

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

June 2014



U.S. DEPARTMENT OF
ENERGY

Legacy
Management

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Abbreviations

Blvd.	Boulevard
BOI	BOI Solutions
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CRP	Comprehensive Reuse Plan
DOE	U.S. Department of Energy
EM	Office of Environmental Management
EMCBC	Environmental Management Consolidated Business Center
EPA	U.S. Environmental Protection Agency
ES	CERCLA 120(h) Summary Notice of Hazardous Substances 120(h) Environmental Summary
GH	Guard House
IC	institutional control
LM	Office of Legacy Management
MDC	Mound Development Corporation (formerly MMCIC)
MMCIC	Miamisburg Mound Community Improvement Corporation
O&M Plan	<i>Operations and Maintenance Plan for the U.S. Department of Energy Mound, Ohio, Site</i>
ODH	Ohio Department of Health
Ohio EPA	Ohio Environmental Protection Agency
OU-1	Operable Unit 1
RCRA	Resource Conservation and Recovery Act
ROD	record of decision
Stoller	The S.M. Stoller Corporation, a wholly owned subsidiary of Huntington Ingalls Industries

1.0 Introduction

This report documents the U.S. Department of Energy (DOE) Office of Legacy Management (LM) 2014 annual assessment of the effectiveness of sitewide institutional controls (ICs) for the entire Mound, Ohio, Site¹ in Miamisburg (referred to in this document as the Mound site) for the period from May 1, 2013, to April 30, 2014.

ICs, which are part of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) remedies for the site, are non-engineered 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) requirements for property transfer as an industrial-use site.

The annual IC assessment process and this 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 2014c) (O&M Plan)
- *Long-Term Surveillance and Maintenance Plan for the U.S. Department of Energy Mound, Ohio, Site* (DOE 2014b) (LTS&M Plan)
- *Community Involvement Plan for the U.S. Department of Energy Mound, Ohio, Site* (DOE 2014a) (CIP)

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) listed in Table 1. The ICs were developed with input from the public, the City of Miamisburg, 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 deeds or (2) activity and use limitations in the environmental covenant and the lease agreement.

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.

This 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.

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 Miamisburg Closure Project (MCP). Currently, LM uses Mound, Ohio, Site as the formal name of the site.

2.0 Period of Review

This annual assessment covers the period from May 1, 2013, to April 30, 2014. 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 EPA, Ohio EPA, ODH, MDC, and the City of Miamisburg 30 days before the visual inspection. DOE 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 relating 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:
 - 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 for IC-related requests to EPA and Ohio EPA to approve land uses, soil removal, groundwater use, penetration, and removal of concrete in 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. 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 website and the well-drilling information posted to determine if unauthorized wells were drilled onsite.
- Walkdown with EPA, Ohio EPA, ODH, the City of Miamisburg, and MDC on April 15.
- IC inspectors followed the checklist in Appendix A.

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 Records of Decision

Table 1, taken from the O&M Plan, lists the eight Mound site RODs with the ROD and ES titles and their approval dates.

Table 1. Mound Site ROD and ES Information

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

Table 2 summarizes the final ROD parcel identifications (IDs), dates, acreages, remedies, legal enforcement instruments, and IC objectives.

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

ROD Parcel ID	Former ID or Other Names	ROD Date	Acreage in ROD	Remedy	Owner	Legal Enforcement Instrument	Objectives of ICs
OU-1	Area B, landfill area	1995	See Parcel 9	See Parcel 9	See Parcel 9	See Parcel 9	Restrict land use to industrial only.
D	Release Block D	1999	12.43	ICs	MDC and City of Miamisburg	Deed restrictions in quitclaim deed dated February 11, 2009, and quitclaim deed November 13, 2013 (File #2013-00079430)	
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			
	B		42.882				
	C		6.568	ICs			
6	6, 6A, 7, and 8	2009	13.636	Monitored natural attenuation	DOE leased to MDC	Appendix #1 to General Purpose Lease Agreement (December 2013)	
7			42.307				
8			45.247				
			2.352 or 3.320				
	Tract 1 Tract 2 (part of 6A and 7)		5.350	ICs	BOI Solutions	Deed restrictions in MDC limited warranty deed dated December 14, 2012	
		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 Surface water controls Long-term groundwater monitoring ICs	DOE	Environmental Covenant approved December 22, 2011 (Recorded as Special Instrument Deed 2012-00004722 on January 24, 2012)	Provide site access for federal and state agencies for taking response actions, including sampling and monitoring.
OU-4	Miami-Erie Canal	2004	On City property	No action	City of Miamisburg	None required	No ICs required

^a Portions of the New or South Property are included in Phase I and Parcel 9 areas.

Figure 1 shows the ROD parcels outlined in purple within the 1998 Mound Plant property boundary. The OU-4 former canal area located west of the site is outlined in gold.

As property transfers, the site will be divided into different real estate lot configurations, and these new lots will not match the ROD parcels. The ROD parcel boundaries are relevant because they identify which ROD covers which area of the site, regardless of new property lines.

Appendix E details the property information on the Montgomery County, Ohio, website as of April 25, 2014.

