to radiological conditions of the workplace, particularly with respect to postings
b. Change in scope, especially if it is a reduction in scope or Stop Work Levels
8. Changes to radiological and/or health monitoring
9. Open floor to questions

The above minimum requirements have been met; this PJU has been conducted in sufficient detail to maximize continued safe conduct of the job, and all personnel have been through a previous Pre-Job Brief.

_____ _____

Job Supervisor/Foreman Date

NOTE: Completed pre-job update sheet must be retained with the work package or maintained in your record file.
CAUTION: Working on or Near Live, Active Lines/Utilities
Consider Alternative Means of Protection (Blocking, Shielding, etc.)And Alternative Manual Methods for Removal

JOB STATUS LOG

1. WORK PACKAGE TITLE: Demolition of Building 31/31A
2. WORK PACKAGE NUMBER: BOSS-37544 - 00

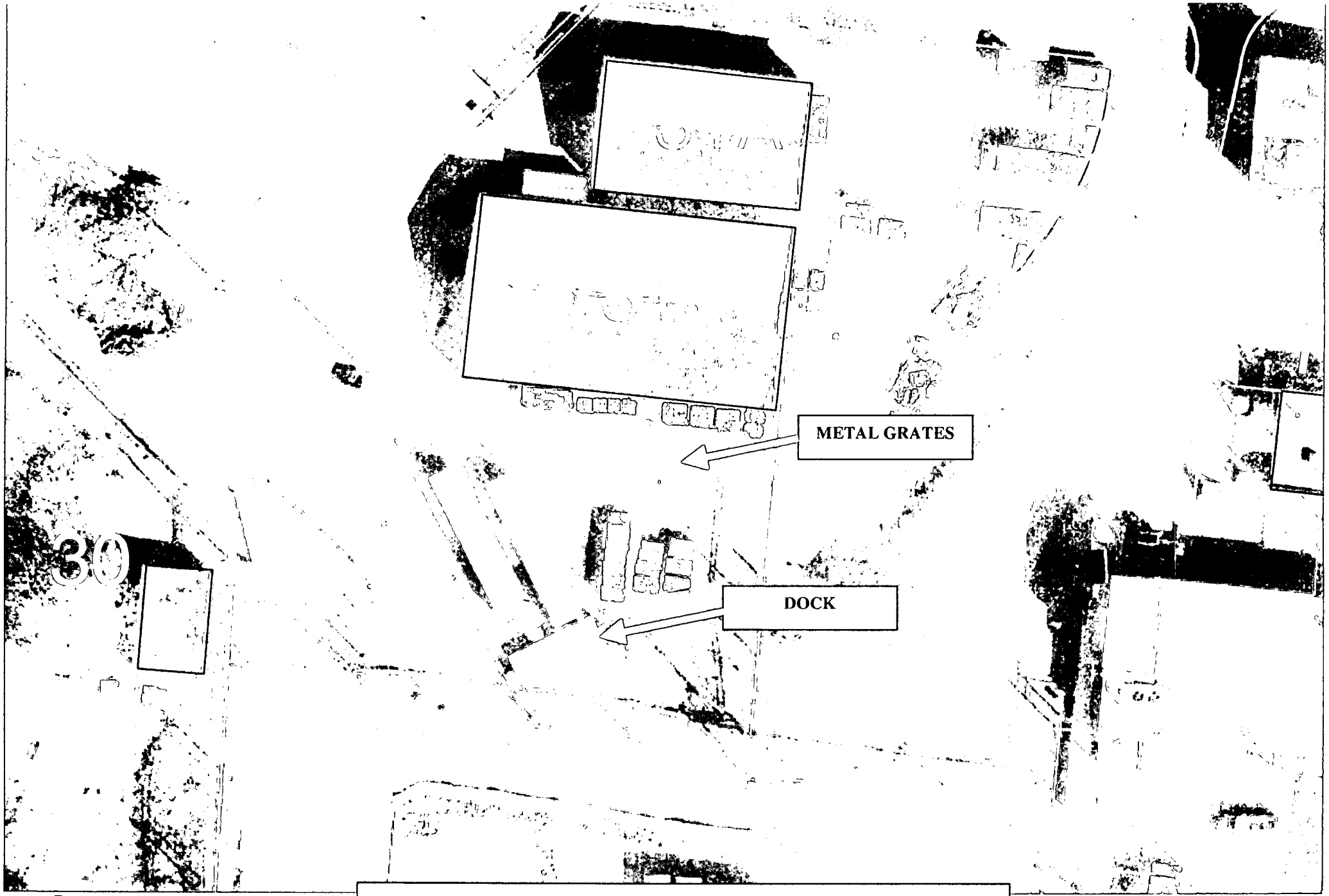
DATE	TIME	WORK PKG. SECTION	% Complete	BY	STATUS

