

**Annual Assessment of the
Effectiveness of
Institutional Controls
at the Mound, Ohio, Site
Miamisburg, Ohio**

June 2016



U.S. DEPARTMENT OF
ENERGY

Legacy
Management

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Abbreviations

BOI	BOI Solutions Inc.
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CRP	Comprehensive Reuse Plan
DOE	U.S. Department of Energy
EMCBC	Environmental Management Consolidated Business Center
EPA	U.S. Environmental Protection Agency
ES	Environmental Summary
IC	institutional control
LM	Office of Legacy Management
LTS&M Plan	Long-Term Surveillance and Maintenance Plan
MDC	Mound Development Corporation (formerly MMCIC)
MMCIC	Miamisburg Mound Community Improvement Corporation
O&M Plan	Operations and Maintenance Plan
ODH	Ohio Department of Health
ODNR	Ohio Department of Natural Resources
Ohio EPA	Ohio Environmental Protection Agency
OU-1	Operable Unit 1
RCRA	Resource Conservation and Recovery Act
ROD	Record of Decision

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1.0 Introduction

This report documents the U.S. Department of Energy (DOE) Office of Legacy Management (LM) 2016 annual assessment of the effectiveness of sitewide institutional controls (ICs) for the entire Mound, Ohio, Site¹ in Miamisburg for the period from May 1, 2015, to April 30, 2016.

ICs, which are part of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) remedies for the site, are nonengineered instruments, such as administrative and legal controls, that help minimize the potential for human exposure to contamination and protect the integrity of the remedy. The site has completed all CERCLA Section 120(h) [abbreviated as CERCLA 120(h)] requirements for property transfer as an industrial-use site.

The annual IC assessment process and this IC assessment report follow requirements in three documents that make up the Long-Term Stewardship Plan for the Mound site:

- *Operations and Maintenance Plan for the U.S. Department of Energy Mound, Ohio, Site* (DOE 2015c) (O&M Plan)
- *Long-Term Surveillance and Maintenance Plan for the U.S. Department of Energy Mound, Ohio, Site* (DOE 2015b) (LTS&M Plan)
- *Community Involvement Plan for the U.S. Department of Energy Mound, Ohio, Site* (DOE 2015a)

The Mound site ICs are defined in the Records of Decision (RODs) and the CERCLA 120(h) Summary Notice of Hazardous Substances Environmental Summaries (ESS) described in Section 4.0 (Table 1) of this report. The ICs were developed by the DOE Office of Environmental Management (EM) with input from the public; the City of Miamisburg, Ohio; the U.S. Environmental Protection Agency (EPA); the Ohio Environmental Protection Agency (Ohio EPA); the Ohio Department of Health (ODH); and the Mound Development Corporation (MDC) (formerly named the Miamisburg Mound Community Improvement Corporation [MMCIC]).

The Mound site ICs run with the land in the form of (1) restrictions and covenants in quitclaim or limited warranty deeds or (2) activity and use limitations in the environmental covenant and the lease agreement between Environmental Management Consolidated Business Center (EMCBC) and MDC for the DOE-owned Parcels 6, 7, 8, and 9.

Although not an IC, groundwater monitoring is required by CERCLA remedies for some land parcels. The groundwater monitoring information for the Phase I Parcel and Parcels 6, 7, and 8 is presented in an annual groundwater monitoring report due June 13 of each year.

In April 2016, Ohio EPA's Resource Conservation and Recovery Act (RCRA) organization memorialized its decision to not continue a separate IC inspection at the Mound site, as documented in the letter in Appendix A.

¹ The Mound site has also been called the Mound Laboratory, Mound Laboratories, the Mound Plant (EPA ID OH6890008984), the USDOE Mound Plant, the Mound Facility, the USDOE Mound Facility, the Miamisburg Environmental Management Project (MEMP), and the Miamisburg Closure Project (MCP). Currently, LM uses "Mound, Ohio, Site" as the formal name of the site.

The 2016 annual IC assessment determined that the ICs continue to function as designed, adequate oversight mechanisms are in place to identify possible violations of ICs, and adequate resources are available to correct or mitigate any problems if violations occur.

2.0 Period of Review

This annual assessment covers the period from May 1, 2015, to April 30, 2016. It identifies information that is new since the last reporting period, such as new construction, demolition, or excavation; lot splits or the sale of parcels to new landowners; and new permit applications filed by property owners or their agents. Previous annual assessments are available in the CERCLA Public Reading Room and online at the LM Mound website (<http://www.lm.doe.gov/land/sites/oh/mound/mound.htm>).

LM contacted EMCBC, EPA, Ohio EPA, ODH, MDC, and the City of Miamisburg 30 days before the visual inspection. LM submits the annual IC assessment report to EPA and Ohio EPA no later than June 13 of each year.

3.0 Scope of Assessment

To evaluate changes in the site that could indicate an IC violation, this IC assessment included:

- Physical inspections of the site, including photos of changed conditions related to ICs
- Contact with the property owners to ensure that they understand the ICs
- Contact with MDC and City of Miamisburg personnel to review the ICs
- Reviews of City of Miamisburg records to examine changed conditions, such as:
 - Permits, including construction, street opening, and occupancy
 - Planning-commission records
 - Zoning modifications
 - Requests for approvals of parking lots and other changes that do not require building permits
- Reviews of any IC-related requests to EPA and Ohio EPA to approve land uses, soil removal, groundwater use, penetration, and removal of concrete in the T Building
- Reviews of Montgomery County property records to determine if property ownership has changed and to ensure that IC restrictions were carried forward into the legal property documents, and searches for correspondence from property owners that notified Ohio EPA of property transfers as required by quitclaim deeds
- Reviews of the Ohio Department of Natural Resources (ODNR) website and the posted well-drilling information to determine if unauthorized wells were drilled onsite
- A walkdown with EMCBC, EPA, Ohio EPA, ODH, the City of Miamisburg, and MDC on April 14, 2016

IC inspectors followed the checklist provided in Appendix A of this report.

Groundwater monitoring is also part of the CERCLA remedies for Phase I, Operable Unit (OU) -1, and Parcels 6, 7, and 8, but it is not an IC. Information on groundwater monitoring for Phase I and Parcels 6, 7, and 8 is included in an annual groundwater monitoring report. The OU-1 pump and treatment and groundwater monitoring analysis, which is currently reported in Environmental Restoration Monthly Reports, will be included in the annual groundwater monitoring report when the OU-1 exit strategy is finalized.

4.0 CERCLA Remedy Documentation

Table 1, taken from the O&M Plan, lists the eight Mound site RODs with the ROD and ES titles and their approval dates. The RODs define the CERCLA remedies that include the ICs. The ESs document that the parcel meets the requirements of CERCLA Section 120(h).

Table 1. Mound Site ROD and CERCLA Section 102(h) ES Information

ROD Parcel ID	Document	Approval Date
D	<i>Record of Decision for Release Block D, Mound Plant, Miamisburg, Ohio, Final (DOE 1999c)</i>	February 1999
	<i>CERCLA 120(h) Summary Notice of Hazardous Substances, Release Block D, Mound Plant, Miamisburg, Ohio, Final (DOE 1999a)</i>	February 1999
H	<i>Record of Decision for Release Block H, Mound Plant, Miamisburg, Ohio, Final (DOE 1999d)</i>	June 1999
	<i>CERCLA 120(h) Summary Notice of Hazardous Substances, Release Block H, Mound Plant, Miamisburg, Ohio, Final (DOE 1999b)</i>	July 1999
3	<i>Parcel 3 Record of Decision, Mound Plant, Miamisburg, Ohio, Final (DOE 2001b)</i>	September 2001
	<i>Parcel 3 Environmental Summary, CERCLA 120(h) Summary Notice of Hazardous Substances, Mound Plant, Miamisburg, Ohio, Final (DOE 2001a)</i>	September 2001
4	<i>Parcel 4 Record of Decision, Mound Plant, Miamisburg, Ohio, Final (DOE 2001d)</i>	February 2001
	<i>Parcel 4 Environmental Summary, CERCLA 120(h) Summary Notice of Hazardous Substances, Mound Plant, Miamisburg, Ohio, Final (DOE 2001c)</i>	March 2001
6, 7, 8 (includes former Parcel 6A)	<i>Parcels 6, 7, and 8 Record of Decision, Miamisburg Closure Project, Miamisburg, Ohio, Final (DOE 2009b)</i>	August 2009
	<i>Parcels 6, 7, and 8 Environmental Summary, CERCLA 120(h) Summary Notice of Hazardous Substances, Final (DOE 2010)</i>	August 2010
9 (OU-1 and expanded area)	<i>Operable Unit 1 Record of Decision, Final (DOE 1995)</i>	June 1995
	<i>Parcel 9 Environmental Summary, CERCLA 120(h) Summary Notice of Hazardous Substances, Final (DOE 2011b)</i>	July 2011
	<i>Amendment of the Operable Unit 1 Record of Decision, U.S. Department of Energy, Mound Closure Project, Final (DOE 2011a)</i>	August 2011
Phase I (A, B, C)	<i>Phase I Record of Decision, Miamisburg Closure Project, Final (DOE 2003b)</i>	July 2003
	<i>Phase I Environmental Summary, CERCLA 120(h) Summary Notice of Hazardous Substances, Miamisburg Closure Project, Final (DOE 2003a)</i>	December 2003
OU-4	<i>Miami-Erie Canal Record of Decision, Miamisburg Closure Project, Final, Revision 0, (DOE 2004)</i>	September 2004
	OU-4, located on City of Miamisburg property, was remediated to an unlimited use end state. No ES was required or issued	

Table 2, also taken from the O&M Plan, summarizes the final ROD parcel identifications (I.D. numbers, dates, acreages, remedies, legal instruments, and IC objectives).

Figure 1 shows the ROD parcels outlined in purple within the 1998 Mound Plant property boundary outlined in red. The OU-4 former canal area located west of the site is outlined in gold. There are no use restrictions or ICs required for that OU-4 area.

As property transfers, the site will be divided into different real-estate lot configurations, and these new lots will likely overlap ROD parcels boundaries. Nonetheless, the ROD parcel boundaries will still be relevant because they identify which ROD covers which area of the site, regardless of new property lines.

Section 9.2.3, Section 9.2.4, and Appendix B provide details on Montgomery County property records, current property ownership status, and other agreements relating to property.

Table 2. Summary of RODs, Remedies, ICs, and Legal Instruments

ROD Parcel ID	Former Names	ROD Date	Acreage in ROD	Remedy	Owner	Instrument ^b	Objectives of ICs
OU-1	Area B, landfill area	See Parcel 9	See Parcel 9	See Parcel 9	See Parcel 9	See Parcel 9	Restrict land use to industrial only.
D	Portion of Release Block D 5.519 acres	1999		ICs	Dyrdek Group	Deed restrictions in Limited Warranty Deed dated December 23, 2014 (File No. 2014-00069587)	Prohibit the removal of soil.
D	Release Block D	1999	12.43	ICs	MDC and City of Miamisburg	Deed restrictions in EM quitclaim deed dated February 11, 2009, (File No. DEED-09-011643) and MDC quitclaim deed November 13, 2013 (File No. 2013-00079430)	Prohibit the use of groundwater.
H	Release Block H	1999	14.29	ICs			
3	None	2001	5.581	ICs			
4	New or South property ^a	2001	94.838	ICs			
Phase I	A	2003	2.542	Monitored natural attenuation			Prohibit the removal of concrete floor material in specified rooms of T Building.
	B		42.882				
	C		6.568	ICs			
6	6, 6A, 7, and 8	2009	13.636	Monitored natural attenuation	DOE leased to MDC	Appendix No. 1 to General Purpose Lease Agreement (December 2012)	Prohibit the penetration of concrete floor material in specified rooms of T Building.
7			42.307				
8			45.247				
			2.352 or 3.320	ICs	BOI Solutions	Deed restrictions in MDC limited warranty deed dated December 14, 2012 (File No. 2012-00084260)	Provide site access for federal and state agencies for taking response actions, including sampling and monitoring.
	5.350						
	Tract 1 Tract 2 (part of 6A and 7)		0.271				
9 (OU-1)	Includes OU-1, PRS 441, former rail spur, and spoils areas	OU-1 ROD 1995 and OU-1 ROD amendment 2011	23.148	Hydraulic containment using groundwater extraction Surface water controls Long-term groundwater monitoring ICs	DOE leased to MDC	Environmental Covenant approved December 22, 2011 (Recorded for entire site as a Special Instrument Deed 2012-00004722 on January 24, 2012) Note: EMCBC filed this for all lots within the original Mound site boundary.	
OU-4	Miami-Erie Canal	2004	On City property	No action	City of Miamisburg	None required	No ICs required

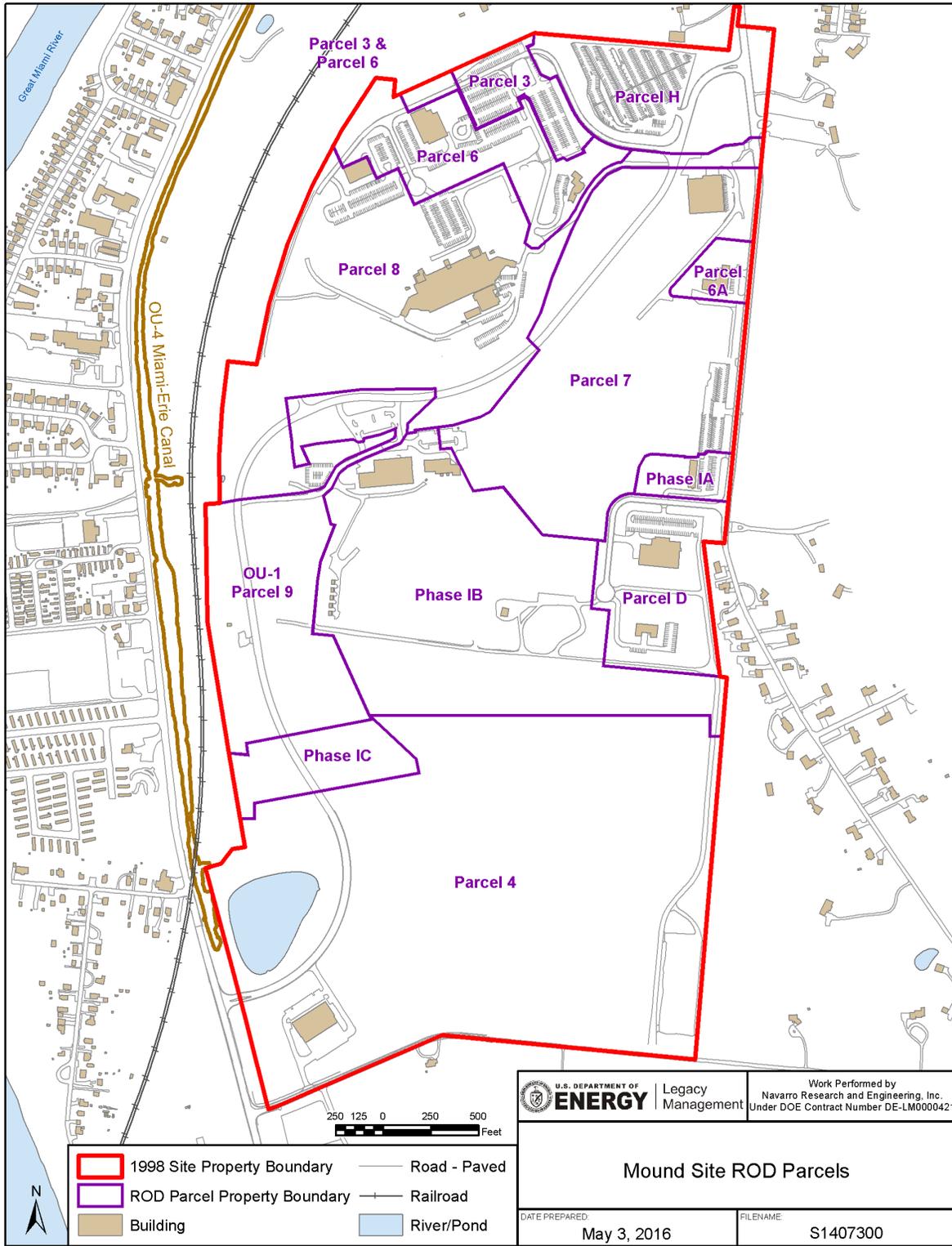
Notes:

^a Portions of the New or South Property are included in Phase I and Parcel 9 areas. See the reference (DOE 2012a).

^b Most recent deed or relevant instrument.

Abbreviation:

EM= Office of Environmental Management



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Figure 1. Mound Site ROD Parcels

5.0 Institutional Controls

5.1 Overview

ICs are an important component of the remedies selected for the Mound site. EPA defines ICs as nonengineered instruments, such as administrative and legal controls, that help minimize the potential for human exposure to contamination, protect the integrity of the remedy, or both.

DOE remediated the Mound site property to EPA's risk-based standards for industrial/commercial use only. Because the site is not approved for unlimited use, ICs were imposed as part of the CERCLA remedy defined in each ROD listed in Table 1. The Mound ICs were developed with input from the public, the City of Miamisburg, the regulators, and MDC.

The Mound site ICs run with the land in the form of (1) restrictions and covenants in the quitclaim or limited warranty deeds or (2) activity and use limitations in the environmental covenant and the lease agreement. The quitclaim deeds and environmental covenant documents are recorded with Montgomery County, Ohio, so that all future property owners will know about the deed restrictions.

Additional information on ICs can be found in *Institutional Controls: A Citizen's Guide to Understanding Institutional Controls at Superfund, Brownfields, Federal Facilities, Underground Storage Tanks, and Resource Conservation and Recovery Act Cleanups* (EPA 2005).

5.2 Mound Site ICs

There are four (4) site-wide ICs and two (2) building specific ICs:

1. **Prohibit the removal of soil** from within the original DOE Mound site property boundaries without prior written approval from EPA, Ohio EPA, and ODH. See Section 5.3 below for exemptions.
2. **Prohibit the extraction or consumption of, exposure to, or the use in any way of the groundwater** underlying the site without prior written approval from EPA and Ohio EPA.
3. **Maintain industrial or commercial land use and prohibit residential land use.** Each parcel ROD identifies land uses that will not be permitted, but the list is not all-inclusive. Parcels may not be used for any residential or farming activities or for any activities that could result in the chronic exposure of children less than 18 years of age to soil or groundwater from the premises. Restricted uses include:
 - Single- or multifamily dwellings or rental units
 - Daycare facilities
 - Schools or other educational facilities for children less than 18 years of age
 - Community centers, playgrounds, or other recreational or religious facilities for children less than 18 years of age
4. **Prohibit the removal of concrete floor material** from specified rooms of T Building to offsite locations without prior written approval from EPA, Ohio EPA, and ODH.