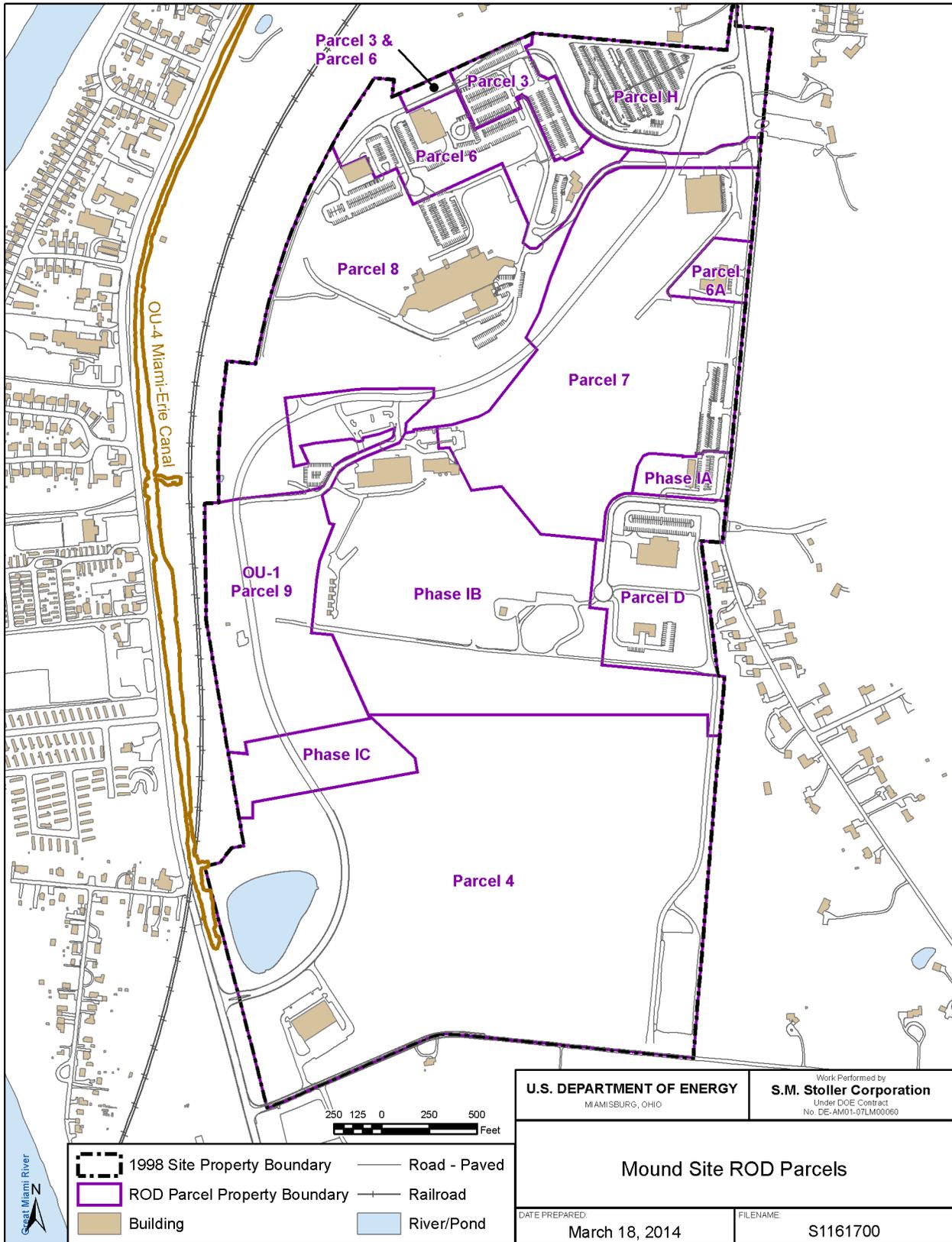


Figure 1. ROD Parcel Boundaries for the Mound Site, Miamisburg, Ohio

5.0 Overview of Institutional Controls

ICs are an important component of the remedies selected for the Mound site. EPA defines ICs as non-engineered 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 an “industrial use” standard consistent with the exposure assumptions provided in the *MOUND 2000 Residual Risk Evaluation Methodology* (DOE 1997) and endorsed by the EPA and the Ohio EPA. Because the site is not approved for unlimited use, ICs were imposed as part of the CERCLA remedy defined in each ROD listed in Section 4.0. The Mound ICs were developed with input from the public, the City of Miamisburg, EPA, Ohio EPA, ODH, and MDC.

The Mound site ICs run with the land in the form of (1) restrictions and covenants in the quitclaim 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 Tank, and Resource Conservation and Recovery Act Cleanups* (EPA 2005).

The Mound site ICs are designed to:

1. **Prohibit the removal of soil** from within the original DOE Mound site property boundaries, without prior written approval from Ohio EPA and ODH.
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. **Limit land use to industrial/commercial use only.** 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 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.
4. **Prohibit the removal of concrete floor material** from specified rooms of T Building (Appendix C) to offsite locations without prior approval from EPA, Ohio EPA, and ODH.
5. **Prohibit the penetration of concrete floors** in specified rooms of T Building (Appendix C) without prior approval from EPA, Ohio EPA, and ODH.
6. **Allow site access for federal and state agencies** for sampling and monitoring.

The RODs 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 2 is an aerial photo, taken in March 2011, which shows the entire site looking north.

Appendix F contains a March 2011 aerial photo with the ROD boundaries. Aerial photos are normally taken before each CERCLA Five-Year Review; the next one is planned for 2016.

7.0 Summary of 2013 Annual Assessment and 2011 CERCLA Five-Year Review

7.1 2013 Annual Assessment

7.1.1 Summary

As stated in the *Annual Assessment of the Effectiveness of Site-Wide Institutional Controls Applied to the Former DOE Mound Site Property* (DOE 2013b), 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

There were two recommendations from the 2013 annual assessment:

1. Review the records regarding the purpose of the red concrete. Discuss with the Core Team.
2. Repeat the photographs of the cracks in the red concrete in 2014.

7.2 2011 CERCLA Five-Year Review

7.2.1 Five-Year Review Summary

In 2011, DOE conducted the CERCLA Five-Year Review, 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



Figure 2. Mound Site Looking North (March 2011)

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 following three recommendations were identified as a result of the five-year review and associated actions:

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, EPA concurred with the protectiveness statements and approved the report. However, EPA also listed the following issues that must be addressed in future Five-Year Reviews at the Mound site:

- 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

The S.M. Stoller Corporation, a wholly owned subsidiary of Huntington Ingalls Industries (Stoller), personnel conducted thorough physical inspections in 2014 before hosting the physical walkdown with EPA, Ohio EPA, ODH, and MDC. Those preliminary inspections looked for violations of ICs (such as soil removal, well installation, nonindustrial/noncommercial use) and reviewed the physical conditions of wells and seeps.

The walkdown with the regulators and stakeholders occurred on April 15, 2014, with a driving tour of the site. Gwen Hooten, LM Mound Site Manager, began the walkdown at the Mound Science and Energy Museum with a presentation that defined the scope of the annual assessment and presented the results of the preliminary inspections (Figures 3 and 4). Participants were given a safety briefing, a copy of the presentation, and the IC checklist for the walkdown.

Participants in the annual walkdown included: Gwen Hooten and Shelly Vigil, LM; Larry Kelly, Environmental Management Consolidated Business Center (EMCBC); Tim Fischer, EPA; Anthony Campbell, Ohio EPA; Shannon Dettmer, ODH; Frank Bullock, MDC; Melissa Lutz, Gary Weidenbach, and Bob Ransbottom, Stoller; and Joyce Massie, subcontractor to J.G. Management Systems Inc.



Figure 3. Prewalkdown Meeting Presentation of Preliminary Inspection Results. (l-r) Anthony Campbell, Ohio EPA; Melissa Lutz and Becky Cato, Stoller; Shannon Dettmer, ODH; Gwen Hooten, LM; Gary Weidenbach, Stoller; Tim Fischer, EPA; Larry Kelly, EMCBC, in center facing Gwen Hooten.



Figure 4. Prewalkdown Presentation and Discussion of Preliminary Inspection Results. (l-r) Shelly Vigil, LM; Bob Ransbottom, Stoller; Shannon Dettmer, ODH; Anthony Campbell, Ohio EPA; Gwen Hooten, LM.

The following sections summarize the results of the preliminary inspections and the physical walkdown on April 15, 2014. Appendix A contains the completed checklist.