030 of 4

Appendix C

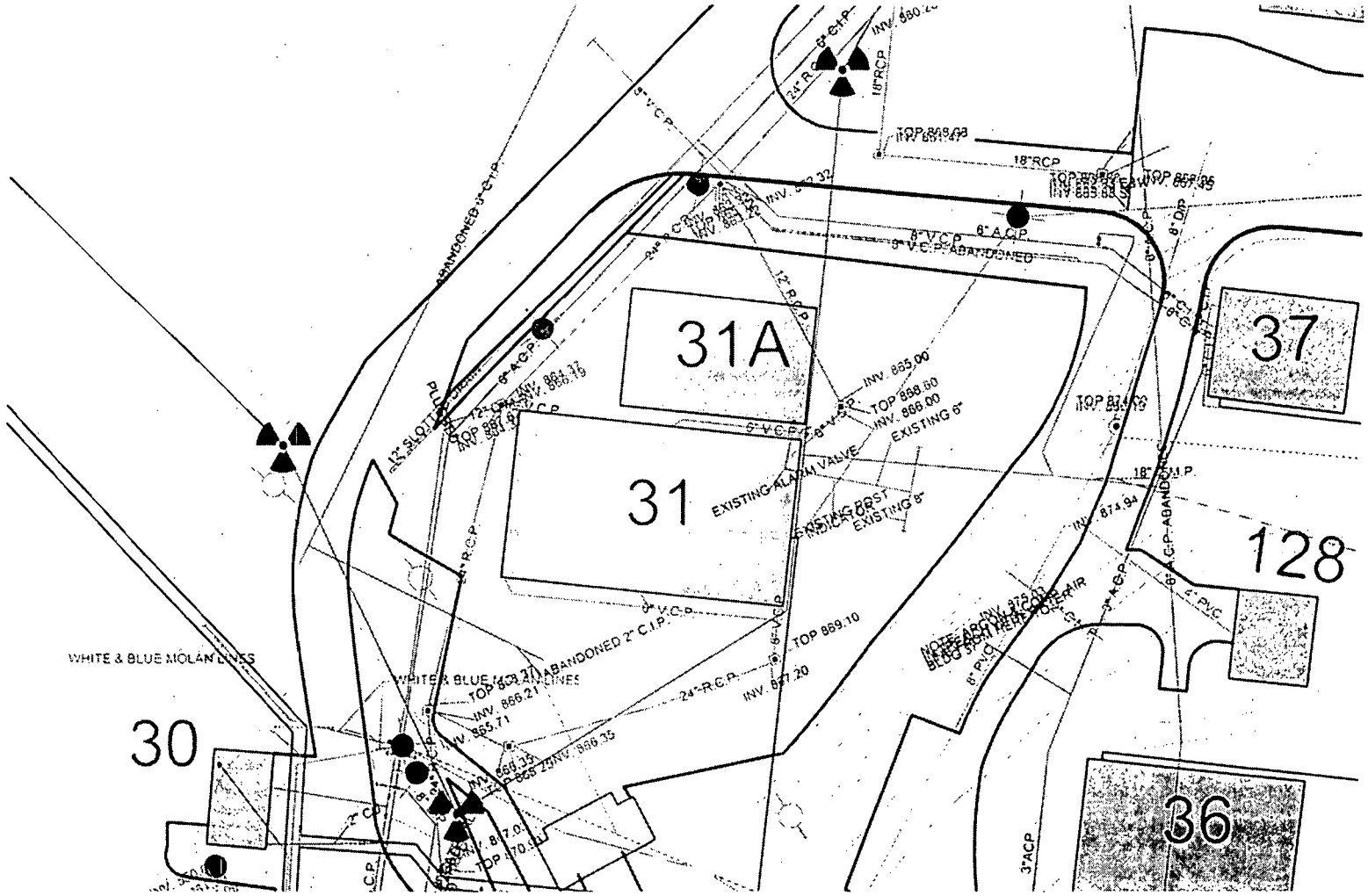
Drawings/Sketches/Photographs

- **Building 31/31A Aerial Photo**
- **Building 31/31A Demolition Site Drawing**
- **Building 31/31A Storm Sewer Grates & Site Topography Drawing**
- **Contaminated Materials Storage Bldg. S.M. Area Building 31, Dwg. No. 4-5746 (Structural)**
- **Building 31 Addition Foundation Plan, Dwg No. 3031 00A Sheet 001 (Structural)**
- **Building 31 Addition Roof Framing Plan, Dwg No. 3031 00A Sheet 002 (Structural)**
- **Building 31 Addition Sections, Dwg No. 3031 00A Sheet 003 (Structural)**
- **Building 31 Addition Mechanical Plans, Dwg No. 3031 00M Sheet 004001 (Structural)**
- **Building 31 Waste Dock Plan and Details, Dwg No. FSD21875 (Structural)**
- **Photographs**
  - **Building 31 Radiological Contamination Area**
  - **Building 31 Fixed Contamination Area**
  - **Truck Dock**
  - **Metal Grating**