5. **Prohibit the penetration of concrete floors** in specified rooms of the T Building without prior written approval from EPA, Ohio EPA, and ODH.
6. **Allow site access for federal and state agencies** for sampling and monitoring.

5.3 Areas Exempted from Soil-Removal Restriction IC

Several areas shown in purple on Figure 2 are exempted from the soil removal IC restriction. The documents that contain these exemptions are detailed in Section 9.2.4.

The RODs and quitclaim deeds contain parcel-specific deed-restriction language. RODs and other CERCLA administrative record documents are available in the CERCLA Public Reading Room and electronically on the LM Mound website (<http://www.lm.doe.gov/land/sites/oh/mound/mound.htm>).

6.0 Aerial View of the Mound Site Property

Figure 3 is an aerial photo, taken in February 2016, showing the entire site looking north.

Appendix F contains a March 2016 legal size aerial photo showing the ROD boundaries. Aerial photos are normally taken during each CERCLA Five-Year Review.

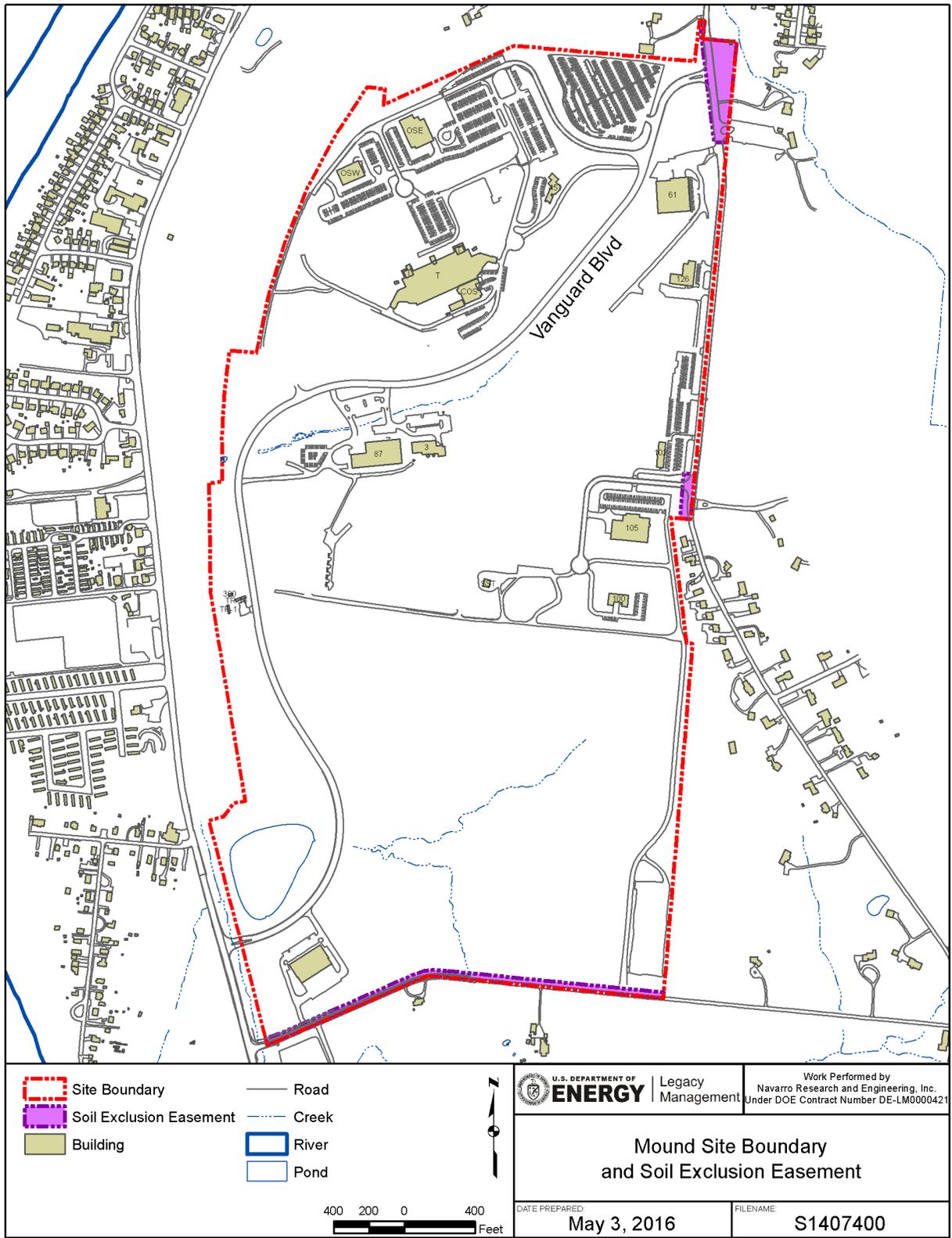


Figure 2. Soil-Removal Exclusion Areas within the Original Mound Site Boundary



Figure 3. Mound Site Looking North (February 2016)

7.0 Summary of 2015 Annual Assessment and 2011 CERCLA Five-Year Review

7.1 2015 Annual Assessment

7.1.1 Summary

As stated in the *Annual Assessment of the Effectiveness of Institutional Controls at the Mound Site, Miamisburg, Ohio* (DOE 2015d), the annual assessment concluded that the Mound site ICs functioned as designed, adequate oversight mechanisms appeared to be in place to identify possible violations, and adequate resources were available to correct or mitigate any problems if a violation were to occur.

7.1.2 Recommendations or Findings

The 2016 annual assessment reviewed the status of the two recommendations from the 2015 annual assessment:

1. MDC continue to remove debris from grate leading to storm drains uphill of OU-1.
2. Core Team (LM, EPA, and Ohio EPA) discuss and recommend how the road and right-of-way acreage within the 1998 site boundary should be handled with regard to property ownership and IC compliance.

7.2 2011 CERCLA Five-Year Review

7.2.1 Five-Year Review Summary

In 2011, LM conducted a CERCLA Five-Year Review for the site, which evaluated the implementation and performance of the selected site remedies. The *Third Five-Year Review for the Mound, Ohio, Site, Miamisburg, Ohio* (DOE 2011c) stated:

The ICs implemented at the Mound Site are protective of human health and the environment because they are functioning as intended. The groundwater remedies for Phase I and Parcels 6, 7, and 8 are expected to be protective of human health and the environment upon attainment of cleanup goals. In the interim, exposure pathways are being controlled through ICs. The remedy for OU-1 is protective of human health and the environment as exposure pathways are being controlled through plume containment and Federal ownership of the land. Controlled access to the landfill is no longer necessary since excavation was completed; however, for the remedy to be protective in the long-term, ICs to restrict soil removal and groundwater use need to be implemented.

7.2.2 Five-Year Review Recommendations

The 2016 annual IC assessment reviewed the status of the three recommendations from the Third Five-Year Review for the Mound site (DOE 2011c) identified the following:

1. Verify that the quitclaim deed for Parcels 6, 7, and 8 is appropriately recorded and is free and clear of all liens and encumbrances.
2. Finalize the sitewide IC Management/Land Use Control Plan (with CERCLA Summary).
3. Finalize the sitewide O&M Plan for groundwater remedies.

7.2.3 EPA-Identified Issues to be Addressed in the 2016 Five-Year Review

In the September 27, 2011, approval letter for the Third Five-Year Review, EPA concurred with the protectiveness statements and approved the report. EPA also identified the following issues that must be addressed in future Five-Year Reviews at the Mound site. See Section 11.0 for a resolution of these issues:

- While the Summary Form on p. xii makes title work for Parcels 6, 7, and 8 a follow-up action, it leaves out title work for Parcels D, H, 3, and 4 and Phase 1. Title work must be completed for all parcels as part of the Five-Year Review of the ICs process.
- EPA, Ohio EPA, and DOE are currently finalizing a *Sitewide IC Management and Land Use Control Plan* for the DOE Mound property. This plan should be included as an appendix in future Five-Year Reviews to aid in the review process.

8.0 Physical Inspections Performed

8.1 Preliminary Physical Inspections

8.1.1 Overview

Navarro Research and Engineering, Inc. (Navarro), personnel conducted preliminary physical inspections on March 8 and April 7, 2016, before hosting the physical walkdown with the regulators, MDC, and the City of Miamisburg on April 14, 2016. Those preliminary inspections looked for violations of ICs (such as soil removal, well installation, and nonindustrial/noncommercial use) and reviewed the physical conditions of groundwater monitoring wells and seeps.

There were no observations of noncompliance with the ICs in any ROD parcel for the Mound site, including Parcels 3, 4, D, and H; Phase I (A, B, and C); Parcels 6, 7, and 8; and Parcel 9. In particular, there was no evidence of unauthorized well installation or soil removal or site activities inconsistent with industrial/commercial use within any ROD parcel.

The following sections describe the results of the preliminary inspections and the physical walkdown on April 14, 2016. Appendix A contains the completed IC checklist and associated documents. Comments from participants in the walkdown are included in the checklist.

8.1.2 Changed Conditions Identified During Preliminary Physical Inspections in the Review Period

The following sections document the changed site conditions identified during the review period. These do not represent IC violations.

8.1.2.1 Painting and Paving

MDC painted the exteriors of Buildings 45 and 61 and repaved areas around Building 61.

8.1.2.2 Building Modification

A large backup generator was installed for the OSW Building, 460 Vantage Point, which houses the Montgomery County Emergency Call Center. Navarro advised Larry Kelly, EMCBC, and Gwen Hooten, LM, of this modification on DOE property observed on January 11, 2016. Because this is a DOE-owned building leased by MDC, the building drawings should be updated to reflect this building modification. (Figure 4 and Figure 5)



Figure 4. Newly Installed Emergency Generator Located West of OSW Building



Figure 5. Transmission Lines from Emergency Generator Installed on OSW Building

8.1.2.3 Underground Cables

Underground fiber optic cables were installed on Vanguard Blvd. north of the Excelitas parking area. Navarro observed work underway on January 6, 2016, and advised Larry Kelly, EMCBC, and Gwen Hooten, LM. Because the modification is within a DOE-owned parcel, the site utility drawing should be updated of reflect this installation. (Figure 6 and Figure 7)



Figure 6. Work Observed on January 6, 2016, and Reported to EMCBC



Figure 7. Marker for Underground Fiber Optic Cables Installed North of Excelitas Parking Lot on March 8, 2016

8.1.2.4 Construction on Benner Road

The City of Miamisburg contractor began work on the pumping station located on Benner Road in Parcel K46 01507 0039 part of ROD Parcel 4 (see Figure 8 and Figure 9). The Navarro IC assessor was advised that the City of Miamisburg was overseeing this work to assure IC compliance.

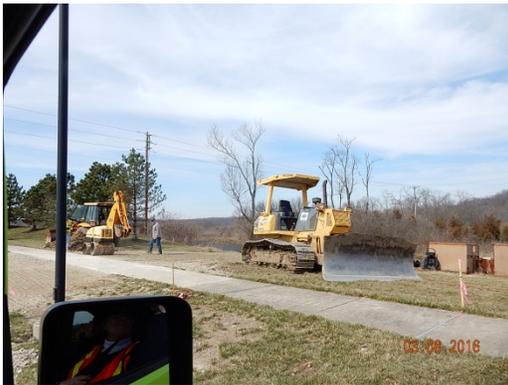


Figure 8. Construction Underway for City of Miamisburg Pumping Station on Benner Road



Figure 9. Construction Activities for New Pumping Station Observed on March 8, 2016

8.1.2.5 Organization Changes

Two changes in Mound site-related organizations occurred during the review period:

- Navarro replaced Stoller Newport News Nuclear, Inc., a wholly owned subsidiary of Huntington Ingalls Industries, Inc., as the LMS prime contractor on October 1, 2015.
- MDC restructured, which resulted in personnel changes during 2015.

8.1.3 OU-1 Pump-and-Treatment System

The pump-and-treatment system remained in standby mode to support the OU-1 Enhanced Attenuation Field Demonstration Project. Navarro personnel advised that this system is inspected monthly in accordance with a checklist in the Navarro pump-and-treatment maintenance procedure manual.

8.1.4 T Building Special IC Areas

8.1.4.1 Background

The physical inspections included only the areas within the T Building to which special ICs apply (i.e., survey units IC-06, IC-07, IC-08, IC-09, IC-10, IC-11, IC-12, IC-15, IC-16, IC-21, IS-10 and SYS-02A/B/C, as shown in Figure C-1 in Appendix C). The special ICs prohibit (1) the penetration of concrete in some areas covered with red concrete and (2) the removal of concrete in other areas, unless there has been prior approval from EPA, Ohio EPA and ODH. The red concrete covers the IC-10 and IC-21 survey units.

Appendix C provides information regarding the T Building special IC areas. This appendix includes a drawing (Figure C-1), which clearly shows the special IC areas. Appendix C also includes an agreement and a position paper, T Building Special IC Areas Core Team Agreement and Position Paper, (DOE 2009a), which provided policy guidelines. Finally, Appendix C includes the 2010 baseline photos of each room covered by the special ICs.

8.1.4.2 Water in Rooms

Inspectors observed water in the special IC rooms during the March 8, 2016, inspection of the T Building. MDC's maintenance contractor from Turner Properties (Turner) advised that they had identified the source of the water as a failed sump pump in the T Building West Head House allowing water to enter the airshaft area that opens into Room 99. They were working to remedy the problem.

In the past, water was found during the 2013 and 2014 assessments but was not found during the 2015 physical inspection. MDC advised in 2013 and 2014, that the Room 99 sump pump had failed, the sump overflowed, and water flowed into other areas through drain lines under the floor. Figure 10 shows the dry sump pump area in Room 99 in 2015. Figure 11 through Figure 21 are the other photos taken in T Building on March 8, 2016.



Figure 10. Gary Weidenbach, Navarro, Near the Repaired Sump Pump in T Building Room 99 During the 2015 IC Inspection



Figure 11. Wet Areas on Floor to the Left of the Sump Pump in Room 99 During the March 8, 2016, IC Inspection



Figure 12. Entry Door to SYS-02A/B/C Air Shaft to West Head House March 8, 2016



Figure 13. Water contained in Sump Area in Room 62 March 8, 2016



Figure 14. Water contained in Sump Area in Room 63 March 8, 2016



Figure 15. Ken Green, Turner, and Gary Weidenbach, Navarro, Near Sump Area in Room 63 March 8, 2016



Figure 16. Room 57 Looking West from Red Concrete Area March 8, 2016



Figure 17. Room 57 Looking East Toward Red Concrete Area March 8, 2016



Figure 18. Room 58 Looking West from Red Concrete March 8, 2016



Figure 19. Room 58 Looking East Toward Red Concrete Area March 8, 2016



Figure 20. Water East of Red Concrete March 8, 2016



Figure 21. Water East of Red Concrete March 8, 2016

During a follow-up inspection on April 7, 2016, with Turner personnel, Navarro noted that Turner personnel had installed a new sump pump in the West Head House. Turner personnel stated that no new water had entered the building after that installation. Navarro observed that

the original water that had entered the building was still present in these same areas with water migrating further east of the red concrete than observed on March 8, 2016 (Figure 22, Figure 23, Figure 24, and Figure 25).



Figure 22. T Building Area East of Red Concrete on April 7, 2016



Figure 23. T Building Area East of Red Concrete on April 7, 2016



Figure 24. Room 57 Looking West from Red Concrete on April 7, 2016



Figure 25. Room 58 Looking West from Red Concrete on April 7, 2016

Turner personnel pointed out a clear oil-like residue in the water in some gravel areas east of the red concrete where concrete had been removed during remediation of the building in 2006. MDC/Turner had already initiated an analysis sampling of that residue for hazardous materials by an environmental firm (EHS Technology Group LLC).

8.1.4.3 Sealed Cracks in the Red Concrete

Inspectors have noted cracks in the red concrete covering floors in the special IC areas of T Building since the 2011 annual IC assessment.

As discussed in the 2014 annual IC assessment report, LM conducted extensive document and records reviews and interviews with individual personnel with historical knowledge of the cleanup. LM concluded that the cracks are not a health and safety issue as long as the concrete remains structurally sound. However, as a best management practice, LM filled the cracks in February 2015 with ATC 100, which is a single-component, elastomeric sealant without free isocyanates or solvents (volatile organic compounds).

Appendix D contains the 2016 photographs of the sealed cracks in the previously tracked areas A–I. The filler appears to continue to be sealing the cracks. Appendix D also includes the product specification sheet for the filler.

8.1.5 Signs Observed Near Pond

Inspectors observed two signs, which state “Recreational Use Prohibited,” at the pond used for retaining and detaining storm-water runoff in the southwestern part of Parcel 4.

The signs are not an IC; however, the Mound Core Team agreed on the following wording regarding the signage beginning with the 2011 annual IC assessment:

The second five-year review for the DOE Mound site recommended that the issue of adequate signage around the Parcel 4 retention basin be addressed by DOE, EPA, and Ohio EPA. Signs placed around the basin to inform area visitors that recreational use around the basin is prohibited have been damaged and removed on several occasions by members of the public.

After reconsidering the exposure assumptions that were used to develop the industrial commercial cleanup standards for the Mound site, DOE, EPA, and Ohio EPA have reached the conclusion that occasional visits to the retention pond by area residents will not result in an unacceptable risk to the visitors. Even so, DOE and the MDC will continue to monitor and discourage these unauthorized uses of the Parcel 4 retention basin area. No further action is required to assure protectiveness of human health or the environment.

8.1.6 Other Observations, Monitoring Wells

8.1.6.1 Monitoring Wells in Good Condition

This IC assessment confirmed that the wells installed and abandoned during the review period were added to the ODNR website.

8.1.6.2 Crosswalk of Mound Site Wells with ODNR Numbers

LM continued to maintain the crosswalk of DOE well numbers and the corresponding ODNR identification numbers. This table is a reference in the LTS&M Plan (DOE 2015b) for future IC assessments to search the ODNR website for new wells drilled onsite.

8.1.6.3 Wells 0301 and 0311 Abandoned

The 2015 IC assessment report noted that two offsite Mound wells 0301 and 0311 were located within the construction area of a proposed City sewer structure.