8.1 Parcel D

There were no observations of noncompliance with the ICs. In particular, there was no evidence of unauthorized well installation, soil removal, or site activities inconsistent with industrial/commercial use within this parcel.

8.2 Parcel H (Formerly Release Block H)

There were no observations of noncompliance with the ICs. In particular, there was no evidence of unauthorized well installation, soil removal, or site activities inconsistent with industrial/commercial use within this parcel.

One area of Parcel H, shown in purple in Figure 7, is exempt from the soil-removal restriction. Modifications to the entry and the rerouting of Mound Road isolated this area from the original Mound property.

8.3 Parcel 3

There were no observations of noncompliance with the ICs. In particular, there was no evidence of unauthorized well installation, soil removal, or site activities inconsistent with industrial use within this parcel.

MDC demolished Guard House (GH) Building in Parcel 3 during this period. The GH was one of the original buildings on the Mound site in 1948. Before and after photos are shown in the following figures.



Figure 5. Guard House (GH) Building



Figure 6. Area of Former GH Building After Demolition

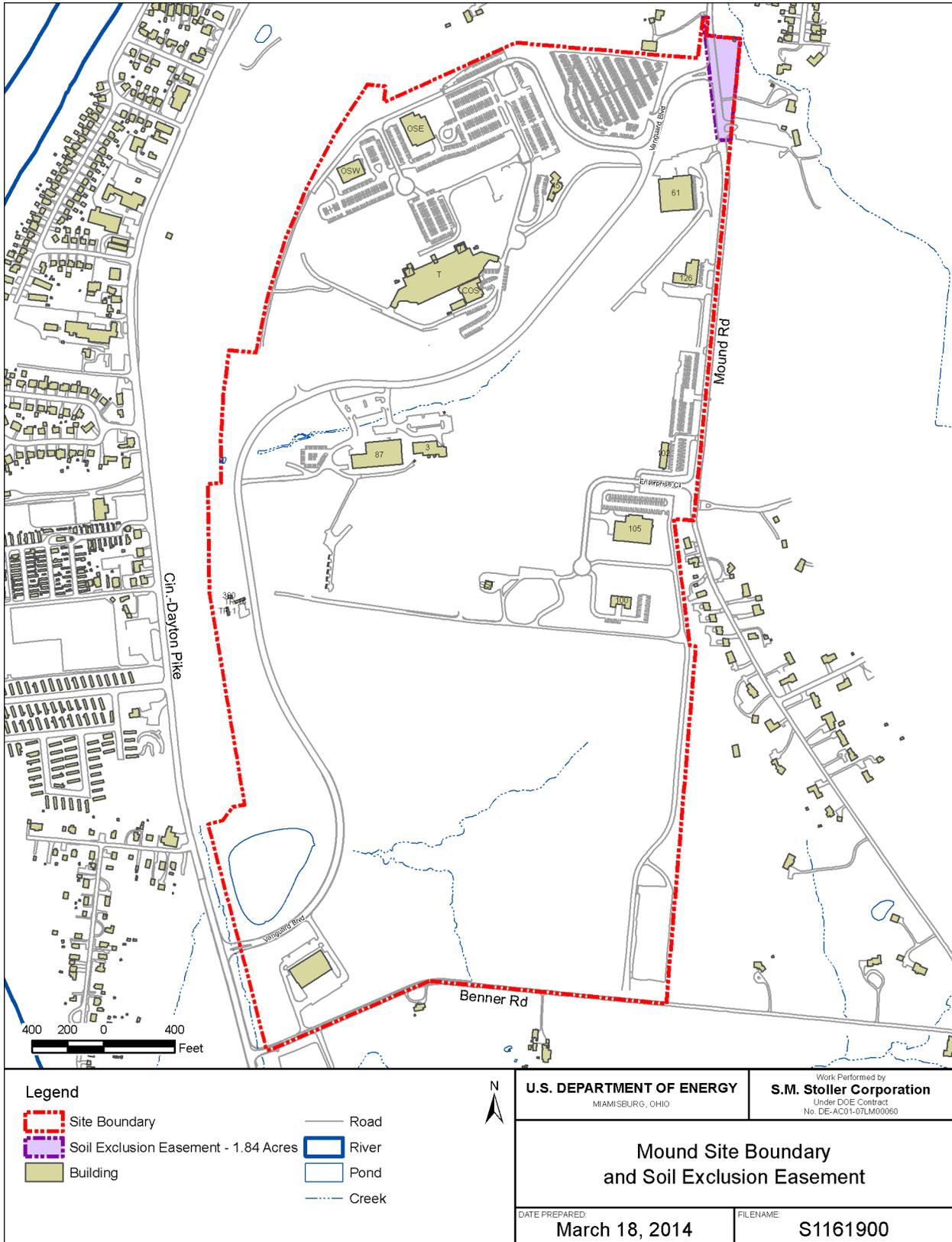


Figure 7. Parcel H Soil-Removal Exclusion Area Within the Original Mound Site Boundary

8.4 Parcel 4

There was no evidence of unauthorized well installation or soil removal within this parcel.

Two signs, which state “Recreational Use Prohibited,” were observed at the pond used for retaining and detaining storm-water runoff in the southwestern part of Parcel 4. One post remained without a sign near the bike path.

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 Mound Development Corporation 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.

8.5 Parcels 6, 7, 8, and 9

There were no observations of noncompliance with the ICs. In particular, there was no evidence of unauthorized well installation, soil removal, or site activities inconsistent with industrial/commercial use within Parcels 6, 7, 8, or 9. Changes observed since the 2013 inspection are detailed in the following sections.

8.5.1 Vanguard Boulevard Construction

Construction of the northern section of the Vanguard Boulevard (Blvd.) spine road was completed in 2013. The construction included the new roadway, storm and sanitary sewers, curbs and gutters, sidewalks, street lights, and landscaping. Figure 8 through Figure 11 show the completed construction.

EMCBC instructed LM and Stoller to continue to monitor the construction through the DOE-owned parcels. The project followed the MDC soil management plan. No soil was removed from the site.



Figure 8. Intersection of Vanguard Blvd. and Vantage Point



Figure 9. Vanguard Blvd. Looking Southwest Toward Central Office Support Building



Figure 10. Vanguard Blvd. Looking Northeast Toward Building 61



Figure 11. Vanguard Blvd. Looking Southwest Toward Excelitas

8.5.2 Erosion

The IC inspectors were told that EM had notified MDC of specific issues relating to soil erosion, drainage around wells, and well access. MDC advised that they are working with their contractor and have resolved many of the erosion problems. Figure 12 shows one remaining eroding area

observed north of Excelitas near Well 0346. Some erosion issues noted in last year's annual inspection have been addressed, as shown in Figures 12 through 15.