AERIAL VIEW OF BUILDINGS 31/31A

Building 31 & 31A Demolition Site Drawing

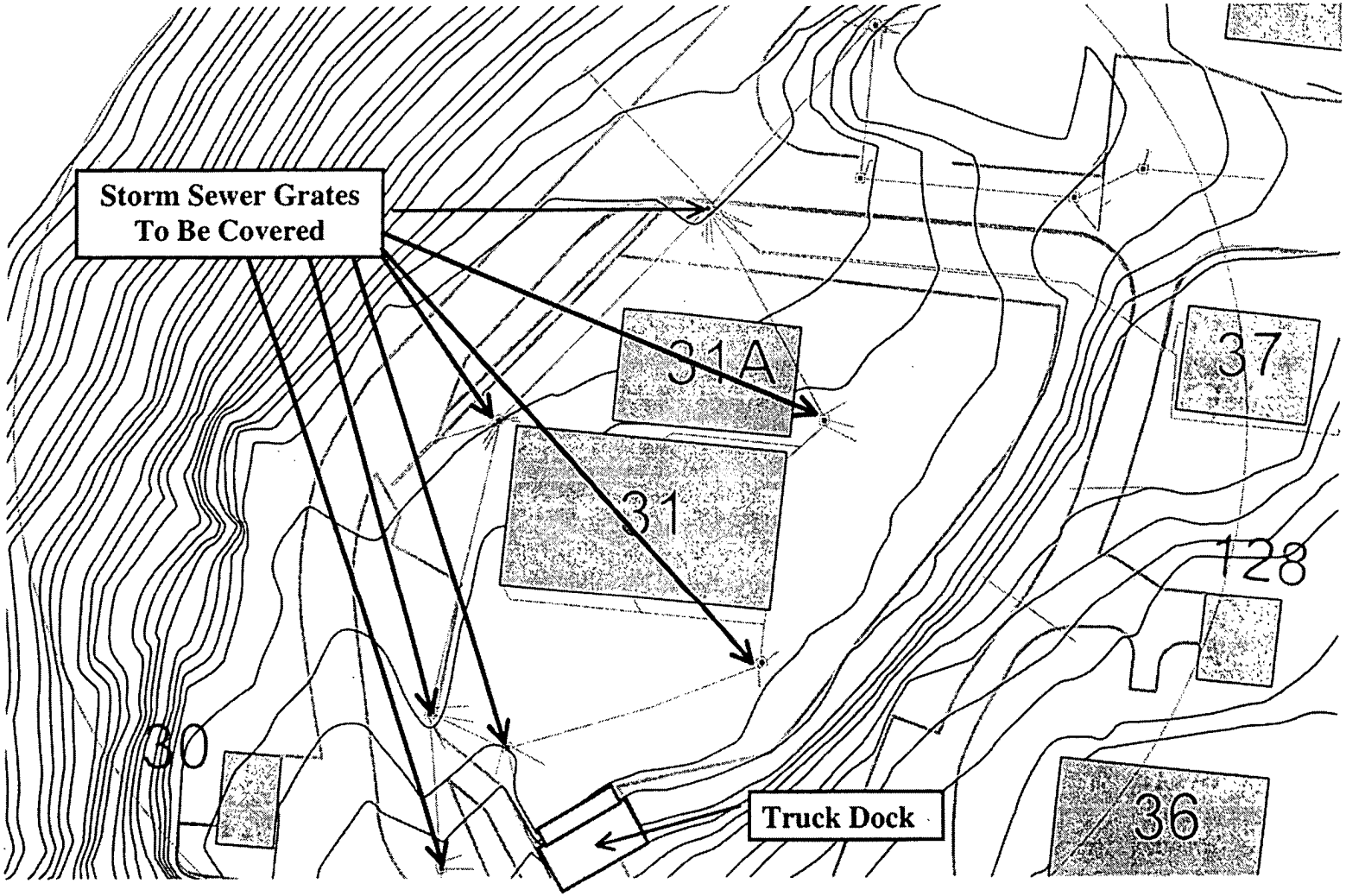


EMERGENCY HORN BLASTS:
EVACUATION: CONTINUOUS HORN BLAST