The 2016 IC assessment found that these wells were abandoned and removed in September 2015 after the Core Team agreed that the wells were no longer required for Parcels 6, 7, and 8 remedy monitoring. The inspector was unable to enter the City construction area during the March preliminary physical inspection.

8.1.6.4 Wells 0333 and 0334 Abandoned

LM abandoned and removed offsite wells 0333 and 0334, which were no longer included in any CERCLA site remedies. The Core Team agreed with the recommendation to discontinue sampling. The City of Miamisburg did not wish to use the wells. The inspector was able to visually verify their removal during the March 2016 preliminary physical inspection.

8.1.6.5 Well 0138 Raised for City Construction

Navarro groundwater samplers advised that the City of Miamisburg was adding dirt into a former pond area near offsite well 0138, that was raising the ground level around the well.

Navarro raised the well casing by 10 feet and worked with the City of Miamisburg engineer to protect the well during construction. The well is sealed from surface contamination and water runoff with a bentonite seal around the old well casing. Navarro ensured that the rubber gaskets were in place when adding casing. There is a temporary orange cone on the well, and Navarro will install a lockable protective casing and perhaps protective bollards when the city work is complete. The City advised Navarro that any ponding issues will be corrected during the final grading. Photos from March indicate that construction is still underway around well 0138.



Figure 26. Site of Abandoned Wells 0333 and 0334 Near the Great Miami River Levy



Figure 27. Navarro Raised Well 0138 by 10 Feet to Accommodate City of Miamisburg Filling the Area with Dirt

8.2 Physical Walkdown with Regulators

The walkdown for the annual IC assessment and the 2016 CERCLA five-year review with the regulators and stakeholders occurred on April 14, 2016. Gwen Hooten, LM Mound Site Manager, began the walkdown at the MDC office with a presentation that defined the scope of the annual assessment and presented the results of the preliminary inspections. A copy of the presentation is included in Appendix A. Participants were given a safety briefing, a copy of the presentation, and the draft IC checklist for the walkdown.

Participants in the IC assessment presentation and walkdown lead by Gwen Hooten, LM Mound Site Manager, included:

- Ken Armstrong, EMCBC, Assistant Director
- Karen Arthur, EHS, Environmental Engineer
- Anthony Campbell, Ohio EPA, Site Coordinator
- Rebecca Cato, Navarro, Project Hydrogeologist/Environmental Services Lead
- Eric Cluxton, MDC, President
- Shannon Dettmer, ODH, Senior Health Physicist
- Chuck Friedman, Navarro, Environmental Compliance
- Katie Heyob, Ohio EPA, Groundwater (presentation only)
- Lorrie Huber, MDC, Administrative Assistant (presentation only)
- Larry Kelly, EMCBC, Realty Specialist
- Melissa Lutz, Navarro, Mound Team Leader
- Joyce Massie, Navarro Project Support (subcontractor)
- Allison Reed, Ohio EPA, Geologist 4
- David Seely, EPA, Remedial Project Manager
- Sue Smiley, EMCBC, Program Analyst
- Ellen Stanifer, City of Miamisburg, Environmental Coordinator
- Gary Weidenbach, Navarro, Operations Manager

The walkdown included stops at the T Building to observe the special IC areas covered in red concrete, the RCRA Burn Area, and OU-1 area as shown in Figures 28 through 47.

Participants observed that there were still wet areas in the Special IC areas of T Building (Figures 32 through 41). The EHS representative working for MDC pointed out the water puddle in the gravel that had a clear, oil-like layer. She advised that EHS's testing did not identify any hazardous substances.

Gwen Hooten led the tour outside to the T Building West Head House where the sump pump had failed as noted during the preliminary physical March 8, 2016, inspection. The water had overflowed inside the West Head House into the air shaft connecting to T Building Room 99. This overflow then entered the special IC areas. It was not clear whether this was ground water or rain water entering the West Head House. The outer door was damaged as shown in Figure 42 and Figure 43. Participants observed the new sump pump installation rerouted the water through PVC piping out of the doors shown in Figure 42 and Figure 44.

After the walkdown, Shannon Dettmer, ODH, submitted the following written comments to the IC Assessment Checklist:

“(1) Any water that seeps through ANY red concrete should be sampled and analyzed for the potential radiological (and chemical) contaminants of concern for that particular room.

(2) The head house door that was held closed by a rope is a concern. I question how well the institutional controls are being verified by MDC. If MDC checked the site regularly and reasonably thoroughly, I have my doubts that the door would have been missed.”



Figure 28. Attendees at IC Walkdown Presentation



Figure 29. Attendees at IC Walkdown Presentation



Figure 30. IC Walkdown Outside T Building Entrance



Figure 31. IC Walkdown Outside T Building. (l-r) Chuck Friedman, Ellen Stanifer, Shannon Dettmer, Gwen Hooten, Melissa Lutz, Eric Cluxton



Figure 32. Area East of Red Concrete



Figure 33. Two Wet Areas Beside Red Concrete



Figure 34. IC Walkdown Participants East of Red Concrete Special IC Area



Figure 35. IC Walkdown Participants Near Wet Gravel Area East of Red Concrete Area



Figure 36. Wet Gravel Area East of Red Concrete



Figure 37. Wet Gravel Area East of Red Concrete



Figure 38. Gwen Hooten, Eric Cluxton, and David Seely Looking into Room 57 During IC Walkdown



Figure 39. Room 57 Wet Areas Observed During IC Walkdown



Figure 40. IC Walkdown Participants on Red Concrete Area



Figure 41. Room 58 Wet Areas Observed During IC Walkdown



Figure 42. IC Walkdown Participants Outside T Building West Head House



Figure 43. IC Walkdown Participants Observing Damaged Door of T Building West Head House



Figure 44. Plastic Pipe from Sump Pump in T Building West Head House from T Building West Head House



Figure 45. David Seely, EPA, During IC Walkdown in T Building West Head House



Figure 46. (l-r) Rebecca Cato, Navarro; Anthony Campbell, Ohio EPA; David Seely, EPA; Ken Armstrong, EMCBC; at RCRA Burn Area During Annual IC Walkdown



Figure 47. (l-r) Sue Smiley, EMCBC; Gwen Hooten, LM; David Seely, EPA; Eric Cluxton, MDC; Rebecca Cato, Navarro; Larry Kelly, EMCBC; Gary Weidenbach, Navarro; and Ellen Stanifer, City of Miamisburg, at OU-1 Area

9.0 Interviews and Record Reviews

9.1 Interviews with Property Owners

9.1.1 Mound Site Landowners - Institutional Control Compliance Form

Public information is an important component of DOE's post-closure responsibilities. Informing property owners about their responsibility to comply with the ICs is an essential element of DOE's public-information campaign. It is also necessary to inform the general public of the importance of adhering to the sitewide ICs.

When the annual IC assessment report is completed and made available in the CERCLA Reading Room and on the LM website, DOE issues a public notice that describes the ICs. Postings (such as signs near the MDC pond, which state that recreational use is prohibited) are not ICs themselves; however, are crucial to informing the public and serve to enlist public cooperation in observing the ICs.

As discussed in the following sections, LM Site Manager Gwen Hooten met with each property owner to review the ICs and the property owners' responsibilities for this IC assessment. During those meetings, Ms. Hooten provided the *Mound Site Landowners - Institutional Control Compliance Form*. The property owners completed a short questionnaire within the form, signed the form, and returned it to LM. The signed forms are included in Appendix A.

During all of the interviews, Ms. Hooten mentioned that LM was also conducting the CERCLA five-year review of the Mound Site.

9.1.2 City of Miamisburg

On February 9, 2016, Gwen Hooten and contractor personnel met with City of Miamisburg staff, including Chris Fine, Development Director, and Ellen Stanifer, City of Miamisburg Public

Works Department, to review the ICs. Ellen Stanifer also attended the IC walkdown on April 14, 2016.

Discussions centered on the ICs, reviewing their purpose and the legal requirements, emphasizing their importance, maintaining the institutional awareness of ICs within the City, and reviewing the *Mound Site Landowners - Institutional Control Compliance Form*. In addition, LM reminded the City of Miamisburg about the requirement for notifying Ohio EPA when ownership of property transfers.

LM and the City discussed the property acreage and parcel ownership issues identified during this review.

9.1.3 MDC

Gwen Hooten met with Eric Cluxton, MDC President, and Lorrie Huber, MDC Administrative Services Manager, on February 9, 2016, to discuss the ICs, and Eric Cluxton attended the IC walkdown on April 14, 2016. LM, Navarro personnel, and MDC discuss site-related activities and information at the Federal Facility Agreement meetings and any other time it is necessary.

Discussions centered on the ICs, reviewing their purpose and the legal requirements, emphasizing their importance, maintaining the institutional awareness of ICs within the City and reviewing the *Mound Site Landowners - Institutional Control Compliance Form*. In addition, LM reminded MDC about the requirement for notifying Ohio EPA when ownership of property transfers.

Navarro asked MDC to review Section 9.2.2 in the 2015 Annual IC Assessment Report and advise if the oversight process described in that section had changed with the 2015 personnel changes. In a March 16, 2016, email, Lorrie Huber, MDC, responded that after reviewing Section 9.2.2, no changes were needed. Any work would still be run through MDC for initial approval signoff, and MDC would ensure that the proper language would be on all work orders. No changes were made to the oversight process language.

9.1.4 BOI Solutions

On February 9, 2016, Gwen Hooten and contractor personnel met with Justin Rich and Andrew Dahlinger of BOI Solutions (BOI).

Discussions centered on the ICs, reviewing their purpose and the legal requirements, emphasizing their importance, and reviewing the *Mound Site Landowners - Institutional Control Compliance Form*.

9.1.5 Dyrdek Group

Gwen Hooten and contractor personnel met with Mike Hill, Alien Workshop, who represented Dyrdek Group Inc., the owner of 790 Enterprise Court, which was formerly Building 100.

Discussions centered on the ICs, reviewing their purpose and the legal requirements, emphasizing their importance, and reviewing the *Mound Site Landowners - Institutional Control Compliance Form*.

9.2 Records Reviews

9.2.1 City of Miamisburg

In addition to conducting the physical inspections for the annual assessment, LM requested information from the City of Miamisburg to ensure that ICs are being followed. Information topics included construction, street opening, occupancy, or other permits; zoning modification requests; and City Planning Commission requests.

The City of Miamisburg database allows permits to be searched by keywords (e.g., permit number, date, location, nature of work). Permits issued before the database was implemented (i.e., permits documented in DOE’s annual reports dating back to 2001) might not be in the City’s database. However, the City retains hard copies of all permits in accordance with a records-retention plan that meets all State of Ohio requirements.

LM contractor personnel requested that the City of Miamisburg Engineering Department query their computer tracking system for permits issued to any addresses on Capstone Drive, Vanguard Boulevard, Enterprise Court, Vantage Point, Mound Road (between building address numbers 885 and 1195), and Benner Road (between 799 Benner Road and Dayton-Cincinnati Road, on the odd-numbered side of street).

Table 3 lists all permits on file that were issued for the site from April 1, 2015, to March 31, 2016. The City of Miamisburg Building Inspection department provided the permit summary.

Table 3. City of Miamisburg Permit Files for Mound Site (April 1, 2015, to March 31, 2016)

Permit No.	Permit Date	Site Address	Owner	Est. Cost Dollars	Contractor	Work Desc. 1
20150169B	12/7/2015	475 BENNER RD	CITY OF MIAMISBURG	\$7,491,000	TBD	NEW BLDG.
20150047B	4/16/2015	790 ENTERPRISE CT	MMCIC	\$4,000	SONITROL OF SW OH	FIRE ALARM SYSTEM
20150174B	12/10/2015	460 VANTAGE PT	CITY OF MIAMISBURG	\$315,000	TBD	ALTERATION
20150166B	11/18/2015	480 VANTAGE PT	MMCIC	\$24,000	PYRAMID NETWORK SERVICES	ALTERATION

Abbreviations:
 BLDG. = Building
 Desc. = description
 Est. = estimated
 TBD = to be determined

Table 4 lists work requests that did not require a City permit but did require review by the City Planning Commission or Engineering Department. Such requests may include excavation and paving activities.

Table 4. City of Miamisburg Files—Planning Commission and Other Reviews

Location of Work	ID Number	Date of Application	Submitted by	Nature of Work	Parcel/ Building	Status
1100 Vanguard Blvd.		12/18/2015		for boring AT&T cable		
Approved by City Engineering Department						

Since City permits are filed according to address, MDC or subsequent property owners must inform LM of changes to street names or building addresses associated with the 1998 Mound Plant property boundary; this facilitates LM’s ability to review permits issued by the city or City Planning Commission documents, etc.

In general, the permit-review process demonstrated that the City of Miamisburg’s recordkeeping system is adequate to allow LM to identify site activities that could affect IC compliance.

Table 5 shows the DOE building identification and the Miamisburg street addresses for each building. Five buildings (3, 87, 102, 105, and the Flex Building), five magazines (80 through 84), and a salt storage shed remain in land parcels currently owned by either MDC or the City of Miamisburg. Figure 48 shows the location of all remaining site buildings. Table 6 lists the buildings demolished by MDC.

9.2.2 MDC

MDC and all future property owners must ensure that contractors performing work (e.g., landscaping, utility work that involves excavation or construction) comply with the ICs. MDC, who manages maintenance for all areas owned by MDC, the City of Miamisburg, and the EMCBC, provides a preconstruction package that includes a description of the ICs, and MDC includes the following language in the “Technical Requirements” section of its requests for proposal and subsequent work orders: “Excavated soils must be managed and remain on MDC property. Soils from excavation shall be placed at an on-site location, as directed by MDC.” Lorrie Huber confirmed in a March 16, 2016, email that MDC continues to follow this practice.

MDC monitors the vendor’s work and conformance with technical requirements. MDC also provides the vendor with a real-estate easement that includes detailed information on the ICs. Appendix E shows an example of a real-estate easement used for utility work that is registered with Montgomery County.

MDC’s *Comprehensive Reuse Plan Update* (MMCIC 2003a) is available in the CERCLA Reading Room and online at <http://www.lm.doe.gov/mound/Sites.aspx>. To coordinate the movement of soil on the site, the Comprehensive Reuse Plan (CRP) included a sitewide soil-grading plan. The CRP was incorporated into the City of Miamisburg’s comprehensive plan, which is the basis for property zoning within the city limits.

Table 5. Mound Site Building Identifications, Street Addresses, Ownership, County Parcels as of April 30, 2016

DOE Building ID	DOE Building Descriptions	Building Identifier	Current Miamisburg Street Address	DOE ROD Parcel ID	Property Owner	County Parcel ID
45	Health Physics Calibration Facility	White laboratory building. Empty.	930 Capstone Drive	6	EMCBC	K46 00334 0021
61	Logistical Support Warehouse	Warehouse and shipping. Empty.	885 Mound Road	7	EMCBC	K46 00501 0016
3	Test fire (TF) area Destructive and Environmental Testing Laboratory	Excelitas Technologies Corp	1100 Vanguard Blvd.	IB	MDC	K46 01507 0032
87	Explosive Testing Building					
100	Training and Offices	Dyrdek	790 Enterprise Court	D	Dyrdek	K46 01507 0031
102	Offices, Process Support Building	Mound Science and Energy Museum	1075 Mound Road	IA	City	K46 01507 0029
105	Parts Machining	The Woodworking Shop LLC	1195 Mound Road	D	MDC	K46 01507 0030
126	Power Systems Technologies [PST] Administrative Building	BOI Solutions Inc.	955 Mound Road	(6A & 7) Tracts 1 and 2	BOI	K46 00501 0017 K46 00501 0018
COS	Central Operational Support	MDC, Excelitas, Mound Technical Solutions, Precision Joining Technologies, West Rock, Inorganic Specialists, EHS Technology Group, LLC	965 Capstone Drive	8	EMCBC	K46 00503 0013
OSE	Operational Support East	Empty. Has auditorium, large open first floor.	480 Vantage Point	6	EMCBC	K46 00334 0021
OSW	Operational Support West	Montgomery County Consolidated Dispatch Center (911 Center)	460 Vantage Point	8	EMCBC	K46 00503 0013
T	Technical Building	Empty. Underground. Original	945 Capstone Drive	8	EMCBC	K46 00503 0013
80-84	Magazines	Used by Excelitas. East of OU-1	None	IB	MDC	K46 01507 0032
SST	Salt storage structure in former RCRA burn area	Empty	None	IB	City	K46 01507 0039

Table 5 (continued). Mound Site Building Identifications, Street Addresses, Ownership, County Parcels as of April 30, 2016

DOE Building ID	DOE Building Descriptions	Building Identifier	Current Miamisburg Street Address	DOE ROD Parcel ID	Property Owner	County Parcel ID	
1 and 16	Trailers	LM area in OU-1	1275 Vanguard Blvd.	9	EMCBC; LM	K46 01109 0001	
300	Building						
	MDC Flex Building		1390 Vanguard Blvd.	4	MDC	K46 01507 0040	
			1388 Vanguard Blvd. (lighting)	4	MDC	K46 01507 0040	
		Beam Dental	1384 Vanguard Blvd.	4	MDC	K46 01507 0040	
			1380 Vanguard Blvd.	4	MDC	K46 01507 0040	
			1374 Vanguard Blvd.	4	MDC	K46 01507 0040	
			Barge, Waggoner, Sumner and Cannon	1370 Vanguard Blvd.	4	MDC	K46 01507 0040
		Pond at SW entrance of Vanguard Blvd.	Pond area			City	K46 01507 0042
	SW corner of site	Includes Mound Business Park sign			City	K46 01507 0041	

Abbreviations:

n/a = not applicable

Blvd. = Boulevard

City = City of Miamisburg

EMCBC = Environmental Management Consolidated Business Center

MDC = Mound Development Corporation

Table 6. Mound Site Buildings Demolished by MDC

DOE Building ID	DOE Building Descriptions	Building Identifier	Date Demolished	DOE ROD Parcel ID
2	Energetic Materials Destructive Testing Facility	In Test Fire (TF) area	2011	7
28	Ceramic Production Plastics Development	Former ceramics lab	2013	6
63 and 63W	Surveillance Facility	In TF area	2011	7
GP1	Guard Post-1	In TF area	2006	3
GH	Guard House	Original building Old Visitor Control, Placement Center	2013	3

Abbreviations:

n/a = not applicable

MDC = Mound Development Corporation

MDC plans to plat the entire DOE Mound site property. In order to receive financing (i.e., for new construction) on land parcels that make up the original DOE Mound site property, MDC will record a lot split with the Montgomery County Recorder's Office. If MDC does not require financing for property improvements, it is not required to immediately record a Miamisburg Planning Commission-approved lot split with the County. However, MDC must record the changes with Montgomery County when it sells the property. The recorded real-estate documentation would include the ICs in the original quitclaim deed and the CERCLA 102(h) ES associated with the original parcel to ensure that future property owners are aware of their responsibility to comply with the ICs.