Figure 12. Area Around Well 0346 is Still Affected by Storm Water Runoff



Figure 13. Erosion-Control Barrier North of OU-1 West of Vanguard Blvd.



Figure 14. Erosion Controls East of Vanguard Blvd. Installed in April 2014



Figure 15. Erosion Controls in OU-1 Area Installed in April 2014

8.5.3 Building Demolition

MDC demolished Building 28 in Parcel 6 during this review period. Figures 16 and 17 show the area before and after demolition of Building 28.



Figure 16. Building 28



*Figure 17. Area After Building 28 Demolition.
The Top of Building 45 is Visible in the Center*

8.5.4 Tracts 1 and 2

There were no observations of noncompliance with the ICs. In particular, there was no evidence of unauthorized well installation, soil removal, or site activities inconsistent with industrial/commercial use within this parcel.

8.5.5 T Building

The physical inspections included only the areas within T Building to which special ICs apply (Figures 18 through 20). The special ICs prohibit the penetration of concrete in some areas covered with red concrete, and the removal of concrete in others, unless there has been prior approval.



*Figure 18. IC Walkdown in T Building.
(l-r) Frank Bullock, MDC; Anthony Campbell, Ohio EPA*

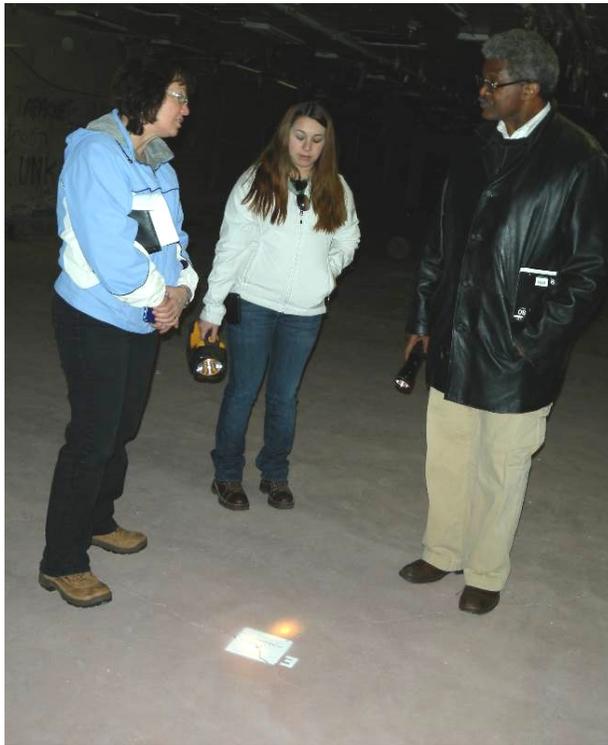


Figure 19. Gwen Hooten and Shelly Vigil, LM; and Larry Kelly, EMCBC Examine Cracks During Walkdown in T Building, April 15, 2014



Figure 20. Shannon Dettmer, ODH; Gwen Hooten, LM; Tim Fischer, EPA; and Anthony Campbell, Ohio EPA During Walkdown of T Building on April 15, 2014

8.5.5.1 Water in Special IC Area Rooms

During the 2013 IC walkdown, participants observed that water was standing in two special IC areas, rooms 57 and 58. An investigation revealed a malfunctioning sump pump, which was repaired.

During this year's assessment on March 11, LM contractors entered the area with MDC to photograph the red concrete cracks and observed standing water in rooms 57 and 58 (Figure 21).

Frank Bullock, MDC, contacted his property maintenance contractor, who found that the water was also present in several areas west of rooms 57 and 58. The contractor pumped out the water, dried the area with fans, and searched for the source. The cause was not immediately identified because the sump pump for those rooms was functioning.



Figure 21. Water on the Floor of Room 57 in T Building in March 2014

8.5.5.2 Cracks in Red Concrete

The cracks in the red concrete covering rooms 44 and 59 (survey units 1C-10 and 21) were examined and discussed during the 2014 walkdown.

Appendix C provides information regarding the T Building special IC areas. It includes a drawing clearly showing the special IC areas and the four-page agreement and position paper titled *T Building Special ICs Core Team Agreement and Position Paper, 6-29-09*, which provided policy guidelines. The appendix also includes the 2010 baseline photos of each room covered by the special ICs.

Appendix D contains the updated concrete crack photos taken in March 2014. These photos document the crack locations and current condition. The cracks do not appear to have enlarged since 2013.

At the 2013 walkdown, Ohio EPA asked what size of crack would become a concern. LM reviewed all of the associated T Building documents and presented the following summary during the prewalkdown presentation:

- 2010: First noted cracks in the checklist, but did not mention them in the report as a problem.
- 2011: Established designated monitoring points and began photo documentation.
- 2012, 2013, and 2014: Continued photo documentation.
- After the 2013 assessment, LM conducted extensive document and records reviews and interviews with individual personnel with historical knowledge of the cleanup. Copies of this research and the supporting documents will be grouped as a set for future reference.
- LM concluded that the sizes of the cracks in the red concrete are not a health and safety issue as long as the concrete remains structurally sound.
- LM recommends continued monitoring and photo documentation and is reviewing the best management practice for sealing the cracks.
- LM will discuss the research findings and any proposed repairs with the Core Team.

8.5.6 OU-1 Area

Drainage issues can interfere with access to monitoring wells or cause muddy water to puddle around well heads. A clogged drain was observed upgradient of OU-1, shown in Figure 22. This causes storm water to overflow and erode the roadway, shown in Figure 23, which is used to access monitoring wells in that area. MDC advised that their contractors are cleaning out this debris and continue to address erosion issues in the area.



Figure 22. Debris Clogging Drain Uphill East of OU-1



*Figure 23. Erosion of Roadway East of LM Trailers, Caused by Clogged Drain.
The Roadway is Used to Access Monitoring Wells*

The assessment confirmed that the wells installed during the review period have been added to the Ohio Department of Natural Resources website.

8.6 Phase I Parcel

The Phase I Parcel consists of three noncontiguous subparcels (A, B, and C), which were transferred to MDC in February 2009. The remedy for the Phase I Parcel includes ICs for the land and for monitored natural attenuation to address trichloroethene-impacted groundwater.

The IC walkdown on April 15 included a stop at the former Resource Conservation and Recovery Act (RCRA) Burn Area, as shown in Figure 24.



*Figure 24. IC Walkdown Included a Stop at RCRA Burn Area.
(l-r) Bob Ransbottom, Stoller; Anthony Campbell, Ohio EPA; Tim Fischer, EPA*

There were no observations of noncompliance with the ICs. In particular, there was no evidence of unauthorized well installation, soil removal, or site activities inconsistent with industrial/commercial use within this parcel.