TAKE SHELTER: 2 HORN BLASTS – PAUSE – 2 HORN BLASTS

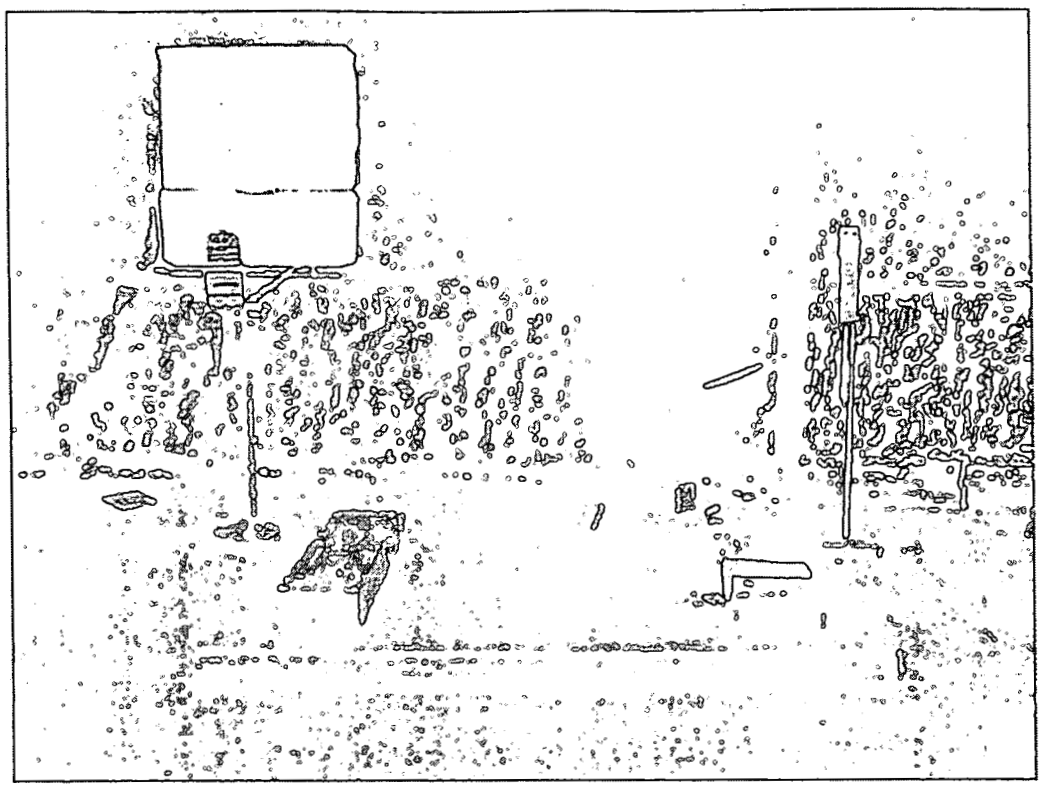
2:58 PM

10/9/2003

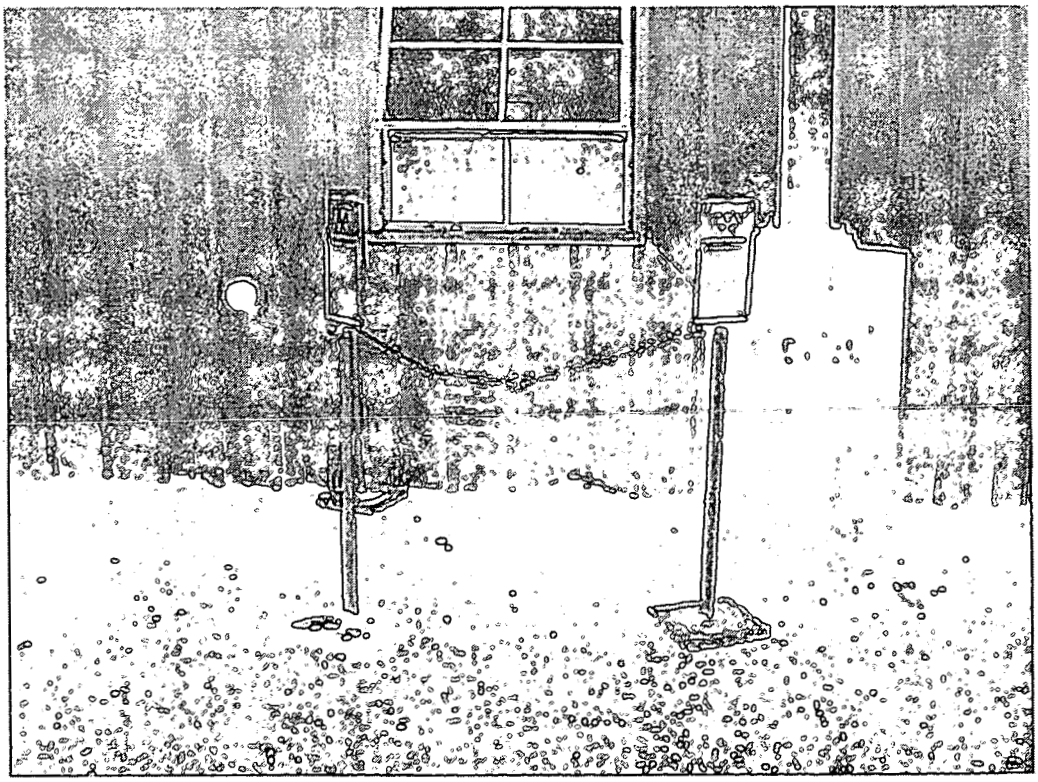
Building 31 & 31A Storm Sewer Grates and Site Topography Drawing