9.2.3 Montgomery County Property Records

LM reviewed the current Montgomery County property records and updated the Appendix B table that contains lot numbers, ownership, addresses, and other data to track ownership. This table will be updated annually.

9.2.4 Property Ownership Status and Agreements

9.2.4.1 City of Miamisburg did not Notify Ohio EPA of Ownership Transfer

The City of Miamisburg transferred ownership of Parcel K46 01507 0030 containing 4.8008 acres and the former Building 105 at 1095 Mound Road back to MDC on May 7, 2015, which leased it to Woodworking Shop LLC. The site deeds and environmental covenant require written notification of any property changes to Ohio EPA within 10 days. However, this notification was not made, and LM reminded the City of Miamisburg and MDC about the notification requirement.

9.2.4.2 Deeds did not Include Two Areas Subject to Soil-Removal IC Exemption

1. EMCBC Quitclaim DEED-09-011643 for Parcels 3, 4, D, H and Phase I (A, B, C) dated February 22, 2009, combined previous individual deeds for Parcels 3, 4, D, and H with the Phase I (A, B, C) parcel. The deed exempted only three of the four road-frontage areas from the soil-removal IC.
 - a. Three (3) areas exempted to center line of roadway (Figure 2):
 - Parcel H: 1.886 acre area at the northeast corner of the site in Parcel H as described in the QC deed. (Note: this deed shows acreage as 6.604 acres. ROD parcel description shows 1.886 acres and an analysis of current geographical information system site drawings reaches a similar acreage.)
 - Parcel D: Area approximately 40 feet wide and 218.17 feet long bounded on the east by the centerline of Mound Road.
 - Parcel 4: Area 35 feet wide and 2,354.38 feet long from the site boundary to the center line of Benner Road.
 - b. One (1) area not exempted to center line of roadway:
 - Phase IA: Area approximately 40 feet wide from the eastern site boundary to the center line of Mound Road.
2. MDC Limited Warranty Deed 2012-00084260 for BOI parcels did not contain exemption for soil-removal IC for the area to the center line of the road for Tract 2.

9.2.4.3 Sales Agreement Between EMCBC and MDC for Parcels 6–9 Remains Deferred

In January 1998, EM executed the original site sales agreement with MDC. The agreement called for the transfer of discrete land parcels to MDC, via quitclaim deeds, after all requirements of CERCLA Section 120(h) for property transfer were met.

The sales agreement was replaced in 2008 with the *Sales Contract by and between the United States Department of Energy and the Miamisburg Mound Community Improvement Corporation, August 28, 2008* (DOE 2008).

The sales agreement was amended on November 30, 2012, with the *Amendment to Sales Contract dated August 28, 2008, between the U.S. Department of Energy and Mound Development Corporation (Previously The Miamisburg Mound Community Corporation)* (DOE 2012c). Under this agreement, EMCBC allows MDC to defer acceptance of all remaining parcels for up to five (5) years, until September 30, 2017.

9.2.4.4 General Purpose Lease Between EMCBC and MDC for Parcels 6–9 Remains in Place

During the deferral of property transfer, EMCBC leases Parcels 6–9 on the Mound site in its entirety to MDC. On December 14, 2012, EMCBC signed a 5-year lease amendment, *U.S. Department of Energy Amendment Number 24 to the General Purpose Lease* (DOE 2012d), with MDC. The lease stated that EMCBC retains ownership of Parcels 6–9 and MDC is responsible for maintenance and management of all buildings and facilities within Parcels 6–9.

In 2013, the EMCBC and MDC signed an Appendix #1 to the General Purpose Lease (DOE 2013a) that formalized the requirement to adhere to the ICs during the lease period.

9.2.4.5 MDC and City of Miamisburg Property Ownership and Agreements Remain in Place

MDC owns approximately 19.5785 acres, and the City of Miamisburg owns approximately 144.0514 acres. The City of Miamisburg passed Ordinance 6393 on April 16, 2013, including a Transfer Agreement that stated, “The City and MDC will each have the right to access the property as necessary for their own interests but the City agrees to adopt rules as needed to prohibit the use of the property by the public generally.”

9.2.4.6 MDC Joined Two City of Miamisburg Parcels to Parcels Covered by ICs

When MDC platted their property in 2013, two small properties owned by the City of Miamisburg (Lots 4781 and 4782) were combined with two newly formed MDC lots being transferred to the City. The current city-owned parcels K46 01507 0041 and K46 01507 0042 contain road-frontage areas extending to Route 25 that were not within the original Mound site boundary and were not required to be covered by ICs. These areas are not shown separately in current property records and are not separated by any physical feature. Therefore, the current parcel configuration applies the ICs to those entire parcels, because no exceptions are given in the legal descriptions.

10.0 Observations

The following are maintenance or records suggestions not directly covered by IC requirements.

Number	Observations	Responsible
1	Update OSW Building drawings to include modifications for emergency generator.	MDC
2	Update site utility drawings to include underground fiber optic cable.	MDC/LM
3	Repair door on T Building West Head House.	MDC
4	Identify road-frontage areas in Parcels 6 and 7 that are exempted from soil-removal IC restrictions in the Quitclaim deed when those parcels transfer to MDC.	EM

11.0 Conclusions

The ICs for the Mound site continue to function as designed. Adequate oversight mechanisms appear to be in place to identify possible violations of ICs, and adequate resources are available to correct or mitigate any problems if violations occur.

12.0 Recommendations

Table 7 lists recommendations from previous inspections and the status of those recommendations. Table 8 on the following page lists new recommendations from the 2016 inspection.

Table 7. Status of Issues from Previous IC Assessments and 2011 CERCLA Five-Year Review

Origin	Issue/ Recommendation	Corrected?	Current Status
2011 CERCLA Five-Year Review	Verify that the quitclaim deed for Parcels 6, 7, and 8 is appropriately recorded and is free and clear of all liens and encumbrances.	Yes	Complete. Details included in O&M Plan. (DOE 2015c)
	Finalize the sitewide IC Management/Land Use Control Plan (with CERCLA Summary).	Yes	Incorporated into O&M Plan as Section 3.0 "CERCLA Remedies and Institutional Controls."
	Finalize the sitewide O&M Plan for groundwater remedies.	Yes	Incorporated into O&M Plan.
2012 Annual IC Inspection (DOE 2012b)	Install a permanent marker for well 0451.	Yes	Complete.
	Work with the City to ensure that permit and zoning systems that capture future site work involving soil removal, regardless of property ownership, will be maintained.	Yes	New City Ordinance 6393 transfers ownership of some MDC parcels to City. LM continues to work with City.
	Complete the soil-removal white paper, which will become part of the O&M Plan.	Yes	Incorporated into O&M Appendix C.
2013 Annual IC Inspection (DOE 2013b)	Review the records regarding the purpose of the red concrete. Discuss with Core Team.	Yes	Completed review. Issued white paper to Core Team.
	Repeat the photographs of the cracks in the red concrete in 2014.	Yes	Complete.

Table 7 (continued). Status of Issues from Previous IC Assessments and 2011 CERCLA Five-Year Review

Origin	Issue/ Recommendation	Corrected?	Current Status
2014 Annual IC Inspection (DOE 2014)	Continue to address erosion issues affecting wells or access to wells.	Yes	Complete.
	Address water in T Building Rooms 57 and 58.	Yes	Complete.
	Replace missing sign from pond area near bike path.	Yes	Complete.
	Develop a crosswalk list of Mound LM well numbers versus ODNR numbers.	Yes	Complete. Included in LTS&M Plan.
2015 Annual IC Inspection (DOE 2015d)	Continue to remove debris from grate leading to storm drains uphill of OU-1.	Yes	Complete.
	Core Team discuss and recommend how the road and right-of-way acreage within the 1998 site boundary should be handled with regard to property ownership and IC compliance.	In process	TBD

Abbreviation:

TBD = to be determined

Table 8. Recommendations from 2016 Annual Inspection for ICs

Number	Issue/Recommendation	Responsible
1	Send notification of property ownership transfer of Parcel K46 01507 0030 from the City of Miamisburg to MDC, to Ohio EPA, per requirements of quitclaim deed.	City of Miamisburg
2	Revise the legal descriptions for City-owned parcels K46 01507 0041 and K46 01507 0042, to define areas that were not part of the original Mound site boundary, and are therefore not covered by ICs.	MDC/City
3	Clarify that onsite roadways transferred to the City of Miamisburg remain covered by the site ICs. Consider issuing a City procedure that will ensure any repairs of the roads or adjacent utility corridors within the right-of-way comply with the ICs.	MDC/City
4	Clarify that the two areas in Phase I and BOI Tract 2 to the center line of Mound Road are exempted from the soil-removal IC.	EM/MDC/City
5	Determine if water that has passed under red concrete in the T Building IC area causes fixed contamination under the red concrete to migrate.	EM/LM
6	Identify and remedy source of water in T Building special IC areas, and dry those areas.	MDC

13.0 Contact Information

For further information on the content of this annual IC assessment report or the DOE Mound site property in general, contact:

Sue Smiley
 LM Mound Site Manager
 U.S. Department of Energy
 Office of Legacy Management
 10995 Hamilton-Cleves Highway
 Harrison, OH 45030-9728
 (513) 648-3333
 Sue.smiley@lm.doe.gov
 Alternate email: mound@lm.doe.gov

For further information on the regulatory guidelines that govern the CERCLA Section 120(h) process for property transfer of DOE Mound site property, contact:

David Seely
Remedial Project Manager
U.S. Environmental Protection Agency
77 W. Jackson Boulevard
Chicago, IL 60604-3590
(312) 886-7058
Email: david.seely@epa.gov

-or-

Brian Nickel
Remedial Project Manager
Ohio Environmental Protection Agency
401 E. Fifth Street
Dayton, OH 45402-2911
(937) 285-6468
Email: brian.nickel@epa.ohio.gov

14.0 References

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DOE (U.S. Department of Energy), 2001c. *Parcel 4 Environmental Summary, CERCLA 120(h) Summary Notice of Hazardous Substances, Mound Plant, Miamisburg, Ohio*, Final, March.

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DOE (U.S. Department of Energy), 2009a. *T Building Special IC Areas Core Team Agreement and Position Paper*, June.

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EPA (U.S. Environmental Protection Agency), 2005. *Institutional Controls: A Citizen's Guide to Understanding Institutional Controls at Superfund, Brownfields, Federal Facilities, Underground Storage Tank, and Resource Conservation and Recovery Act Cleanups*, OSWER 9255.0-98, EPA-540-R-04-004, February, available online at https://www.epa.gov/sites/production/files/documents/ic_ctzns_guide.pdf, accessed April 29, 2016.

MMCIC (Miamisburg Mound Community Improvement Corporation, now MDC), 2003a. *Comprehensive Reuse Plan Update*, December 31.

MMCIC (Miamisburg Mound Community Improvement Corporation, now MDC), 2003b. *Declaration of Easement*, EASE-03-039149, March 20.

Appendix A

Annual Assessment Checklist with Supporting Documents (Inspections Conducted in March and April 2016)

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Contents

1. IC Assessment Checklist
2. IC Assessment walkdown attendance sheet
3. IC Assessment walkdown presentation
4. Mound Site Landowners IC Compliance Forms
 - a. City of Miamisburg
 - b. Mound Development Corporation
 - c. Dyrdek Corporation represented by Alien Workshop
 - d. BOI Solutions Inc.
5. Ohio EPA letter to Gwen Hooten, DOE LM, *U.S. DOE Mound Plant Burn Area Closure and Annual RCRA Institutional Control Inspection*, April 19, 2016.

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CHECKLIST WORKSHEET – COMBINED – ALL PARCELS
Review of Effectiveness of Institutional Controls

Scope: Institutional Controls (ICs) Compliance for the Mound, Ohio, Site (Mound Site)

Preliminary inspections performed on: [March 8, 2016](#)

Physical inspection walkdown with regulators on: [April 14, 2016](#)

Review led by: [Gwen Hooten, DOE LM](#)

Participants in physical inspection walkdown: [See attached attendance sheet](#)

Status of issues or recommendations from previous annual IC assessment reports, follow-up inspections, Five-Year Reviews, etc.:

Origin	Issue/ Recommendation	Corrected?	Current Status 2015 Report
2011 CERCLA Five-Year Review	Verify that the quitclaim deed for Parcels 6, 7, and 8 is appropriately recorded and is free and clear of all liens and encumbrances.	Yes	Completed
	Finalize the sitewide IC Management/Land Use Control Plan (with CERCLA Summary).	Yes	Incorporated into the Mound Site Operations & Maintenance (O&M) Plan
	Finalize the sitewide O&M Plan for groundwater remedies.	Yes	Incorporated into O&M Plan
2012 Annual IC Assessment	Install a permanent marker for well 0451.	Yes	Completed
	Work with the City to ensure that permit and zoning systems that capture future site work involving soil removal, regardless of property ownership, will be maintained.	Yes	New City of Miamisburg Ordinance 6393 transfers ownership of some Mound Development Corporation (MDC) parcels to City.
	Complete the soil-removal white paper, which will become part of the O&M Plan.	Yes	Incorporated into Appendix C of the O&M Plan
2013 Annual IC Assessment	Review the records regarding the purpose of the red concrete. Discuss with Core Team.	Yes	Records reviewed and detailed in white paper. LM sealed cracks in 2015 as a best management practice
	Repeat the photographs of the cracks in the red concrete in 2014.	Yes	Completed
2014 Annual IC Assessment	Continue to address erosion issues affecting wells or access to wells.	Yes	Completed
	Address water in T Building rooms 57 and 58.	Yes	Completed
	Replace missing sign from pond area near bike path.	Yes	Completed. Three signs
	Develop a crosswalk list of Mound LM well numbers versus ODNR numbers.	Yes	Completed
2015 Annual IC Inspection	Continue to remove debris from grate leading to storm drains uphill of OU-1.	Yes	Completed in 2015
	Core Team discuss and recommend how the road and right-of-way acreage within the 1998 site boundary should be handled with regard to property ownership and IC compliance.	In process	LM has presented and discussed all acreage issues with the Core Team, MDC, and the City of Miamisburg. MDC and the City are working on this issue.

Describe major physical property changes since the previous IC assessment. (Buildings demolished or erected, extensive landscaping, roads or parking lots constructed or modified, and so on?)

Activities noted or reported:

- MDC painted the exteriors of Buildings 45 and 61 and repaved areas around Building 61.
- A large backup generator was installed for the OSW Building, which houses the Montgomery County Emergency Call Center.
- Underground fiber optic cables were installed near Excelitas on Vanguard Blvd.
- Construction began for the City pumping station on Benner Road.

CHECKLIST WORKSHEET
Review of Effectiveness of Institutional Controls

Scope: Institutional Controls (ICs) Compliance for the Mound, Ohio, Site (Mound Site)

List individuals involved with the physical inspections or document reviews and those interviewed as property owners.

Notes:

- Navarro Research and Engineering, Inc. (Navarro) replaced Stoller as the LMS prime contractor on October 1, 2015.
- MDC restructuring resulted in personnel changes during 2015.

Individuals interviewed:

- Gwen Hooten, LM Mound Site Manager, accompanied by Melissa Lutz and Joyce Massie, Navarro, met with the property owners including Eric Cluxton, MDC; Chris Fine, City of Miamisburg; Justin Rich and Andrew Dahlinger, for BOI Solutions; and Mike Hill, for Dyrdek Group. Each was given the *Mound Site Landowners - Institutional Control Compliance Form* to complete, sign, and return. See Appendix A for signed forms.
- Leslie Karacia, Development / Planning / Building Inspection City of Miamisburg, emailed a listing of the building permits.
- Jane Hansel, City of Miamisburg, emailed that the only permit the Engineering Dept. issued for the facility for 2015 was on 12/18/2015 for 1100 Vanguard Blvd., for boring AT&T cable.
- Ryan Homsy, City Planner, City of Miamisburg, furnished the latest zoning map showing the entire Mound site zoned I-2 industrial. This agrees with the version in the 2015 LTS&M Plan.
- Melissa Lutz, Navarro, provided managerial and logistics support and participated in records reviews, inspections, and meetings with the property owners.
- Joyce Massie, Navarro LMS Team, conducted inspections, took photos, compiled and analyzed the inspection information, assembled the walkdown presentation, and wrote the IC Report.
- Gary Weidenbach, Navarro, assisted with the physical inspection on March 8 and furnished information about activities observed during the review period.
- Roy Mowen, Navarro, furnished photos of well 0138.
- Henry Becker, Navarro, provided information on the modifications to well 0138.
- Ken Green, Turner Properties, assisted with the T Building inspection on March 8.
- Steve Pawel and Daniel Widrich, Navarro, updated the report figures.
- Navarro Graphic Services provided technical editing and formatting of the walkdown presentation.
- Navarro Document Production provided technical editing, formatting, and publication of the report.

List site use requests for site activities not covered by industrial use. Include copies of requests and regulators' responses in IC report.

None.

CHECKLIST WORKSHEET – COMBINED – ALL PARCELS
Review of Effectiveness of Institutional Controls

Scope: Institutional Controls (ICs) Compliance for the Mound, Ohio, Site (Mound Site)

List the city, township, county, and state records reviewed for the period of the review. e.g., street opening permits or construction permits, engineering drawings for improvements to property, aerial photographs, maps, City Planning Commission requests, and Ohio Department of Natural Resources (ODNR) well logs.

- City of Miamisburg building permit list
- City of Miamisburg Engineering Department permit summary (one permit for 1100 Vanguard Blvd., for boring AT&T cable)
- ODNR well log web page

On the basis of the review of documents and interviews, were property improvements covered by the appropriate approvals? (For example, were construction permits approved by the City of Miamisburg?)