9.0 Interviews and Record Reviews

9.1 Interviews with Property Owners

9.1.1 Mound Site Landowners—Institutional Control Compliance Form

LM initiated a new form, *Mound Site Landowners - Institutional Control Compliance Form*, with this annual IC assessment period. The form helps to inform property owners of the origins

and purposes of the ICs. The property owners completed a short questionnaire within the form, signed the form, and returned it to LM. A copy of the signed forms from BOI Solutions and the City of Miamisburg are included with the checklist in Appendix A.

Public information is an important component of DOE's postclosure 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 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 warning signs near the MDC pond, which state that recreational use is prohibited) are crucial to informing the public and serve to enlist public cooperation in observing the ICs.

9.1.2 City of Miamisburg

On April 11, 2014, Gwen Hooten and contractor personnel met with City of Miamisburg staff, including Chris Fine, Development Director; and JoEllen Scott, City Planner; and Ellen Stanifer, City of Miamisburg Public Works Department, to review the ICs. The discussion included the importance of the ICs and ways to maintain the institutional awareness of them within the City. Mr. Fine advised that the Mound site's redevelopment was important to the City because of its size and the economic impact.

LM also discussed the new *Mound Site Landowners - Institutional Control Compliance Form*, and Mr. Fine requested that LM send the form to the city manager to formalize the process and assure that other city officials know and understand the ICs. Mr. Keith Johnson, City Manager, completed and returned the form, which is included in Appendix A.

9.1.3 MDC

LM and their Legacy Management Support contractor maintain communication with MDC, sharing site-related activities and exchanging information at the FFA meetings and any other time it is necessary. Frank Bullock escorted the photo-taking sessions in T Building and attended the IC walkdown on April 15.

9.1.4 BOI Solutions

On April 16, 2014, Gwen Hooten and contractor personnel met with Bill Othic and Jason Terry of BOI Solutions (BOI), the company that owns Tracts 1 and 2. This was a get-acquainted meeting with these new property owners.

Discussions centered on the ICs, explaining their purpose and the legal requirements, emphasizing their importance, and reviewing the *Mound Site Landowners - Institutional Control Compliance Form*. BOI completed and returned the form, which is included in Appendix A.

9.2 Records Reviews

9.2.1 City of Miamisburg

In addition to conducting the physical inspections for the annual assessment, DOE reviewed documents from local governments to ensure that ICs are being followed. These include construction, street-opening, occupancy, or other permits; zoning modification requests; City Planning Commission requests; and well logs.

Table 3 shows the DOE building identification and the Miamisburg street addresses for each building. Six buildings (3, 87, 100, 102, 105, and the Flex Building), five magazines (80 through 84), and a salt storage shed remain in land parcels transferred to MDC. Figure 25 shows the location of all remaining site buildings.

Table 3. Building Identifications, Street Addresses, and Ownership

DOE Building ID	Former Address	Current Miamisburg Street Address	DOE ROD Parcel ID	Property Owner
45	None	930 Capstone Drive	6	EMCBC
61	None	885 Mound Road	7	EMCBC
3 and 87	None	1100 Vanguard Blvd.	IB	MDC
100	None	790 Enterprise Court	D	City
102	None	1075 Mound Road	IA	City
105	None	1195 Mound Road	D	City
126	None	955 Mound Road	(6A & 7) Tracts 1 and 2	BOI
Central Office Support (COS)	None	965 Capstone Drive	8	EMCBC
Office Support East (OSE)	480 Capstone Circle	480 Vantage Point	6	EMCBC
Office Support West (OSW)	460 Capstone Circle	460 Vantage Point	8	EMCBC
T Building	None	945 Capstone Drive	8	EMCBC
Magazines 80–84	None	None	IB	MDC
Trailers 1 and 16, and Building 300	None	1275 Vanguard Blvd.	9	EMCBC; LM
MDC Flex Building	(main building)	1390 Vanguard Blvd.	4	MDC/City
	1390 Vanguard Blvd.	1388 Vanguard Blvd. (lighting)	4	MDC/City
	1390 Vanguard Blvd.	1384 Vanguard Blvd.	4	MDC/City
	1390 Vanguard Blvd.	1380 Vanguard Blvd.	4	MDC/City
	1390 Vanguard Blvd.	1374 Vanguard Blvd.	4	MDC/City
	1390 Vanguard Blvd.	1370 Vanguard Blvd.	4	MDC/City
2	MDC demolished in 2011	None	7	n/a
28	MDC demolished in 2013	925 Capstone Drive	6	n/a
63 and 63W	MDC demolished in 2011	1070 Vanguard Blvd.	7	n/a
Guard Post-1	MDC demolished in 2006	None	3	n/a
Guard House (GH)	MDC demolished in 2013	500 Vantage Point	3	n/a

n/a = not applicable

The City of Miamisburg database allows permits to be searched by keyword (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 and Stoller personnel requested that the City of Miamisburg Engineering department query their computer tracking system for permits issued to any addresses on Capstone Drive, Vanguard Blvd., 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 4 lists all permits on file that were issued for the site from April 1, 2013, to March 31, 2014. The City of Miamisburg Building Inspection department provided the permit summary on April 2, 2014.

Table 4. City of Miamisburg Permit Files for Mound Site (April 1, 2013, to March 31, 2014)

Permit #	Permit Date	Site Address	Owner	Est. Cost	Contractor	Work Desc. 1
20130159E	9/25/2013	1100 Vanguard Blvd	MMCIC	0	Kastle EL	Electric
20130163E	10/2/2013	1390 Vanguard Blvd	MMCIC	0	Calvin Electric LLC	Electric
20130144E	8/29/2013	480 Vantage Point	MMCIC	0	Electrical Power Systems	Electric
20130016SI	5/1/2013	955 Mound Rd	BOI	0	Schumacher Dugan Construction LLC	Sign Commercial Permit
20130016SI	5/1/2013	955 Mound Rd	BOI	0	Schumacher Dugan Construction LLC	Sign Commercial Permit
20130060B	5/10/2013	1100 Vanguard Blvd	MMCIC	120,000	TBD	Alteration
20130122B	8/2/2013	925 Capstone Dr	MMCIC	135,000	Self	Demolition
20130123B	8/2/2013	500 Vantage Point	MMCIC	85,000	Self	Demolition
20130124B	8/2/2013	480 Vantage Point	MMCIC	165,000	TBD	Alteration
20130129B	8/8/2013	1390 Vanguard Blvd	MMCIC	0	Self	Occupancy
20130142B	8/28/2013	1390 Vanguard Blvd	MMCIC	125,000	TBD	Alteration
20130161B	9/30/2013	480 Vantage Point	MMCIC	3,500	Central Fire Protection	Fire Alarm System
20130176B	10/29/2013	1390 Vanguard Blvd	MMCIC	7,000	Central Fire Protection	Sprinkler/Fire
20130179H	10/16/2013	1390 Vanguard Blvd	MMCIC	31,000	Quality Mechanical Services	HVC & Gas Piping
20140010SI	2/26/2014	1390 Vanguard Blvd	MMCIC	0	Ohio Valley Painting	Sign Commercial Permit
20140011SI	9/3/2013	1100 Vanguard Blvd	MMCIC	0	Signs Now	Sign Commercial Permit

Est. = estimated
 Desc. = description
 TBD = to be determined

Table 5 lists work requests that did not require a City permit but did require review by the City Planning Commission. These requests may include excavation and paving activities.