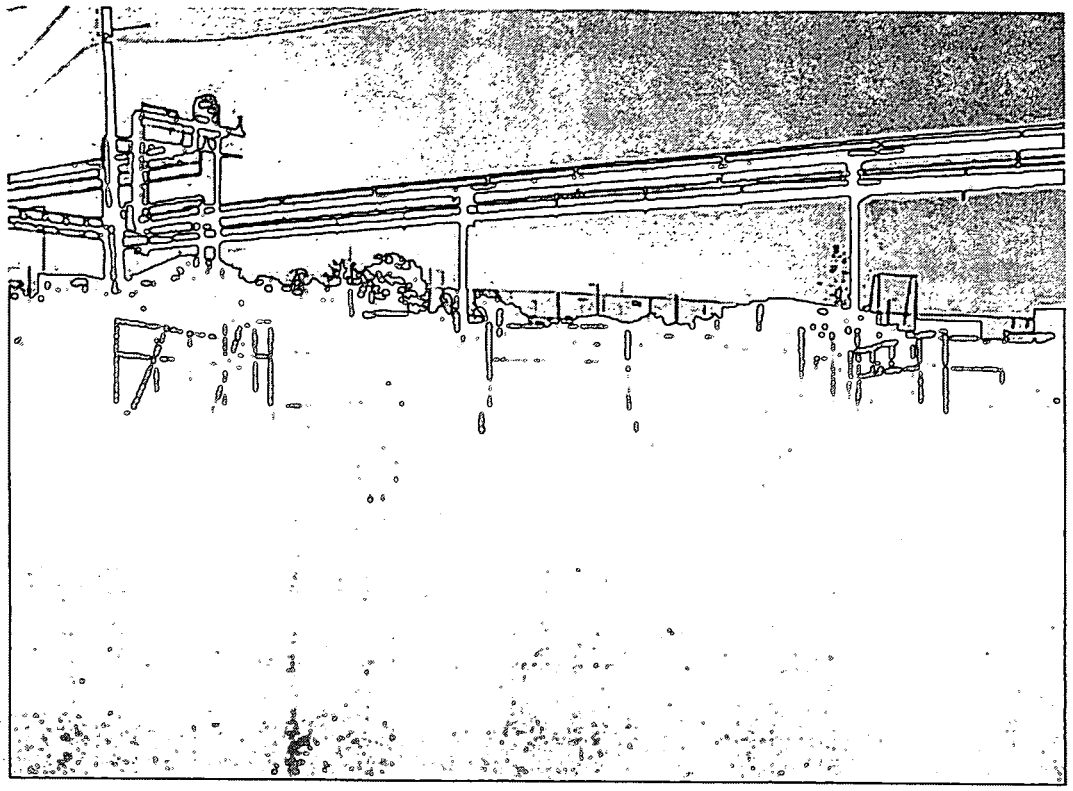
034445



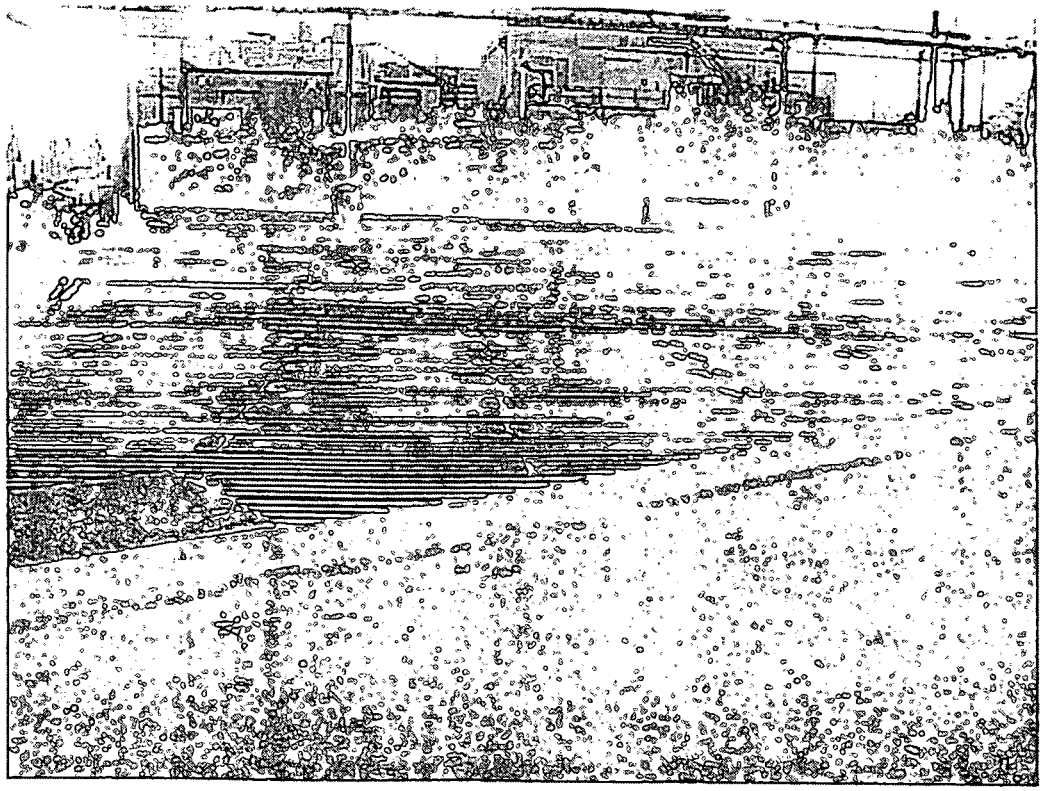
RADIOLOGICAL CONTAMINATION AREA



FIXED CONTAMINATION AREA



TRUCK DOCK



METAL TANK TRACKS

Appendix D

Miscellaneous

- No USQ required for this Work Package
- RWP to be Supplied at Demolition Startup
- Structural Engineering Survey letter, per OSHA CFR1926.
- Acceptance Checklist For Waste Shipments To Rail Staging Area

May 31, 2004

Mr. Steve Davis
Project Engineer-BOSS Group
CH2M Hill Mound
Miamisburg, Ohio

Subject: STRUCTURAL REVIEW OF WORK PACKAGE FOR THE DEMOLITION OF BUILDINGS 31 AND 31A RE; 1926 CFR 850.1A.