- Navarro asked MDC to review Section 9.2.2. in the 2015 Annual IC Assessment Report and advise if the oversight process described in that section had changed with the 2015 personnel changes. In a March 16, 2016, email, Lorrie Huber, MDC, responded that after reviewing Section 9.2.2, no changes were needed. Any work would still be run through MDC for initial approval signoff, and MDC would ensure that the proper language would be on all work orders.
- The City Engineering Department approved a permit for boring an ATT cable along Vanguard.
- BOI Solutions Inc. and Dyrdek Group manage activities on their properties.
- City building and zoning permits appear to have been obtained for the work noted during this review.

Based on the review of MDC Reuse Plan Update, Miamisburg Zoning Map, and Miamisburg Land Use Plan, were any changes made to those documents that affect IC compliance?

No.

List any other relevant official documents and describe any changes initiated during the review period that affect IC compliance or the IC assessment requirements.

None.

List the property ownership changes. List the legal property documents reviewed to determine if ownership had changed (e.g., quitclaim deeds, environmental covenants, county property records).

Reviewed property records on the Montgomery County Auditor's website, <http://www.mcraestate.org/Main/Home.aspx>. Updated the property information table in Appendix B to include current information.

The City transferred ownership of Parcel ID K46 01507 0030 at 1195 Mound Road (the former Building 105) back to MDC. MDC leased the property to Woodworking Shop LLC.

If property ownership changed, were the requirements for IC compliance included in the legal documents filed with Montgomery County? Was Ohio EPA notified of the property transfer as required in the quitclaim deed?

No. There was no record of notification to Ohio EPA of Parcel K46 01507 0030 transfer as required. Quitclaim deed and Environmental Covenant state, "Owner or transferee, if applicable, shall notify Ohio EPA within ten (10) days after each conveyance of an interest of the Property or any portion thereof. The notice shall include the name, address, and telephone number of the Transferee, a copy of the deed or other documentation evidencing the conveyance, and a survey map that shows the boundaries of the property being transferred."

CHECKLIST WORKSHEET
Review of Effectiveness of Institutional Controls

Scope: Institutional Controls (ICs) Compliance for the Mound, Ohio, Site (Mound Site)

Provide detail on any other issues identified during this assessment.

Site boundary clarification:

- It was noted when reconciling the Mound site acreage that the original Mound site boundary extended to the center lines of Mound and Benner Roads. The Parcels 3, 4, and D areas from the outer property line to the center lines of these roads was exempted from the soil-removal IC in the quitclaim deed when the property was transferred from the EM to MDC in the combined DEED-09-011643 registered February 24, 2009, with Montgomery County. This exemption wording should be added to the Phase IA deed when the property is transferred back to MDC from the City and to the areas in Parcel 6 and 7 bounded by Mound Road when the balance of the property transfers to MDC in 2017.

Acreage reconciliation issues identified:

- When MDC platted their property in 2013, the onsite roadways within MDC/City parcels were merged with City of Miamisburg roads. This acreage is not captured or separated in the newly formed Montgomery County lots.
- When MDC platted their property in 2013, two small properties owned by the City of Miamisburg (4781 and 4782) were combined with the newly formed MDC lots, which were subsequently transferred to the City.
- There are two different acreages given for the Parcel H wedge that is excepted from the soil-removal IC. Although the quitclaim deeds gave 6.604 acres, the ROD gives 1.886 acres for that excepted area. Calculations based on the CAD drawings provided by MDC indicate that the acreage is closer to 1.84 acres.

Were there any reported issues relating to access by DOE, EPA, Ohio EPA, ODH, their agents, contractors, or employees to property to implement or enforce the ICs?
 No.

Observations during physical inspections:

- Evidence of unauthorized soil removal?
 No.

- Evidence of unauthorized groundwater use?
 No.

- Evidence of land use other than "industrial" (e.g., residential)?
 One fisherman was noted in the pond area during the physical inspection on March 8.

- Signage/markers in good repair (if applicable)?
 There were two signs in the pond area. These signs are not ICs.

- Evidence of tampering on the groundwater monitoring wells? (Well maintenance is not an IC.)
 There was no evidence of tampering with the groundwater monitoring wells. Navarro groundwater samplers advised that the City of Miamisburg was adding dirt into a former pond area near offsite well 0138, which was raising the ground level around the well. Navarro raised the well casing by 10 feet and worked with the City of Miamisburg engineer to protect the well during construction. The well is sealed from surface contamination and water runoff with a bentonite seal around the old well casing. Navarro ensured that the rubber gaskets were in place when adding casing. There is a temporary orange cone on the well, and Navarro plans to install a lockable protective casing and perhaps protective bollards when the city work is complete. Photos from March indicate that construction is still underway and that there was some ponding of water around the well. The City of Miamisburg advised Navarro that the ponding issues will be corrected during the final grading.

- Is OU-1 pump-and-treatment (P&T) system functioning as designed and in good repair?
 The P&T system was placed in standby mode during the enhanced attenuation demonstration with the Core Team's approval. It remains in standby mode. Navarro conducts a monthly system standby mode inspection according to the P&T maintenance procedure manual checklist.

CHECKLIST WORKSHEET – COMBINED – ALL PARCELS
Review of Effectiveness of Institutional Controls

Scope: Institutional Controls (ICs) Compliance for the Mound, Ohio, Site (Mound Site)

- T Building only - areas with additional institutional controls: Have ICs been followed? See O&M Plan, Appendix B, *T Building Special ICs Core Team Agreement and Position Paper*, and *Floor Plan Figure*.

The floors of rooms 57 and 58 were covered with water on March 8. There were wet areas and water in special IC rooms 61, 62, 63, and sump areas. There were wet areas in adjoining areas including Room 99 and the hallways and sumps. The water had migrated under the red concrete and had puddled in several places east of the red concrete.

The Turner maintenance person advised that their crew was working to identify the source of the water and mitigate the problem.

Inspectors noted equipment such as sump pumps, drain lines, etc. in the area being used to mitigate the problem.

There was a hose from the SYS-02A/B/C tunnel (which is a special IC area) to the T Building west head house and equipment inside the head house.

During a follow-up inspection on April 7, there was still water in the areas described above and the water was observed further east of the red concrete.

During the IC walkdown on April 14, there were still wet areas in T57, T58, and east of the red concrete.

MDC advised during the walkdown that EHS had sampled an oily substance in one of the gravel-filled areas, but had found no “hazardous” materials. EHS had requested and received approval from the City of Miamisburg waste-water treatment plant to dispose of this water in the storm drain. LM requested a copy of the sample analysis.

Based on physical inspections, records reviews, questionnaires, and interviews, was there evidence of IC noncompliance?

No.

Miscellaneous items noted during review or physical walkdown:

Abandoned wells. LM removed four offsite monitoring wells in August and September 2015 that were no longer needed to support the CERCLA remedies. After approval by the Core Team, these well abandonments were coordinated with the City of Miamisburg (wells 0301 and 0311) and with the Miami Conservancy District (wells 0333 and 0334).

Debris in storm-water grate. Noted that debris was accumulating again in the storm-water grate east and upgradient of OU-1. It did not appear that the storm-water drain was clogged, which could cause overflow and erosion of roadway used to access monitoring wells. This will be an ongoing maintenance issue.

Recommendations from 2016 preliminary physical inspections or records reviews:

1. Notify Ohio EPA of property transfer that occurred in May 2015.
2. Revise the legal property descriptions for parcels K46 01507 0041 and K46 01507 0042 to define the areas that were not part of the original Mound site boundary and are not covered by ICs.
3. Clarify that onsite roadways transferred to the City of Miamisburg remain covered by the site ICs. Consider a procedure that will ensure that any repairs of the roads or adjacent utility corridors within the right-of-way comply with the ICs.
4. Locate source of water in T Building Special IC areas and mitigate.

CHECKLIST WORKSHEET
Review of Effectiveness of Institutional Controls

Scope: Institutional Controls (ICs) Compliance for the Mound, Ohio, Site (Mound Site)

Recommendations from physical walkdown with regulators:

From Shannon Dettmer, Ohio Department of Health:

- (1) Any water that seeps through ANY red concrete should be sampled and analyzed for the potential radiological (and chemical) contaminants of concern for that particular room.
- (2) The head house door that was held closed by a rope is a concern. I question how well the institutional controls are being verified by MDC. If MDC checked the site regularly and reasonably thoroughly, I have my doubts that the door would have been missed.

Conclusion/comments:

The ICs at the Mound Site appear to be functioning as designed and as described in the parcel records of decision and the Environmental Covenant.

2016 Annual Assessment Effectiveness of Institutional Controls at the Mound, Ohio, Site

Inspection Information and Photos

Gwen Hooten, Site Manager
U.S. Department of Energy (DOE)
Office of Legacy Management (LM)
Walkdown, April 14, 2016



Institutional Controls (ICs) Are:

- Legal and administrative tools
- Designed to protect human health and the environment
- Designed to help minimize the potential for exposure to contamination and/or protect the integrity of a response action



Mound Site* ICs Are:

- Required because some land-use restrictions apply
- Part of the parcel remedies defined by records of decision (RODs)
- Incorporated into deed restrictions and the environmental covenant
- Applicable to all future land and groundwater uses

*Identified by LM as the Mound, Ohio, Site



ICs Apply to the Entire Mound Site



2011 aerial looking north. (NEW aerial in 2016)

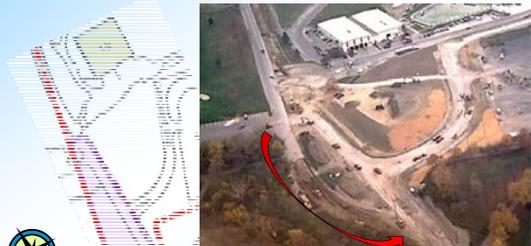


ICs apply to the original 1998 Mound Plant property

- Several areas were excepted in quitclaim (QC) deed from the soil removal restriction IC when transferred to MDC:
 - NE corner when Mound Road was moved
 - To centerline of Mound Road in Phase IA
 - To centerline of Benner Road in Parcel 4



The 1999 entrance modification moved Mound Road and created one of the areas excepted from the soil removal restriction in the QC deed.



Former location of Mound Road



Mound Site ICs Are Designed to:

- Prohibit the removal of soil*
- Prohibit the extraction, consumption, exposure, or use in any way of the groundwater underlying the premises*
- Limit land use to industrial/commercial only

*Unless prior written approval from Ohio EPA and ODH has been obtained



U.S. DEPARTMENT OF ENERGY Legacy Management

Specific ICs for the T Building Prohibit:

- Removal of concrete floor material in green areas*
- Penetration of red concrete floors in red areas*



*Without prior approval of EPA, Ohio EPA, and ODH.

U.S. DEPARTMENT OF ENERGY Legacy Management

Why Perform an Annual IC Assessment?

- Scheduled assessment is required by RODs to
 - Document the effectiveness of the ICs
 - Confirm that any changes to the site comply with ICs



U.S. DEPARTMENT OF ENERGY Legacy Management

During IC Assessment LM will:

- Conduct preliminary physical site inspections
- Conduct a walkdown with Regulators, MDC, and City of Miamisburg
- Interview all property owners
- Review applicable local and state records including (but not limited to):
 - Montgomery County property records
 - City of Miamisburg Permits
 - Construction, street opening, occupancy, etc.
 - Zoning modification requests
 - ODNR website for well drilling and abandonments
- Review status of previous findings or recommendations
- Publish IC assessment report by June 13

U.S. DEPARTMENT OF ENERGY Legacy Management

Preliminary Inspections Found Changed Conditions

- Water in special IC areas of T Building
- Property ownership change
- Roads are joined with City of Miamisburg roadway system
- Two offsite lots were combined with two onsite lots
- One offsite well was reconfigured
- Four offsite wells were abandoned
- Construction activities –
 - Generator for OSW Bldg.
 - Underground ATT lines on Vanguard
 - Pumping station on Benner Road

U.S. DEPARTMENT OF ENERGY Legacy Management

Changed Conditions Water in T Building



Room 99 Wet areas near sump pump

Room 99 Entry to air shaft leading to head house

U.S. DEPARTMENT OF ENERGY Legacy Management

Changed Conditions
Water in T Building



Room 57. Room 58



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Changed Conditions
Water in T Building



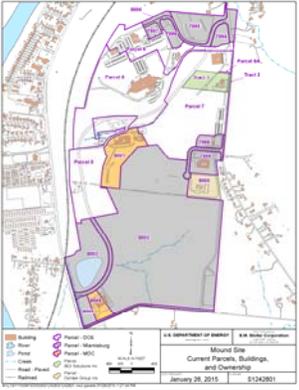
Red concrete area



14

Changed Conditions
Property Ownership change

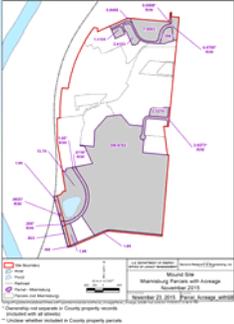
- City transferred ownership of property back to MDC in May 2015.
- Contains Building 105
- MDC leased to Woodworking Shop LLC
- Ohio EPA was not notified of the transfer




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Changed Conditions
Roads are joined with City roadway system

- In the MDC replat of their parcels in 2013, roads in transferred parcels on site were joined to City of Miamisburg roadway system.
- Acreage in the roads are not separated in county property records.
- Noted during acreage reconciliation




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Changed conditions
During 2013 MDC replat, two off-site lots were joined with parcels within Mound boundary.




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Changed conditions
Offsite wells

Raised offsite Well 0138 casing by 10 feet to accommodate City construction

Removed four offsite wells

- 0333 and 0334 near levy
- 0301 and 0311 near new City sewer system building





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Changed Conditions Construction Activities

- New emergency generator installed west of OSW Bldg.
- Underground cables installed on Vanguard Blvd



U.S. DEPARTMENT OF ENERGY | Legacy Management

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Changed Conditions Construction Activities

Work started on water pumping station on Benner Road



U.S. DEPARTMENT OF ENERGY | Legacy Management

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Status of Recommendations from 2015 Assessment

- Continue to remove debris from grate leading to storm drains uphill of OU-1. **Completed in 2015. Some debris has accumulated.**
- Core Team discuss and recommend how the road and "right of way" acreage within the 1998 site boundary should be handled with regard to property ownership and IC compliance. **In Process. LM continues to work with MDC and City to address the issue.**

U.S. DEPARTMENT OF ENERGY | Legacy Management

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LM Will Issue an IC Assessment Report

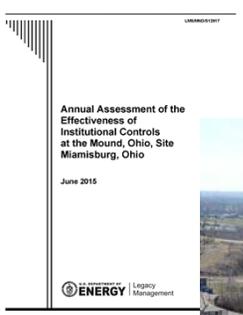
Report will:

- Detail all assessment results
- Document changes since last inspection
- Address recommendations from previous reports
- Contain checklist of observations
- Contain photos
- Be published and distributed by June 13
- Be uploaded to Mound site webpage at <http://www.lm.doe.gov/mound/Sites.aspx>

U.S. DEPARTMENT OF ENERGY | Legacy Management

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Questions on IC Assessment?



U.S. DEPARTMENT OF ENERGY | Legacy Management

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ATTENDANCE SHEET
Mound Site FFA Meeting and IC/FYR Walkdown
April 14, 2016

INITIAL			NAME	ORGANIZATION	TELEPHONE
FFA	Core	IC/FYR walkdown			
9-7-c		✓	Campbell, Anthony	Ohio EPA	937-285-6069
ace		✓	Cato, Becky	Navarro	636-300-2638
EMC		✓	Cluxton, Eric	Mound Development Corporation	937-865-3921
SEB		✓	Dettmer, Shannon	Ohio Department of Health	614-995-0761
ASF		✓	Friedman, Chuck	Navarro	937-572-3969 cell
du		✓	Hooten, Gwen	DOE-LM	720-880-4349
LG		✓	Kelly, Larry	DOE EMCBC	513-518-0028
MBL		✓	Lutz, Melissa	Navarro	636-300-2639 314-954-6660 cell
Jm		✓	Massie, Joyce	Navarro LMS Team	937-287-1333 cell
			Nickel, Brian	Ohio EPA	937-285-6468
AKL		✓	Reed, Allison	Ohio EPA	937-285-6447
OPS		✓	Seely, David	U.S. EPA, Region V	312-886-7058
EBS		✓	Stanifer, Ellen	City of Miamisburg	937-847-6636
KMH			Katie Heyob	Ohio EPA	
W		✓	Sue Smiley	DOE, EM-CBC	513-310-1279
lah			Lorrie Huber	Mound Development Corp.	937-865-4438
		✓	Ken Armstrong	DOE-EM-CBC	513-316-1078
WAG		✓	Karen Arthur	ETS	937-371-9343

Mound Site Landowners Institutional Control Compliance Form 2016

The United States Department of Energy (DOE) remediated the Mound Site Property to the Environmental Protection Agency's (EPA's) risk-based standards for **industrial/commercial use only**. Because the site is not approved for unlimited use, the CERCLA remedy includes institutional controls (ICs) in the form of use restrictions.

ICs are administrative and legal controls that help minimize the potential for human exposure to contamination and/or protect the integrity of the remedy. The DOE Office of Legacy Management (LM) is required to monitor for adherence to the ICs to assure compliance.

Please complete the following questionnaire and return to DOE LM within 30 days.

As identified in your quitclaim deed, the Mound Site ICs are designed to:

- 1) **Prohibit the removal of soil** from the original DOE Mound Plant Property boundaries, unless prior written approval from Ohio EPA and Ohio Department of Health (ODH) has been obtained.
 - 1a) Was soil removed from your property? Yes ___ No .
 - 1b) If yes, was the soil removed from the original DOE Mound Plant Property boundaries? Yes ___ No ___.
 - 1c) If yes, please include a copy of the written approval.

- 2) **Prohibit the extraction or consumption of, exposure to, or the use in any way of the groundwater** underlying the premises, unless prior written approval from EPA and Ohio EPA has been obtained.
 - 2a) Was a new well installed on your property? Yes ___ No .
 - 2b) If yes, please include a copy of the written approval.

- 3) **Limit land use to industrial/commercial use only**. The Record of Decision for each parcel identifies land uses that will not be permitted, but the list is not all-inclusive. Parcels may not be used for any residential or farming activities, or any activities that could result in the chronic exposure of children less than 18 years of age to soil or groundwater from the premises. Restricted uses include, but are not limited to:
 - Single or multi-family dwellings or rental units.
 - Daycare facilities.
 - Schools or other educational facilities for children less than 18 years of age.
 - Community centers, playgrounds, or other recreational or religious facilities for children less than 18 years of age.
 - 3a) Did any of these restricted uses occur on your property within the past year? Yes ___ No .
 - 3b) If yes, please provide an explanation:

- 4) **Prohibit the removal of concrete floor material in specified rooms of T Building** to off-site locations without prior written approval from EPA, OEPA, and ODH.
 - 4a) Do you occupy T-Building? Yes ___ No .
 - 4b) If yes, did you remove any of the floor material in the specified T building rooms to an off-site location? Yes ___ No ___.
 - 4c) If yes, please provide approval documentation.