Table 5. 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
The City Building Inspection department reported that no City Planning Commission reviews were performed during this period.						

Since City permits are filed according to address, MDC or subsequent property owners must inform DOE of changes to the street names or building addresses.

Permits filed with the City of Miamisburg do not have an expiration date. To ensure that the appropriate City officials approve permit work performed since the last annual assessment, DOE and the property owner should remain knowledgeable of permits in case work covered by that permit were to be postponed.

The work performed by MDC or other parties (e.g., contractors to MDC) on the former DOE Mound site property that Gwen Hooten (LM) and Frank Bullock (MDC) were aware of during the 12-month reporting period appeared to be adequately covered by permits submitted to, and approved by, the City of Miamisburg.

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.

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 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 onsite location, as directed by MDC.”

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 B 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 2003) 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 the property zoning within the city limits. When MDC subdivides and sells portions of the Mound site, the new property owners will be required to comply with the CRP and the City’s comprehensive plan.

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 does not have to immediately record a Miamisburg Planning Commission–approved lot-split with the County. However, MDC has to 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 ES associated with the original parcel to ensure that future property owners know the ICs.

9.2.3 Montgomery County

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

The latest lot information resulting from the transfer of MDC property to the City of Miamisburg is not yet uploaded to the Montgomery County website. The quitclaim deed and lot drawings are included in Appendix E, page 3 of the table shows the new lot numbers, and Figure 25 shows the site ownership graphically.

9.2.4 Property Agreements

9.2.4.1 Sales Agreements Between the EMCBC and MDC

In January 1998, the DOE Office of Environmental Management (EM) executed the original sales agreement with MDC. The agreement called for the transfer of discrete land parcels to MDC, via quitclaim deeds, after all requirements of CERCLA 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 2012b). Under this agreement, EMCBC allows MDC to defer acceptance of all the parcels for up to 5 years.

9.2.4.2 General Purpose Lease Between EMCBC and MDC

During the deferral of property transfer, EMCBC will lease 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 2012c), 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.

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.

9.2.4.3 Property Ownership Changes Since Last Assessment

DOE owns Parcels 6, 7, 8, and 9, and BOI owns Tracts 1 and 2.

MDC resurveyed their property in Parcels 3, 4, D, H, and Phase I into lots, transferred approximately 167 acres to the City of Miamisburg via a quitclaim deed filed on November 11, 2013, and retained approximately 13 acres as shown in Figure 25. 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.”

Copies of the quitclaim deed with the lot surveys are included in Appendix E.

10.0 Conclusions

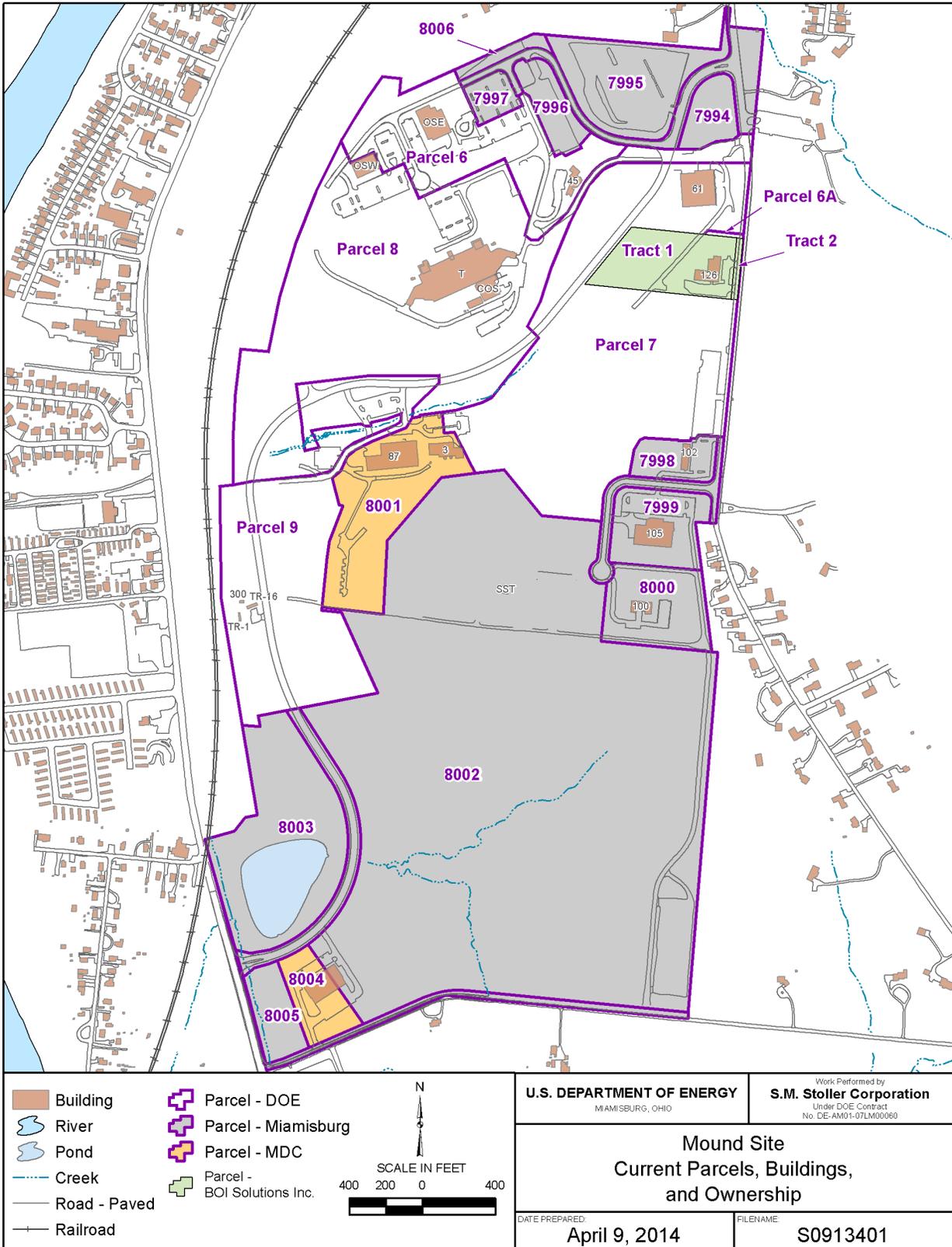
The ICs for the Mound site continue to function as designed. Adequate oversight mechanisms appear to be in place to identify possible violations of ICs, and adequate resources are available to correct or mitigate any problems if violations occur.