Dear Steve,

We have performed a review of the demolition work plan and a walk down and have found them to be acceptable in reference to the OHSA requirements.

The CFR requires that a competent person be present at all times during the demolition process and that no changes be made to the work plan without full knowledge of that person. Also, any changes must be approved in writing with corrections fully noted or changes to the document made prior to start of work.

Sincerely,

William L. Johanan P.E.
EIS/RTG LLC.

STATE OF OHIO
WILLIAM L. JOHANAN
E-44883
REGISTERED
PROFESSIONAL ENGINEER

ACCEPTANCE CHECKLIST FOR WASTE SHIPMENTS TO RAIL STAGING AREA (Page 1)

PROJECT/AREA: _____ Area includes : _____
WASTE COORDINATOR: _____ Area excludes: _____

WASTE PROFILE

VOLUME _____ Delivery Start Date _____
Delivery End Date _____

WASTE DESCRIPTION (debris/soil/etc): _____

ACTIVITY: _____

OTHER:

REMOVABLE?: Y/N
FIXATIVE APPLIED? Y/N
Waste Coordinator Approval:
Name: _____
Signature: _____
Date: _____

ENVIROCARE ACCEPTANCE

Meets Profile for radiological activity? Y/N
Meets Profile for size envelope? Y/N

OTHER:

Envirocare POC Approval
Name: _____
Signature: _____
Date: _____

DOT ACCEPTANCE

DOT Classification: _____

OTHER:

Shipping POC Approval
Name: _____
Signature: _____
Date: _____

RAD CON ACCEPTANCE

Level Control (HCA/CA): _____
Personnel monitoring: _____
PPE: _____
Air monitoring: _____
Boundary postings: _____
Fixative Required? Y/N Details: _____
Wetting required? Y/N Details: _____
OTHER:

Rad POC Approval:
Name: _____
Signature: _____
Date: _____

AB ACCEPTANCE

Meets inventory limit? Y/N
Meets tritium limit? Y/N
Meets volume limit? Y/N
OTHER:

Facility Manager Approval:
Name: _____
Signature: _____
Date: _____

OPERATIONAL ACCEPTANCE

Delivery window (days/times): _____ Size < 6' x 6' x 10"? Y/N
Delivery method: _____ Delivery location: _____
New Fixative at project? Y/N Details: _____
New Fixative at pit? Y/N Details: _____
In-pit segregation? Y/N Details: _____
In-pit mixing? Y/N Details: _____
Lids required? Y/N Details: _____
Additional equipment? Y/N Details: _____
OTHER:

PROJECT POC APPROVAL

Name: _____
Signature: _____
Date: _____

WASTE OPERATIONS POC APPROVAL

Name: _____
Signature: _____
Date: _____

Appendix E

LESSONS LEARNED/ POST-JOB CONFERENCE

Transporting Portable Fuel Tanks

(L03-012)

Lessons Learned Statement:

When moving portable fuel tanks, care should be taken to adjust lifting forks to the proper width required by the item being lifted. Setting of the forks into available lifting slots should be verified and spill kits should be readily available at the job site where portable fuel tanks are being used.

Discussion:

Oh March 26, 2003, a Heavy Duty operator attempted to lift a 550 gallon portable diesel fuel day tank, with a John Deere 644G loader equipped with forks. The tank assembly was equipped with two lifting slots; however the operator did not take time to adjust the loader forks to match their spacing. He attempted to pick up the tank by engaging only one lifting slot (a common practice) and placing the other fork under the lower tank support rails. In his haste to complete the job, the operator proceeded to lift the tank without first verifying that the fork had engaged the slot; the fork had missed the intended slot. As the tank was lifted it became unstable, rolled off of the forks, and tipped onto its end. At this point, diesel fuel began to pour out of the vent pipe. After three attempts, the operator was able to right the tank and stop the spill. Immediately, the Fire Department was called and several people in the area began to take measures to contain the spill. Through teamwork by the involved organizations, the spill was prevented from flowing into the adjacent stream. A total of approximately 24 gallons of fuel spilled from the tank onto a paved parking lot.