Mound Site Landowners Institutional Control Compliance Form 2016

5) **Prohibit the penetration of concrete floors in specified rooms of T Building** without prior written approval from EPA, OEPA, and ODH.

5a) Do you occupy T-Building? Yes No

5b) Did you penetrate the concrete floors in the specified T building rooms? Yes No .

5c) If yes, please provide approval documentation.

6) **Allow site access** to federal and state agencies and their contractors for sampling and monitoring.

As a property owner or company representative, I understand and comply with these ICs.

Keith Johnson  2/10/16
Printed Name Signature Date

City Manager City of Miamusburg
Title Company

Please return the signed form within 30 days of receipt. If you have any questions, please contact Gwen Hooten, the LM Mound Site Manager, at gwen.hooten@lm.doe.gov or at (720) 880-4349.

Mound Site Landowners Institutional Control Compliance Form 2016

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- 6) **Allow site access** to federal and state agencies and their contractors for sampling and monitoring.

As a property owner or company representative, I understand and comply with these ICs.

ERIC A. CLYXTON *Eric A. Clyxton* 2/9/16
Printed Name Signature Date

PRESIDENT MOUND DEVELOPMENT CORP.
Title Company

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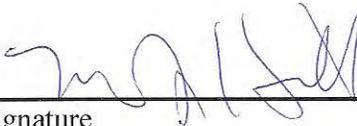
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6) **Allow site access** to federal and state agencies and their contractors for sampling and monitoring.

As a property owner or company representative, I understand and comply with these ICs.

<u>Michael S Hill</u>	<u></u>	<u>2/9/16</u>
Printed Name	Signature	Date
<u>Owner</u>	<u>Alien Workshop</u>	
Title	Company	

Please return the signed form within 30 days of receipt. If you have any questions, please contact Gwen Hooten, the LM Mound Site Manager, at gwen.hooten@lm.doe.gov or at (720) 880-4349.

Mound Site Landowners Institutional Control Compliance Form

2016

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As a property owner or company representative, I understand and comply with these ICs.

<u>Justin Rich</u>	<u></u>	<u>2/19 2/9/16</u>
Printed Name	Signature	Date
<u>Director of Operations</u>	<u>BOI Solutions Inc.</u>	
Title	Company	

Please return the signed form within 30 days of receipt. If you have any questions, please contact Gwen Hooten, the LM Mound Site Manager, at gwen.hooten@lm.doe.gov or at (720) 880-4349.



John R. Kasich, Governor
Mary Taylor, Lt. Governor
Craig W. Butler, Director

April 19, 2016

Ms. Gwendolyn Hooten
U.S. Department of Energy
Office of Legacy Management
11025 Dover Street, Suite 1000
Westminster, Colorado 80021

Re: US DOE Mound Fac, Miamisburg
Remediation Response
Correspondence
RCRA C - Hazardous Waste
Montgomery County
OH6890008984

Subject: U.S. DOE Mound Plant Burn Area Closure and Annual RCRA Institutional Control Inspection

Dear Ms. Hooten:

The purpose of this memo is to memorialize Ohio EPA's Resource Conservation and Recovery Act (RCRA) decision to not continue a separate institutional control inspection at the United States Department of Energy (U.S. DOE) Mound site.

On August 16th, 1996, Ohio EPA approved a closure plan for the burn area (consisting of 6 regulated units) at the U.S. DOE Mound site located in Miamisburg, Ohio (Mound Site). This closure plan was to be a closure by removal. Work was completed per the approved closure plan, however, confirmatory soil samples exceeded the closure performance standard for Antimony. As a result of this, U.S. DOE decided to amend the approved closure plan to include a risk assessment to close out the site soils. This amendment was received on February 9, 1998. This amendment also included the closure certification report for the other areas within the burn area that had met the closure performance standard. The closure certification did not come under separate cover as is typical and was included in the February 1998 closure plan amendment. Ohio EPA can't document approval of this plan amendment or acceptance of the closure certification report. On June 28, 1999, U.S. DOE again amended the closure plan to include an industrial re-use deed restriction on the burn area property. Approval of this plan was granted by Ohio EPA on July 26, 1999. It must be assumed that with this July 1999 approval of the amended plan, which contained the previously submitted risk assessment and closure certification, that Ohio EPA deemed the closure performance standard to have been met. A secondary review of this document, completed prior to the crafting of this letter concurs with the findings.

There are five RCRA/CERCLA Institutional Controls (IC's) at the Mound Site. These include:

1. Maintenance of industrial/commercial land use
2. Prohibition against residential use
3. Prohibition against use of ground water
4. Site access for federal and state agencies for environmental monitoring
5. Prohibition of removal of Phase 1 CERCLA soils without approval

As a result of the final Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) cleanup of the entire Mound Site, the U.S. DOE in conjunction with U.S. EPA, Ohio EPA, Ohio Department of Health, Mound Development Corporation and the city of Miamisburg perform annual inspections of the IC's. A report is generated from this annual inspection documenting findings and any corrective measures needed to maintain the IC's. The burn area is a part of this annual inspection as there were nine additional potential release sites remediated in the burn area which had not been covered under the RCRA closure. Ohio EPA conducts a separate annual inspection of the burn area to verify that the industrial reuse scenario is being followed and the area maintained as described in the approved closure plan, with inspection correspondence being sent to the land owner. This inspection is not required by rule, but is done as a matter of internal policy within Ohio EPA. Based upon that fact that two identical, yet programmatically separate inspections are occurring at the burn area, Ohio EPA recommends eliminating the separate RCRA inspection and will rely on the CERCLA inspection to verify compliance with the IC's. A copy of the CERCLA inspection report must be sent to Ohio EPA's current RCRA program supervisor to ensure we are able to document compliance with the recommended RCRA inspection schedule. However, if at any time in the future, the CERCLA inspection is discontinued, Ohio EPA will require the RCRA inspection be conducted on an annual basis consistent with the procedures established prior to the issuance of this letter.

Ms. Gwendolyn Hooten
U.S. DOE Mound, Miamisburg, Burn Area Annual RCRA IC Inspection
April 19, 2016
Page 3 of 3

If there are any questions, please contact me at (937) 285-6035.

Sincerely,

A handwritten signature in black ink, appearing to read "R. G. Kirkland". The signature is fluid and cursive, with the first name "R" being particularly large and stylized.

Randall G. Kirkland
Environmental Supervisor
Division of Environmental Response and Revitalization

cc: Brian Nickel, Ohio EPA, DERR
Anthony Campbell, Ohio EPA, DERR
Erik Hagen, Ohio EPA, DERR
Robyn Winstead, Ohio EPA, DERR
David Seely, U.S. EPA, RPM
Larry Kelly, EM Consolidated Business Center
Chris Fine, City of Miamisburg
Eric Cluxton, Mound Development Corporation

RGK/bp

Appendix B
Property Information

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Property Records from Montgomery County Auditors Website

April 30, 2016

Parcel ID (PARID)	Parcel Location per Record	Legal Description	Land Use	Acres	Deed	Sale	Conveyance	Owner per Record	General Location	Applicable ROD
City Of Miamisburg Owned Property										
K46 01507 0025	Vanguard Blvd.	7994 Mound Advanced Technology Center Sec 1	C - Commercial Vacant Land	2.1941	201300079430 Mod 2015-00008913			City of Miamisburg Ohio	Left of main entrance	Parcel H minus road
K46 01507 0027	Capstone Dr.	7996 Mound Advanced Technology Center Sec 1	C - Other Commercial Structures	2.4123				City of Miamisburg	GH parking lot	Parcel 3 minus road
K46 01507 0028	Capstone Dr.	7997 Mound Advanced Technology Center Sec 1	C - Office Building 1-2 Stories	1.3139				City of Miamisburg	OSE Bldg. parking lot	Parcel 3 minus road
K46 01507 0029	Enterprise Ct.	7998 Mound Advanced Technology Center Sec 1	C - Office Building 1-2 Stories	2.3279				City of Miamisburg	Bldg. 102 1075 Mound Road	Phase IA
K46 01507 0037	Vanguard Blvd.	8006 Mound Advanced Technology Center Sec 1	C - Other Commercial Structures	0.8456				City of Miamisburg	Parking lot on right top of hill	Parcel 3 minus road
K46 01507 0038	Vantage Pt.	8024 Mound Advanced Technology Center Sec 1	C - Other Commercial Structures	7.8502				City of Miamisburg	Large parking lot	Parcel H minus road
K46 01507 0039	Vanguard Blvd.	8025 Mound Advanced Technology Center Sec 1-A	C - Other commercial structures	109.4752				City of Miamisburg	Large area with Parcel 4 & Phase I parts	Parcel 4, Phase IB, IC minus road
K46 01507 0041	Vanguard Blvd.	8027 Mound Advanced Technology Center Sec 1	C - Commercial Vacant Land	2.7833				City of Miamisburg and Miamisburg Mound Community Improvement Corp	Corner Benner and Rt. 25. Added former City Lot 4782 to Rt. 25	Parcel 4 minus road
K46 01507 0042	Vanguard Blvd.	8028 Mound Advanced Technology Center Sec 1-A	C - Commercial Vacant Land	14.8489				City of Miamisburg	Pond. Added former city lot 4781 to Rt. 25	Parcel 4 minus road
Total City Owned Property				144.0514						

Property Records from Montgomery County Auditors Website

April 30, 2016

Parcel ID (PARID)	Parcel Location per Record	Legal Description	Land Use	Acres	Deed	Sale	Conveyance	Owner per Record	General Location	Applicable ROD
MDC Owned Property										
K46 01109T0007	1374 Vanguard Dr.	5-2-30, 5-2-36 Abatement 11-9-8, 15-7-21,22	E - Com Reinvest Area Tax Abatement	0.0000	2002-00128007			Miamisburg Mound Community	Redundant record	
K46 01507 0030	Enterprise Ct.	7999 Mound Advanced Technology Center Sec 1	C - Other Commercial Structures	4.8008			LM note: transferred from City to MDC 5-7-15 QC Deed 2015-00023825 No notification to EPA as required by ICs	Mound Development Corporation	Bldg. 105 1095 Mound Road	Parcel D minus road
K46 01507 0032	Vanguard Blvd.	8001 Mound Advanced Technology Center Sec 1	I - Manufacturing & Assembly Medium	10.0802				Miamisburg Mound Community Improvement Corp.	Excelitas area	Phase IB
K46 01507 0040	1374 Vanguard Blvd.	8004 Mound Advanced Technology Center Sec 1	C - Commercial Warehouses	4.6975				Miamisburg Mound Community Improvement Corp.	Flex Building	Parcel 4
3			Total MDC Property	19.5785						
BOI Solutions Inc. Owned Property										
K46 00501 0017	955 Mound Road	2259	C - Office Building 1-2 Stories	5.3500	2012-00084260			BOI Solutions Inc.	Most of former 6A +parts of Parcel 7	Parcels 6, 7, and 8
K46 00501 0018	Mound Road	2259	E - Exempt Property Owned by USA	0.2710	2012-00084260			BOI Solutions Inc.	Part of 6A road front	Parcels 6, 7, and 8
2			Total BOI Property	5.6210						
Dyrdek Group Inc. Owned Property										
K46 01507 0031	790 Enterprise Ct.	8000 Mound Advanced Technology Center Sec 1	C - Office Building 1-2 Stories	5.5191	201400069587			Dyrdek Group Inc. 2850 Ocean Park Blvd. Ste 300 Santa Monica, CA 90405	Bldg. 100	Parcel D minus road
1			Total Dyrdek Property	5.5191						

Property Records from Montgomery County Auditors Website

April 30, 2016

DOE Owned Property										
PARID	Parcel Location on record	Legal Description	Land Use	Acres	Deed	Sale	Conveyance	Owner per Record	General Location	Applicable ROD
K46 00334 0021	Mound Ave.	5-2-36	E - Exempt Property Owned by USA	0.7235	01214P00012			United States of America	Small area north of Parcel 6	Parcels 6, 7, and 8
K46 00501 0002	Mound Rd	2259PT 5-1-9	E - Exempt Property Owned by USA	5.063	01214P00017			United States of America %	Most of Parcel 6	Parcels 6, 7, and 8
K46 00501 0015	Mound Rd	2259PT	E - Exempt Property Owned by USA	0.1170	2012-00082086		DOE HQ to EMCBC	United States of America Dept of Energy 250 E 5 th St Cincinnati, OH 45202	Northern slice of 6A	Parcels 6, 7, and 8
K46 00501 0016	Mound Rd	2259PT 2290PT, 5-2-30/36	E - Exempt Property Owned by USA	36.9990	2012-00082087		DOE HQ to EMCBC	United States of America Address unknown	Approximately Parcel 7	Parcels 6, 7, and 8
K46 00503 0013	Old Main St	2290PT	E - Exempt Property Owned by USA	64.257	01258P00056			United States of America %	Combo parts of Parcels 6, 8, and 9	Parcels 6, 7, and 8; Parcel 9
K46 00503 0030	Old Main St	2290PT	E - Exempt Property Owned by USA	1.922	2012 0082087			United States of America	Part of Parcel 7 east of Excelitas	Parcels 6, 7, and 8
K46 01109 0001	Benner Rd	4777PT	E - Exempt Property Owned by USA	10.2040	1981-00376A001			Harry Hill Area Mannager (sp) Dept of Energy Dayton Area PO Box 66 Miamisburg, OH 45343 0066	OU1 area	Parcel 9
K46 01109 0003	Dixie Dr S	4779	E - Exempt Property Owned by USA	1.6000	01258P00074			U S of America PO Box 271 Wilmington, OH 45177-0271	Road west of OU1 area	Parcel 9
8			Total DOE Property	120.8855						
Total site acreage showing on county website				295.6555						
				Historical acreage	305.0630					
				Difference	-9.4075					

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Appendix C

**Information on T Building Rooms with Special ICs:
T Building Special ICs Core Team Agreement and Position Paper
and 2010 Baseline Photos**

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T Building Rooms with Special ICs

In addition to the ICs for the entire site, the T Building has the following additional IC restrictions as described in the Parcels 6, 7, and 8 Record of Decision. The restrictions:

1. Prohibit the removal of concrete floor material in specified rooms of the T Building (Figure C-1) to offsite locations without prior approval from EPA, Ohio EPA, and ODH.
2. Prohibit the penetration of concrete floors in specified rooms of the T Building (Figure C-1) without prior approval from EPA, Ohio EPA, and ODH.

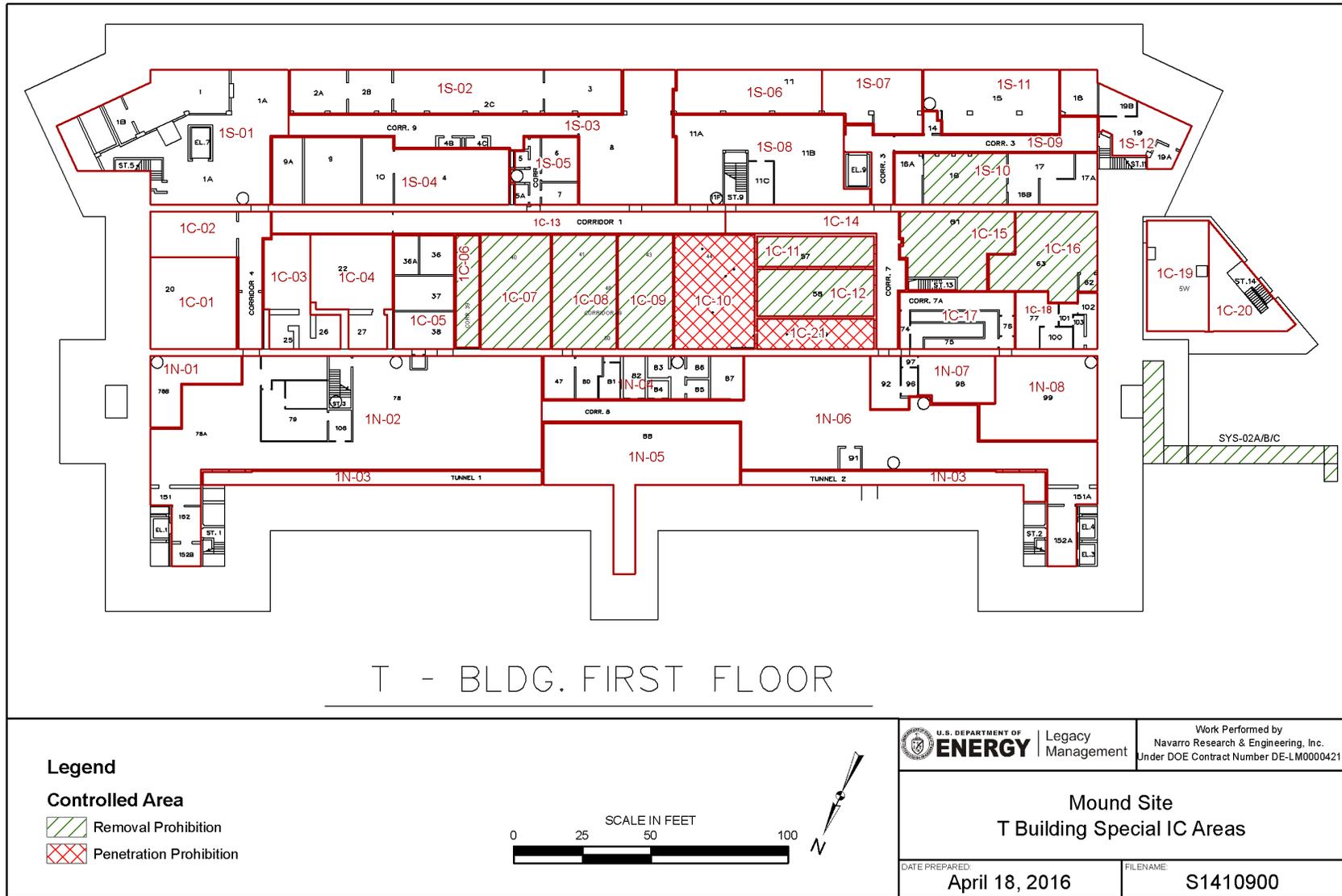
On June 29, 2009, the Mound Core Team signed an agreement for a position paper that provided policy guidelines for limited activities in these rooms that should not result in unacceptable risk to workers in the building.