11.0 Recommendations

Table 6 lists outstanding recommendations from previous inspections and the status of those recommendations. Table 7 lists new recommendations from this year’s inspection.

Table 6. Outstanding Recommendations from Previous Annual or CERCLA Five-Year Review Inspections of ICs

Origin	Issue/ Recommendation	Corrected?	Current Status 2014 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	Complete. Details included in O&M Plan.
	Finalize the sitewide IC Management/Land Use Control Plan (with CERCLA Summary).	Yes	Incorporated into O&M Plan
	Finalize the sitewide O&M Plan for groundwater remedies.	Yes	Incorporated into O&M Plan
2012 Annual IC Inspection (DOE 2012a)	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 parts of this white paper into O&M and LTS&M Plans.
2013 Annual IC Inspection	Review the records regarding the purpose of the red concrete. Discuss with Core Team.	In process	Completed review. Will discuss with Core Team.
	Repeat the photographs of the cracks in the red concrete in 2014.	Yes	Complete



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Figure 25. Current Mound Site Parcels, Buildings, and Ownership

Table 7. Recommendations from 2014 Annual Inspection for ICs

Number	Issue/Recommendation	Responsible
1	Continue to address erosion issues affecting wells or access to wells.	MDC
2	Address water in T Building rooms 57 and 58.	MDC
3	Replace missing sign from pond area near bike path.	MDC
4	Develop a crosswalk list of Mound LM well numbers versus ODNR numbers.	LM

Abbreviations:

ODNR = Ohio Department of Natural Resources

12.0 Contact Information

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

Gwen Hooten
LM Mound Site Manager
U.S. Department of Energy
Office of Legacy Management
11025 Dover Street, Suite 1000
Westminster, CO 80021
(720) 880-4349
E-mail: gwen.hooten@lm.doe.gov
Alternate e-mail: mound@lm.doe.gov

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

Tim Fischer
Remedial Project Manager
U.S. Environmental Protection Agency
77 W. Jackson Boulevard
Chicago, IL 60604-3590
(312) 886-7058
E-mail: fischer.timothy@epa.gov

or

Brian Nickel
Remedial Project Manager
Ohio Environmental Protection Agency
401 E. Fifth Street
Dayton, Ohio 45402-2911
(937) 285-6468
E-mail: brian.nickel@epa.state.oh.us

13.0 References

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- DOE (U.S. Department of Energy), 1997. *MOUND 2000 Residual Risk Evaluation Methodology*, January.
- DOE (U.S. Department of Energy), 1999a. *CERCLA 120(h) Summary Notice of Hazardous Substances Release Block D, Final and Record of Decision for Release Block D*, February.
- DOE (U.S. Department of Energy), 1999b. *CERCLA 120(h) Summary Notice of Hazardous Substances, Release Block H, Mound Plant, Miamisburg, Ohio*, Final, July.
- DOE (U.S. Department of Energy), 1999c. *Record of Decision for Release Block D*, Final, February.
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DOE (U.S. Department of Energy), 2011c. *Third Five-Year Review for the Mound, Ohio, Site, Miamisburg, Ohio*, LMS/MND/S07963, U.S. Department of Energy Office of Legacy Management, September.

DOE (U.S. Department of Energy), 2012a. *Annual Assessment of the Effectiveness of Sitewide Institutional Controls Applied to the Former Mound Site Property, Miamisburg, Ohio*, LMS/MND/S08846, U.S. Department of Energy Office of Legacy Management, June.

DOE (U.S. Department of Energy), 2012b. *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)*, November.

DOE (U.S. Department of Energy), 2012c. *U.S. Department of Energy Amendment Number 24 to the General Purpose Lease*, December.

DOE (U.S. Department of Energy), 2013a. *Appendix #1 to the General Purpose Lease*, between EMCBC and MDC, December.

DOE (U.S. Department of Energy), 2013b. *Annual Assessment of the Effectiveness of Institutional Controls at the Mound Site, Miamisburg, Ohio*, LMS/MND/S10173, U.S. Department of Energy Office of Legacy Management, June.

DOE (U.S. Department of Energy), 2014a. *Community Involvement Plan for the U.S. Department of Energy Mound, Ohio, Site*, LMS/MND/S02885, Office of Legacy Management, January.

DOE (U.S. Department of Energy), 2014b. *Long-Term Surveillance and Maintenance Plan for the U.S. Department of Energy Mound, Ohio, Site*, LMS/MND/S01369, Office of Legacy Management, January.

DOE (U.S. Department of Energy), 2014c. *Operations and Maintenance Plan for the U.S. Department of Energy Mound, Ohio, Site*, LMS/MND/S08406, Office of Legacy Management, January.

EPA (U.S. Environmental Protection Agency), 2005. *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*, OSWER 9255.0-98, EPA-540-R-04-004, February, available online at http://www.epa.gov/fedfac/pdf/ic_ctzns_guide.pdf, accessed May 7, 2012.

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Appendix A

Annual Assessment Checklist for the Mound Site with Supporting Documents

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

Scope: IC Compliance for the Mound, Ohio, Site (Mound Site)

Preliminary inspections performed on: March 11, March 18, April 2, and April 7, 2014

Physical inspection walkdown with EPA, Ohio EPA, ODH, and MDC on: April 15, 2014
Walkdown and review of preliminary inspections were led by: Gwen Hooten, LM

Participants in physical inspection walkdown:

Frank Bullock, MDC; Anthony Campbell, Ohio EPA; Becky Cato; Stoller; Shannon Dettmer; ODH; Tim Fischer, EPA; Larry Kelly, EMCBC; Melissa Lutz, Stoller; Joyce Massie, JGMS subcontractor; Bob Ransbottom, Stoller; Shelly Vigil, LM; Gary Weidenbach, Stoller.

CHECKLIST WORKSHEET
Review of Effectiveness of Institutional Controls

Scope: IC Compliance for the Mound, Ohio, Site (Mound Site)

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

Origin	Issue/ Recommendation	Corrected?	Current Status 2014 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	Complete
	Finalize the sitewide IC Management/Land Use Control Plan (with CERCLA Summary).	Yes	Incorporated into O&M Plan
	Finalize the sitewide O&M Plan for groundwater remedies.	Yes	Incorporated into O&M Plan
2012 Annual IC Inspection	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 will continue to work with City.
	Complete the soil removal white paper, which will become part of the O&M Plan.	Yes	Incorporated parts into O&M and LTS&M Plans
2013 Annual IC Inspection	Review the records regarding the purpose of the red concrete. Discuss with Core Team.	In process	Completed review. Will discuss with Core Team.
	Repeat the photographs of the cracks in the red concrete in 2014.	Yes	Complete

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

Scope: IC Compliance for the Mound, Ohio, Site (Mound Site)

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

MDC work since last IC assessment:

- Completed northern section of Vanguard Blvd. roadway.
- Demolished Buildings 28 and GH.
- Made improvements to drainage in Vanguard Blvd. areas
- Transferred property to City.