Analysis:

Failure to take the time necessary to adjust the loader forks and to verify that they were set into the tank lifting slots prior to lifting resulted in the spill of diesel fuel. Contributing to the event was the common practice of transporting the tank with only one fork set in the lifting slot. Additionally, work plans did not consider special precautions though the tank was being manipulated while in close proximity to a body of water.

Recommended Actions:

1. Operators must take the required time to adjust lifting forks to the proper width required by the item being lifted. The practice of moving the portable tanks with only one fork set into the lifting slots should be discontinued. Further, setting of the forks into both lifting slots must be verified prior to beginning the lift.

2. Spill kits should be located at the job site where portable fuel tanks are being used.

3. Work plans should provide special precautions when using or transporting portable fuel tanks near bodies of water.

Refueling Vehicles Safely

L02-037 (2002-RL-HNF-0040)

Lessons Learned Statement:

Static electricity sparks near gasoline pump nozzles can ignite vapors, causing serious fires. The person pumping the gas should avoid reentering the vehicle while refueling. If reentering is absolutely necessary, the person must touch a metal part of the vehicle well away from the fuel fill spout before touching the hose nozzle.

Discussion of Activities:

See a graphic depiction of what can happen if someone ignores this warning at:
http://www.hanford.gov/lessons/sitell/ll02/burnout.jpg.

Analysis:

Between January and April 2000 the Petroleum Equipment Institute researched 81 cases of fires caused by "static electricity" at gas pumps, similar to the one that caused the damage shown above. Many more cases of fires have been reported since then but were not analyzed in that study. Results of that research show that:

- Twenty reports described fires before the refueling process began, when the fueler touched the gas cap or the area close to it after leaving the vehicle.
- Twenty nine fires occurred when vehicles of various makes and models were reentered and the nozzle was touched during refueling. Some resulted in extensive damage to the vehicle, to the station, and to the customer, including one fatality.
- Fifteen fires did not involve either of these two situations. In all but one of these 15 cases the fueler was not the source of the electrical discharge and the source of ignition cannot easily be determined.
- PEI received insufficient information on seventeen fires reported by NHTSA to confidently categorize them.
- Ninety four per cent of the people involved in fires where footwear was identified had on rubber-soled shoes.

Recommended Actions:

Avoid getting back into your vehicle while filling it with gasoline. If you absolutely must get into your vehicle while the gas is pumping, make sure that when you get out you close the door and TOUCH METAL before pulling the nozzle out.

Estimated Savings/Cost Avoidance: Up to $30,000 for a vehicle fire and hundreds of thousands of dollars to treat severe burns.

Priority Descriptor: YELLOW/Caution

Work / Function: Business and Support Services; Driving; Fire Protection; Transportation

Hanford Functional Categories: N/A

Hazard: Fire

ISM Core Function: Analyze hazards; Develop/Implement Controls

Originator: Bob Renkes, Petroleum Equipment Institute, (918) 494-9696, fax (918) 491-9895, rrenkes@pei.org. Passed to Fluor Hanford Lessons Learned by Rex Jordan, Hanford Fire Marshall, (509) 373-4022

Contact: Fluor Hanford Lessons Learned Coordinator; (509) 373-7664; FAX 372-3950; e-mail: PHMC_Lessons_Learned@rl.gov

Authorized Derivative Classifier: Not required

Reviewing Official: John Bickford

Keywords: fire, refueling, static discharge, gasoline

References: "Stop Static" report by PEI (http://www.pei.org/static/index.htm)

POST JOB CONFERENCE

1. WORK PACKAGE TITLE: Demolition of Building 31/31A
2. WORK PACKAGE NUMBER. BOSS-36952 - 00.

What went well?

What could be improved?

Other Comments:

Items Requiring Further Action:

POST-JOB CONFERENCE ATTENDEES

NAME	HP	NAME	HP

LESSONS LEARNED INPUT FORM

Title: (This is a brief descriptive title)

Lessons Learned Statement: (This is a brief, two or three sentence, summary of the lesson that was learned)

Discussion: (This is background and detail of what happened)

Analysis: (Discussion of what went wrong, or right and what should be done in the future)

Recommended Actions: (Identify specific corrective actions)

Submitted by: _____ Date: _____

OPTIONAL

Mail to: Lessons Learned Program Manager, or appropriate Project or Functional Manager