The four-page agreement and position paper, known as the T Building Special ICs Core Team Agreement and Position Paper, 6-29-09 (DOE 2009a), is included in the CERCLA administrative record, in this appendix, and will be included in subsequent annual IC assessment reports.

Photos of T Building Rooms

The photos in this appendix show the baseline conditions of the rooms in April 2010. No changes have occurred since those photos were taken (Figures C-2 through C-47). Appendix D of this IC assessment report documents the condition of the cracks in the red concrete cap in Room 44 (survey area IC-10) and Room 59 (survey unit IC-21).

MDC took over maintenance of the T Building in December 2012 under the lease amendment No. 25 to the General Purpose Lease.



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Figure C-1. T Building Rooms with Special ICs



The Mound Core Team
 P.O. Box 66
 Miamisburg, Ohio 45343-0066

6/29/09

As you know, The Proposed Plan for Parcels 6, 7 and 8 contains a restriction on the use of T Building which prohibits the penetration of concrete floors in rooms 50, 57 and 59 of T Building without prior approval from USEPA, OEPA, and ODH. The Miamisburg Mound Community Improvement Corporation (MMCIC) has asked the Core Team for a "blanket" approval to conduct limited activities in these rooms that should not result in an unacceptable risk to workers in the building.

The Core Team has evaluated this request and hereby grants approval for these activities provided they are conducted in accordance with the following policy guidelines:

1. Any driven penetration (e.g. concrete nails or explosive driven nails) of up to four inches in depth can be conducted without approval. As notification, the Core Team shall be provided a description of the activity, drawing of the room, and location of the proposed penetrations two weeks prior to physical activity.
2. Penetrations that involve removal of concrete shall be filled with concrete or steel. They shall not exceed four inches depth without approval of the Core Team. All penetrations of four inches or less requiring removal of concrete (drilling etc.) will require the submittal of a description of the activity, drawing of the room, and location of the proposed penetrations to the Core Team two weeks prior to the physical activity for notification purposes.
3. Any actions which remove or damage the concrete (including "driven penetrations") shall be filled within 120 days of completion.
4. Routine T Building occupants should be excluded from the area of activity for the duration of the renovation.

For your information, the Core Team has prepared the attached Position Paper which the Core Team used in its evaluation. MMCIC can use this Position Paper and these policy guidelines in determining which future activities may be acceptable to the Core Team in rooms 50, 57 and 59 of T Building. In any event, MMCIC must request approval for any activity not on this approved list.

DOE/MEMP: Paul C Lucas 7/14/09
 Paul C. Lucas, Remedial Project Manager

USEPA: Timothy J. Fischer
 Timothy J. Fischer, Remedial Project Manager

OEPA: Brian K. Nickel 7/14/09
 Brian K. Nickel, Project Manager

Position Paper
T Building Cap Areas Renovation Guidelines

Background: T Building (Technical Building) is a massively constructed building on the Mound site with ten foot thick heavily reinforced concrete floors and similarly robust ceilings and walls. During the remediation of the T Building, the contractor encountered bulk contamination of the floor and footings in certain areas. Attempts to complete remediation of the contaminated floor and footer in the west end of room 50 and east end of rooms 57 and 59 were technically and economically difficult to justify. Following an assessment of the risks involved to the building's structural integrity if removal of contaminated concrete continued (attached), a decision was made to leave the contaminated concrete sub floor and footer in place, and to add a cap of color coded (red) concrete to provide a margin of safety from the residual contamination. The Department of Energy (DOE) currently owns the facility and wishes to transfer ownership to the Miamisburg Mound Community Improvement Corporation (MMMIC) for future development. To ensure the health and safety of future workers and occupants of T Building, a deed restriction will be placed on T Building limiting the disturbance of concrete in those areas with residual contamination. This paper outlines some of the technical basis allowing latitude in the disturbance of the concrete cap.

As stated above, the DOE and its contractors evaluated the residual contamination to ensure that future worker safety was protected. Specifically future worker doses were modeled to ensure that they would not reasonably be expected to receive an additional 15 mrem of equivalent dose due to occupation in T Building. Samples of the residual contamination were taken. As a conservative measure, the average of the five highest areas of contamination was used as input for the entire area. This data was input into the RESRAD Build dose evaluation code. This code is jointly developed by the DOE and the Nuclear Regulatory Commission (NRC) for just this type of situation.

Under this scenario, two types of workers were evaluated. The first type was an office worker who occupies the building for an entire year. Doses for this type of worker were previously calculated and found to fall within the 15 mrem per year guidelines. The calculations for this type of worker assume that no renovation is occurring while that worker occupies the area, i.e. the concrete cap is intact. A second worker, the renovation worker, was originally modeled using similar physical characteristics of the building, but differing inputs commensurate with the type of work. For example, the breathing rates and occupancy rates for the renovation worker differ from that of an office worker. The original calculations for the renovation worker in T Building were 1.86 mrem. Of that dose, 0.17 mrem is due to direct radiation from the residual contamination under the protective cap. The remainder is from low level residual contamination throughout T Building.

A review of the Final Status Surveys for T Building indicates that the thickness of the cap is nominally 11 inches. It was placed at this thickness to bring the floor elevation level with the adjoining hallway floor surfaces. Based on the very low dose rates cited above (0.17 mrem) for external exposure, there is excess concrete serving as a shielding material for the bulk contamination below. This would allow for temporary removal or penetration of some portion of this concrete to allow for anchoring of equipment and walls of future tenants. It should be noted,

that in order to maintain the integrity of the calculations for the office worker, any floor penetration should be repaired or steel anchors inserted (steel being a better shield than concrete).

Calculations: As implied, records for the original calculations were retrieved from storage. Although it was generally known that excess concrete was placed, there was no known calculation of how much excess existed and none was found during the review of the records. The RESRAD Build calculations that were found used all 11 inches of concrete as shielding to arrive at the 0.17 mrem cited earlier. In addition, due to the presence of the cap, it was assumed that none of the contamination contained in the subsurface concrete and footers becomes airborne.

RESRAD Build continues to be maintained and updated by Argonne National Laboratory. The current version is slightly modified from the version originally used to model these doses. In order to ensure continuity, a baseline calculation was performed using the parameters from the original calculations. With only slight variations, they agreed. The original calculations indicated 1.70 mrem due to other building residual contamination. The new version calculated this same component to be 1.69 mrem. The total for both the cap area and the remainder of the building was 1.86 mrem for both versions, indicating strong agreement between the two.

In order to establish a margin of safety another calculation used the same input parameters except that the thickness of the cap was reduced by seven inches (to a nominal four inches total thickness). This further reduced thickness yielded an exposure to the renovation worker of 5.93 mrem. This remains protective of the renovation worker.

Recommendation: If the core team decides to allow penetration of the "red" concrete cap, it would be prudent to allow for some margin of safety to preclude accidental penetration to depths greater than currently analyzed. Note that the cap penetrations should be restored or replaced with anchors that provide similar or greater shielding capabilities. Recall also that one of the major assumptions is that the cap prevents the contamination below it from becoming airborne, so that the integrity of the cap must be maintained. Consideration must be given to the ability to ensure that recommendations are followed (i.e. penetrations are not greater than depth specified etc.). Also note that additional work could be carried out safely but may require additional analysis.

Policy Guidelines: As discussed, some guidelines should be established to administer penetration of the concrete in these areas. Such guidelines could be as follows:

1. Any driven penetration (e.g. concrete nails or explosive driven nails) of up to four inches in depth can be conducted without approval. As notification, the Core Team should be provided a description of the activity, drawing of the room, and location of the proposed penetrations two weeks prior to physical activity.
2. Penetrations that involve removal of concrete shall be filled with concrete or steel. They shall not exceed four inches depth without approval of the Core Team. All penetrations of four inches or less requiring removal of concrete (drilling etc.) will require the submittal of a description of the activity, drawing of the room, and location of the proposed penetrations to the Core Team two weeks prior to the physical activity for notification purposes.
3. Any actions which remove or damage the concrete (including "driven penetrations") shall be filled within 120 days of completion.
4. Routine T Building occupants should be excluded from the area of activity for the duration of the renovation.

(The floorplan to the right shows the camera angles for Figures C-2 through C-11.)

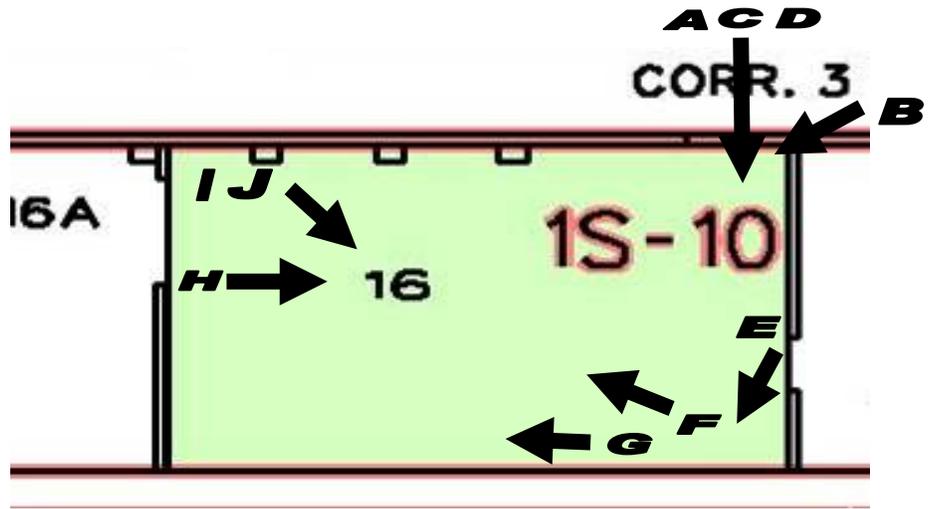


Figure C-2. T Building Room 16 View A



Figure C-3. T Building Room 16 View B



Figure C-4. T Building Room 16 View C



Figure C-5. T Building Room 16 View D



Figure C-6. T Building Room 16 View E



Figure C-7. T Building Room 16 View F



Figure C-8. T Building Room 16 View G



Figure C-9. T Building Room 16 View H



Figure C-10. Building Room 16 View I



Figure C-11. T Building Room 16 View J

(The floorplan to the right shows the camera angles for Figures C-12 through C-19.)

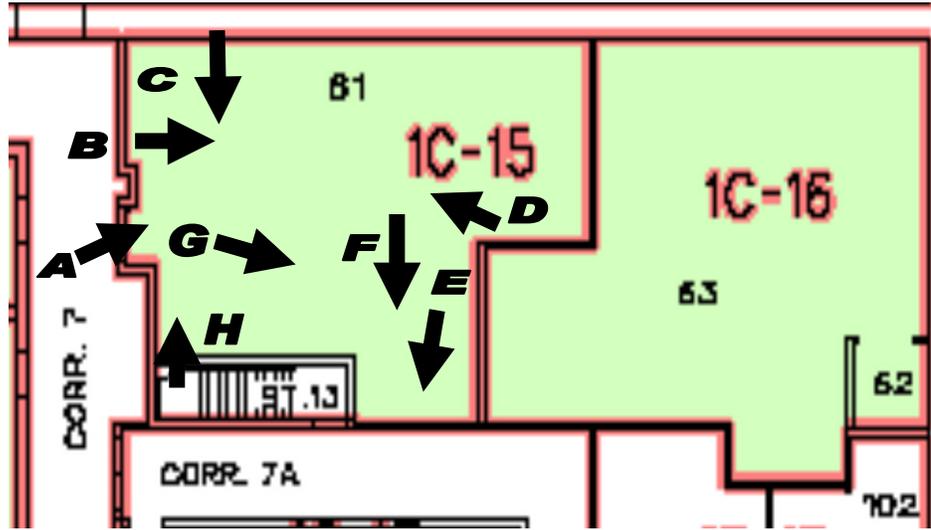


Figure C-12. T Building Room 61 View A



Figure C-13. T Building Room 61 View B



Figure C-14. T Building Room 61 View C



Figure C-15. T Building Room 61 View D



Figure C-16. T Building Room 61 View E



Figure C-17. T Building Room 61 View F



Figure C-18. T Building Room 61 View G



Figure C-19. T Building Room 61 View H

(The floorplan to the right shows the camera angles for Figures C-20 through C-31.)

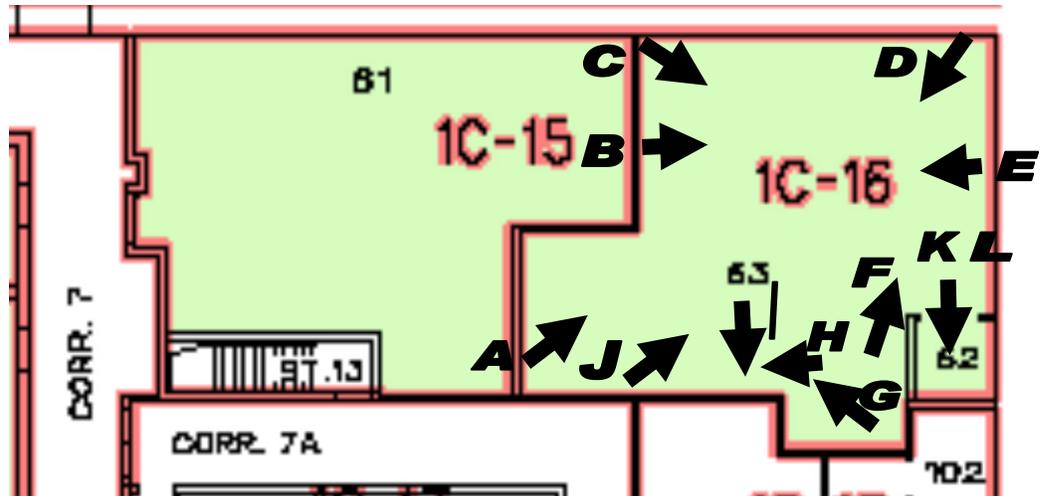


Figure C-20. T Building Room 63 View A



Figure C-21. T Building Room 63 View B



Figure C-22. Building Room 63 View C



Figure C-23. T Building Room 63 View D



Figure C-24. T Building Room 63 View E



Figure C-25. T Building Room 63 View F



Figure C-26. T Building Room 63 View G



Figure C-27. T Building Room 63 View H



Figure C-28. T Building Room 63 View I



Figure C-29. T Building Room 63 View J



Figure C-30. T Building Room 62 View K



Figure C-31. T Building Room 62 View L

(The floorplan to the right shows the camera angles for Figures C-32 through C-37.)

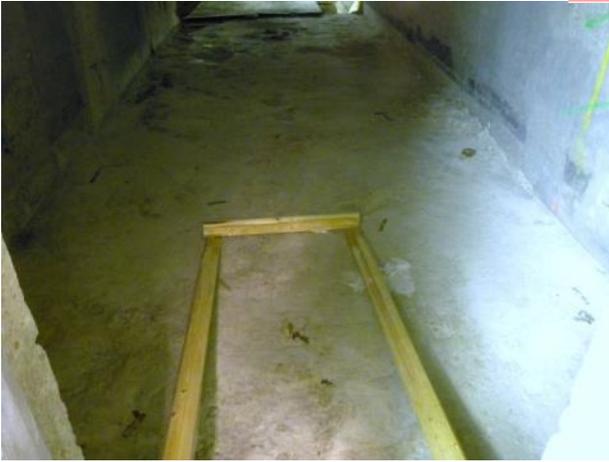
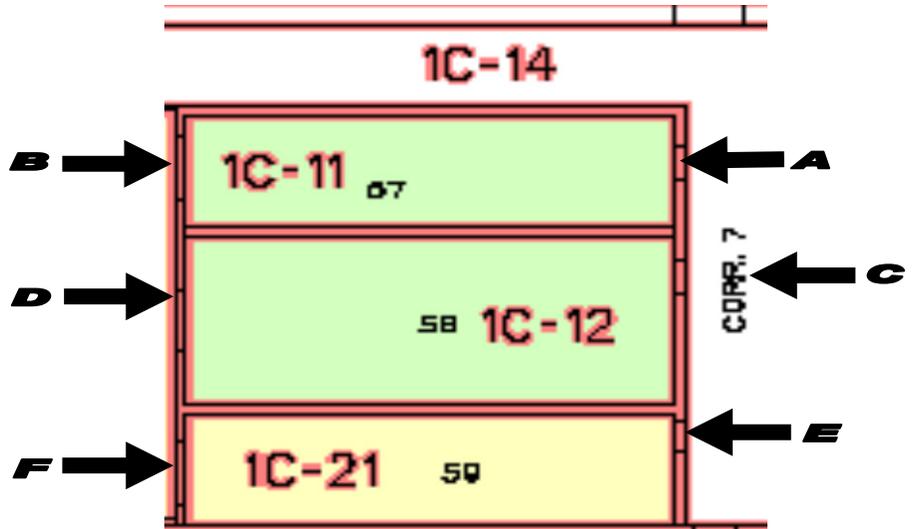


Figure C-32. T Building Room 57 View A



Figure C-33. T Building Room 57 View B



Figure C-34. T Building Room 58 View C



Figure C-35. T Building Room 58 View D



Figure C-36. T Building Room 59 View E



Figure C-37. T Building Room 59 View F

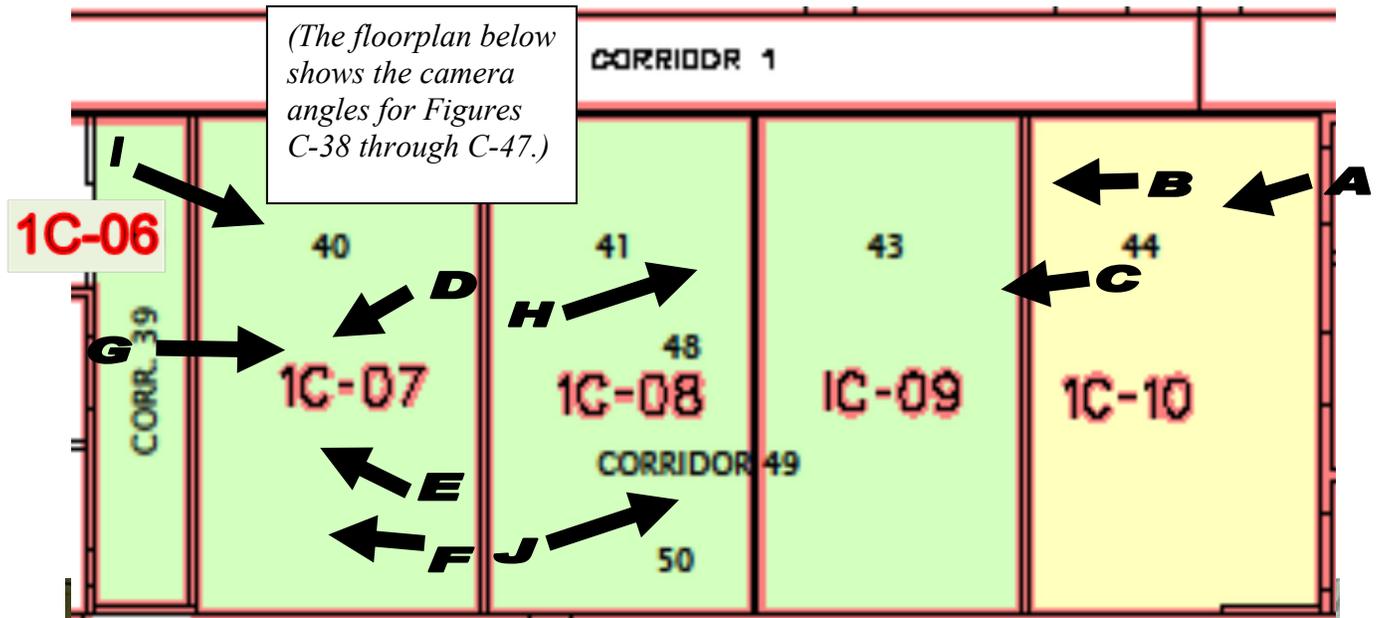


Figure C-38. T Building Rooms 39–44 and 48–50
View A



Figure C-39. T Building Rooms 39–44 and 48–50
View B



Figure C-40. T Building Rooms 39–44 and 48–50
View C



Figure C-41. T Building Rooms 39–44 and 48–50
View D



Figure C-42. T Building Rooms 39-44 and 48-50
View E



Figure C-43. T Building Rooms 39-44 and 48-50
View F



Figure C-44. T Building Rooms 39-44 and 48-50
View G



Figure C-45. T Building Rooms 39-44 and 48-50
View H



Figure C-46. T Building Rooms 39-44 and 48-50
View I



Figure C-47. T Building Rooms 39-44 and 48-50
View J

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Appendix D

Photos in 2016 of T Building Red Concrete Cracks

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T Building Red Concrete Cracks Photos

The photographs in Figure D-1 were taken on March 8, 2016, for the 2016 Mound Site Annual IC Assessment to document the current condition of the cracks in the red concrete in specified rooms in the T Building.

The locations of the crack monitoring points are shown in Figure D-2.



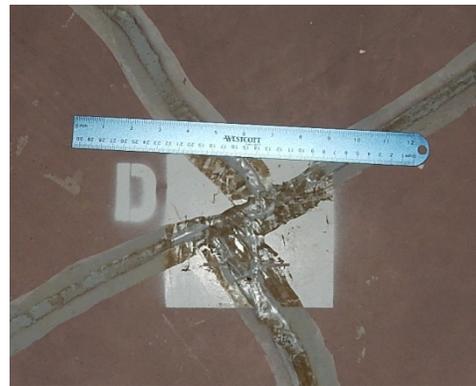
Monitoring point A



Monitoring point B



Monitoring point C



Monitoring point D



Monitoring point E



Monitoring point F

Figure D-1. Condition of the Cracks in the Red Concrete in Specified Rooms in the T Building, March 2016



Monitoring point G

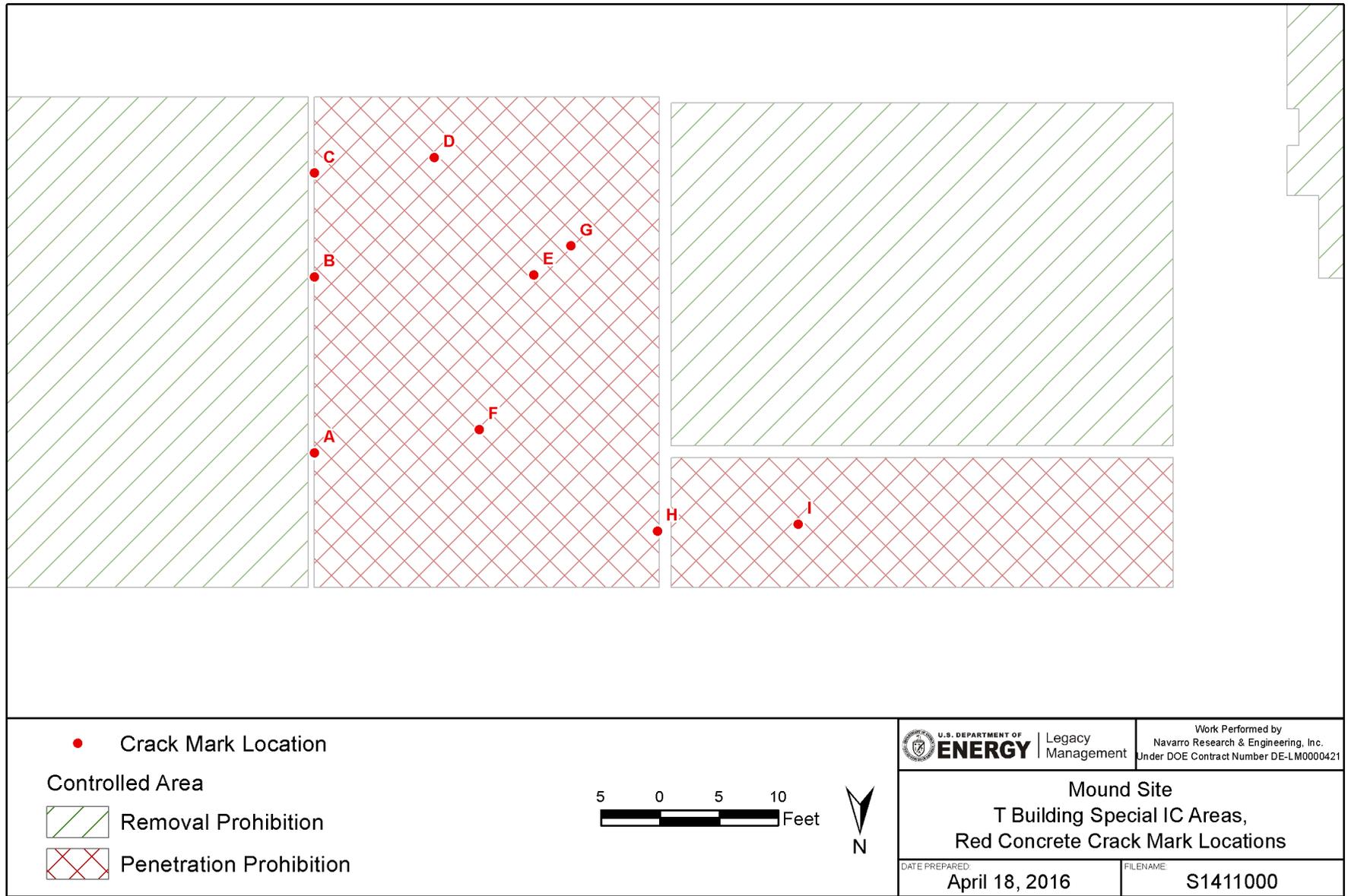


Monitoring point H



Monitoring point I

Figure D-1 (continued). Condition of the Cracks in the Red Concrete in Specified Rooms in the T Building, March 2016



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Figure D-2. Mound Site, T Building Special IC Areas, Red Concrete Crack Mark Locations

ATC 100

Description and Uses

ATC 100 is a single component elastomeric sealant without free isocyanates or solvents (VOCs.) It cures rapidly by drying to form a flexible joint between substrates. It has excellent adhesion to most materials including plywood, plastic, concrete, masonry and metal.

ATC 100 is a hybrid water, vapor, gas and radon resistant sealant polymer, specially designed to adhere to damp or dry surfaces, making it excellent for sealing cove joints and concrete floor cracks against radon, methane, water, water vapor and other soil gasses. ATC 100 is excellent for bonding plastic, concrete and other materials and substrates. ATC 100 is UV resistant and can be used on exterior and interior surfaces. ATC 100 can be painted after curing

Where to Use

- Cove joints
- Concrete floor cracks
- Interior or exterior

Advantages

- No VOCs
- Combines the best qualities of polyurethane and silicone sealant
- Non-yellowing
- Isocyanate free
- High bond strength
- Easy flow

Technical Data

Appearance	Pasty
Color	Grey
Density at 200 C	1.65 +/- 0.05
Sagging (ISO 73900)	No
Application Temperature	40 ^o -100 ^o F
Temperature resistance	-4 ^o -190 ^o F
Cure Time @ 750F and 50% HR	50 minutes
Skin Formation time @750F and 50% HR	24-36 Hrs
Final Shore A Hardness (ISO 868-3 sec.)	>30
Modulus at 100% (ISO 8339)	>70 psi
Elongation at Break (ISO 8339)	>140 psi
Resistance to dilute acids and bases	Good
UV Resistance	Excellent
Water and salt spray resistance	Excellent
Compatibility with paints	Yes

Application Instructions

Preparation:

The substrates must be clean, dry free of dust, oil, grease, and any contaminants that could harm bonding. All traces of poorly adhered paint or coatings should be removed beforehand. If the substrates to be cleaned, solvents such as methylethylketone (MEK) or acetone may be used. Check the compatibility of the solvent used with the substrates. It may be necessary to rub down the substrate beforehand. After rubbing down, the surface should be recleaned. Allow the substrate to dry after degreasing. Note: When using solvents, extinguish all sources of ignition and carefully follow the safety and handling instruction given by the manufacturer or supplier.

Caulking:

ATC 100 may be applied by manual or pneumatic gun.

After application, each joint should be tight up to the joint lip and smoothed with a putty knife. This product should be used within 24 hours of opening the cartridge. If stored in cold weather, store the cartridges at 70°F prior to use.

Drying Time

Skin time is 50 minutes. Full cure at 24 hours depending on temperature and humidity.

Clean Up

Tools should be cleaned with MEK or acetone before the sealant has completely cured. After curing, abrasion is necessary.

Storage and Shelf Life

12 months in the original hermetically sealed packaging between 40-75°F.

Packaging

10.4 oz cartridges

Safety

Not classified as hazardous. Read the MSDS before use.

Warranty

Recommendations concerning the performance or use of this product are based upon independent test reports believed to be reliable. If the product is proven to be defective, at the option of the Manufacturer, it will be either replaced or the purchase price refunded. The Manufacturer will not be liable in excess of the purchase price. The user will be responsible for deciding if the product is suitable for his application and will assume all risk associated with the use of the product. This warranty is in lieu of any other warranty expressed or implied, including but not limited to an implied warranty of merchantability or an implied warranty of fitness for a particular use.

THE FOREGOING WARRANTY SHALL BE EXCLUSIVELY AND IN LIEU OF AN OTHER WARRANTY, EXPRESS OR IMPLIED INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR USE AND PURPOSE AND ALL OTHER WARRANTIES OTHERWISE ARISING BY OPERATION OF LAW, COURSE OR DEALING, CUSTOM, TRADE OR OTHERWISE

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Appendix E

Example of Real-Estate Easement for Utility Work Performed on MDC Property

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**SUPPLEMENTARY DECLARATION OF EASEMENT TO
REAL ESTATE EASEMENT NO. 99-OH-00011**

THIS SUPPLEMENTARY DECLARATION OF EASEMENT TO REAL ESTATE EASEMENT NO. 99-OH-00011 ("Supplementary Declaration of Easement") is made on this 17th day of March, 2003, by MIAMISBURG MOUND COMMUNITY IMPROVEMENT CORPORATION, an Ohio non-profit corporation ("Declarant") under the terms and conditions set forth below.

RECITALS:

A. By virtue of Real Estate Easement No. 99-OH-00011 executed on September 22, 1999, and recorded at Microfiche No. 99-0702D09 (the "Original Easement"), The United States of America, acting by and through the Department of Energy ("DOE"), granted to AMERITECH an easement for the installation of communication lines over the area depicted in the Original Easement (the "Original Easement Area"), described in Exhibit A, attached hereto and incorporated herein by reference.

B. By virtue of a Quitclaim Deed dated August 4, 1999, and recorded at Microfiche No. 99-0852B11 of the Montgomery County, Ohio Recorder's office, and by virtue of a Quitclaim Deed dated November 19, 1999, and recorded at Microfiche No. 99-0852B05 of such Recorder's office, The United States of America, acting by and through the Secretary of the DOE, conveyed to Declarant the real property described on Exhibit B, attached hereto and incorporated herein by reference ("Declarant's Property"), which property is burdened by the Original Easement.

C. Declarant now desires to expand the Original Easement Area on the terms and conditions set forth herein.

NOW, THEREFORE, in consideration of the recitals set forth above and the terms and conditions set forth below, Declarant hereby declares as follows:

1. Grant. Declarant hereby grants to AMERITECH, its successors and assigns, a permanent, non-exclusive easement upon, over and under the area of the Declarant's Property described in Exhibit C, attached hereto and incorporated herein by reference ("Expanded Easement Area"). By making use of the Expanded Easement Area, AMERITECH shall be deemed to have agreed to be bound by the terms and conditions of this Declaration.

2. Compliance With Restrictions. AMERITECH shall have reviewed the restrictions and covenants set forth in the Deeds by which DOE conveyed to Declarant the Declarant's Property prior to the construction or installation of any of AMERITECH's equipment. AMERITECH agrees that, as set forth in the Deeds, its use of the Expanded Easement Area is subject to the terms thereof, and further agrees to be bound to comply with the restrictions and covenants set forth therein, including without limitation, the following:

2.1 Excepting those soils in an area approximately 40 feet wide and 218.17 feet long, bounded on the east by the centerline of Mound Road as described above, Grantee covenants that any soil from the Premises shall not be placed on any property outside the boundaries of that described in instruments recorded at Deed Book 1214, pages 10, 12, 15, 17 and 248; Deed Book 1215, page 347; Deed Book 1246,

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EASE-03-03B151 0023
Montgomery County
Judy Dodge Recorder

page 45; Deed Book 1258, pages 56 and 74; Deed; Deed Book 1256, page 179; Micro-Fiche 81-376A01; and Micro-Fiche 81-323A11 of the Deed Records of Montgomery County, Ohio (and as illustrated in the CERCLA 120(h) Summary, Notices of Hazardous Substances Release Block D, Mound Plant, Miamisburg, Ohio dated January, 1999) without prior written approval from the Ohio Department of Health (ODH), or a successor agency. AMERITECH warrants that it will make its officers, agents, contractors, employees, and others for whom it is responsible aware of the restriction on soil removal and contractually obligate agents and contractors to abide by this restriction.

2.2 Each utility provider covenants not to use, or allow the use of, the Declarant's Property for any residential or farming activities, or any other activities that could result in the chronic exposure of children under eighteen years of age to soil or groundwater from the Declarant's Property. Restricted uses shall include, but not be limited to:

- (1) single or multifamily dwellings or rental units;
- (2) day care facilities;
- (3) schools or other educational facilities for children under eighteen years of age; and
- (4) community centers, playgrounds, or other recreational religious facilities for children under eighteen years of age.

Declarant shall be contacted to resolve any questions that may arise as to whether a particular activity would be considered a restricted use.

2.3 AMERITECH covenants not to extract, consume, expose, or use in any way the groundwater underlying the Declarant's Property without the prior written approval of the United States Environmental Protection Agency (Region V) and the OEPA.

If there is any conflict between the terms of the Deeds and this Supplementary Declaration of Easement, the terms of the Deeds shall control.

3. Incorporation of Original Easement. This Supplementary Declaration of Easement incorporates by reference all of the terms, conditions and covenants of the Original Easement Agreement. By its acceptance of the easement granted in this Supplementary Declaration of Easement, AMERITECH hereby covenants to comply with and observe the terms, conditions and covenants of the Original Easement for the benefit of Declarant, its successors and assigns forever, and agrees that Declarant, its successors and assigns forever, shall have the right to enforce such terms, covenants and conditions. As used in the Original Easement, the term "premises" shall mean Declarant's real property, whether or not burdened by the easements granted herein or in the Original Easement, and all surrounding Government-owned real property. All notices required to be provided to the DOE under the Original Easement shall be provided to Declarant at 720 Mound Road, COS Bldg., Suite 480, Miamisburg, Ohio 45342-6714, Attn: Planning Manager, or such other address as provided by Grantor.

4. Reservation. Declarant reserves for itself, its successors and assigns forever, the right to use the Expanded Easement Area for any purpose not inconsistent with the rights conveyed to AMERITECH herein; provided however, that Declarant shall not use the Expanded Easement Area in a manner that will prevent or hinder its use by AMERITECH for the purposes provided herein.

5. Covenants Run with the Land: All covenants, agreements and conditions contained in this Supplementary Declaration of Easement shall be considered as running with the land.

IN WITNESS WHEREOF, the undersigned has executed this Supplementary Declaration of Easement on behalf of Declarant as of the day and year first set forth above.

DECLARANT:

MIAMISBURG MOUND COMMUNITY
IMPROVEMENT CORPORATION

By: Michael J. Grawinkelman

Printed Name: Michael J. Grawinkelman

Title: President

STATE OF OHIO, COUNTY OF MONTGOMERY, SS:

The foregoing instrument was acknowledged before me this 18th day of March, 2003, by Michael J. Grawinkelman the President of MIAMISBURG MOUND COMMUNITY IMPROVEMENT CORPORATION, an Ohio non-profit corporation, on behalf of said corporation.

Jean Wysock
NOTARY PUBLIC

Jean Wysock, Notary Public
In and for the State of Ohio
My Commission Expires June 28, 2004

This instrument prepared by:
Sharon L. Costello, Esq.
CooEdge Wall Womsey & Lombard Co., L.P.A.
33 W. First Street, Suite 600
Dayton, Ohio 45402

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Appendix F

Aerial Photo with ROD Parcel Boundaries, March 2016

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Figure F-1. Mound Site 2016 Aerial Photo Showing ROD Parcel Boundaries

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