List personnel interviewed during the physical walkdowns or during review of documentation.

Frank Bullock, MDC; Leslie Karacia, Development/Planning/Building Inspection, City of Miamisburg; Gwen Hooten, LM Mound Site Manager; Becky Cato, Melissa Lutz, Chuck Friedman, Roy Mowen, Steve Pawel, Gary Weidenbach, Stoller; Chris Fine, Development Director; JoEllen Scott, City Planner; Ellen Stanifer, City of Miamisburg; and Bill Othic and Jason Terry, BOI.

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

Turkey Trot on Thanksgiving Day morning—verbal concurrence at FFA Meeting. Requested use for a science day, but the event was held elsewhere.

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 ODNR well logs).

City of Miamisburg building permits; City zoning requests; ODNR well logs.

Based on the review of documents and interviews, were property improvements covered by the appropriate approvals? (For example, was construction permit approved by the City of Miamisburg?)

Yes.

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.

CHECKLIST WORKSHEET
Review of Effectiveness of Institutional Controls

Scope: IC Compliance for the Mound, Ohio, Site (Mound Site)

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

LM finalized updates, reviews, and regulatory approvals of the O&M Plan, which was in preparation during the 2013 annual IC assessment.

This IC assessment follows the process described in this plan.

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

Reviewed current Montgomery County Auditor's web pages; quitclaim deed from MDC to City with attachments showing new lot configurations; email from Frank Bullock notifying regulators of property transfer.

New Attachment #1 to General Purpose Lease between EM and MDC that formalizes requirement to comply with ICs.

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

The new lots are outlined on the existing Montgomery County webpage, but the lot information has not been updated in the parcel description area of the website as of April 8.

LM updated the O&M property table with the available information, and will attach it to the IC Report.

Frank Bullock sent an e-mail on December 17, 2013, notifying regulators and DOE LM of property transfer. This notification included a copy of the quitclaim deed and lot outlines. The quitclaim deed referred to the land use restrictions in the Environmental Covenant by stating, "THE INTEREST CONVEYED HEREBY IS SUBJECT TO AN ENVIRONMENTAL COVENANT DATED NOVEMBER 2, 2011, RECORDED IN THE DEED OR OFFICIAL RECORDS OF THE MONTGOMERY COUNTY RECORDER ON JANUARY 24, 2012 IN DEED INSTRUMENT NO. 2012-00004722. THE ENVIRONMENTAL COVENANT CONTAINS THE FOLLOWING ACTIVITY AND USE LIMITATIONS: Prohibition against residential use and farming activities; prohibition against use of groundwater; prohibition against removal of soil from Mound properly."

EM and MDC signed Attachment #1 to General Purpose Lease for Parcels 6, 7, 8, and 9 that formalized the requirement to comply with ICs.

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

Scope: IC Compliance for the Mound, Ohio, Site (Mound Site)

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)? No.
- Signage/markers in good repair (if applicable)?

Two signs remain at the pond. One near the bike path was missing from post.

- Evidence of tampering on the groundwater monitoring wells? (Well maintenance is not an IC.) No.
- Is pump-and-treat system functioning as designed and in good repair? Yes.
- T Building only—areas with additional institutional controls: Have ICs been followed? See O&M Plan, Appendix B, “T Building Special IC Areas - Core Team Agreement, Position Paper, and Floor Plan Figure.”

Water was observed on the floor of rooms 57 and 58 on April 2.

Frank Bullock is investigating, and his maintenance contractor is addressing the problem. Does not appear to be a sump pump failure, but water entering in rooms that have not had leaks in recent past.

Water was not present on April 15, but one area in room 57 was still damp.

CHECKLIST WORKSHEET
Review of Effectiveness of Institutional Controls

Scope: IC Compliance for the Mound, Ohio, Site (Mound Site)

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

See O&M Plan, Appendix C, "ICs Guidance by Core Team (Including Soil Handling Protocol) and Site Use Request Form," for guidance during review.

No evidence of IC noncompliance was noted.

Note: LM developed a short IC compliance information sheet/questionnaire for landowners to sign and return annually. Beginning this year, LM will mail or e-mail these forms to all property owners during the IC assessment each year to assure that they are aware of the land use restrictions. LM will include copies of the completed forms in the IC Assessment Reports.

Miscellaneous items noted during review or physical walkdown:

No major issues were identified.

Some erosion issues remain that do affect some wells and access to some wells.

Well 0452 needs concrete pad replaced (not an IC).

Water in T Building rooms 57 and 58.

One sign missing from pond area near bike path.

Ohio EPA also visited the former RCRA Burn Area near the old salt storage shed in Phase I parcel. There were no changes in that area since the last IC walkdown in 2013.

BOI personnel gave the LM site manager and contractors a tour of the former Building 126, which BOI purchased in 2012. The building improvements added to the appearance and functionality of the space.

Recommendations from preliminary physical inspections or records reviews:

Continue to address erosion issues affecting wells or access to wells (MDC).

Address water in T Building rooms 57 and 58 (MDC).

Replace missing sign from pond area near bike path (MDC).

Develop a crosswalk list of Mound LM well numbers versus ODNR numbers.

Mound Site Landowners - Institutional Control Compliance Form

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 for the period of May 1, 2013 through April 30, 2014, 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 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

- 5) **Prohibit the penetration of concrete floors in specified rooms of T Building** without prior 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.

Jason M Terry [Signature] 4-16-14
Printed Name Signature Date

C.O.O BOI Solutions INC
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

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 for the period of May 1, 2013 through April 30, 2014, and return to DOE LM within 30 days.

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

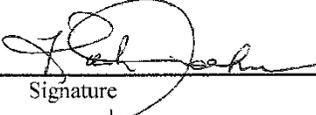
- 1) **Prohibit the removal of soil** from the original DOE Mound Plant Property boundaries, unless prior written approval from Ohio EPA and Ohio Department of Health (ODH) has been obtained.
 - 1a) Was soil removed from your property? Yes No .
 - 1b) If yes, was the soil removed from the original DOE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

- 5) **Prohibit the penetration of concrete floors in specified rooms of T Building** without prior 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  5/1/14
Printed Name Signature Date

CITY MANAGER CITY OF MIAMI BEACH
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.

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Appendix B

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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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 C

T Building Rooms with Special ICs—Core Team Guidance and 2010 Baseline Photos

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T Building Rooms with Special ICs

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

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

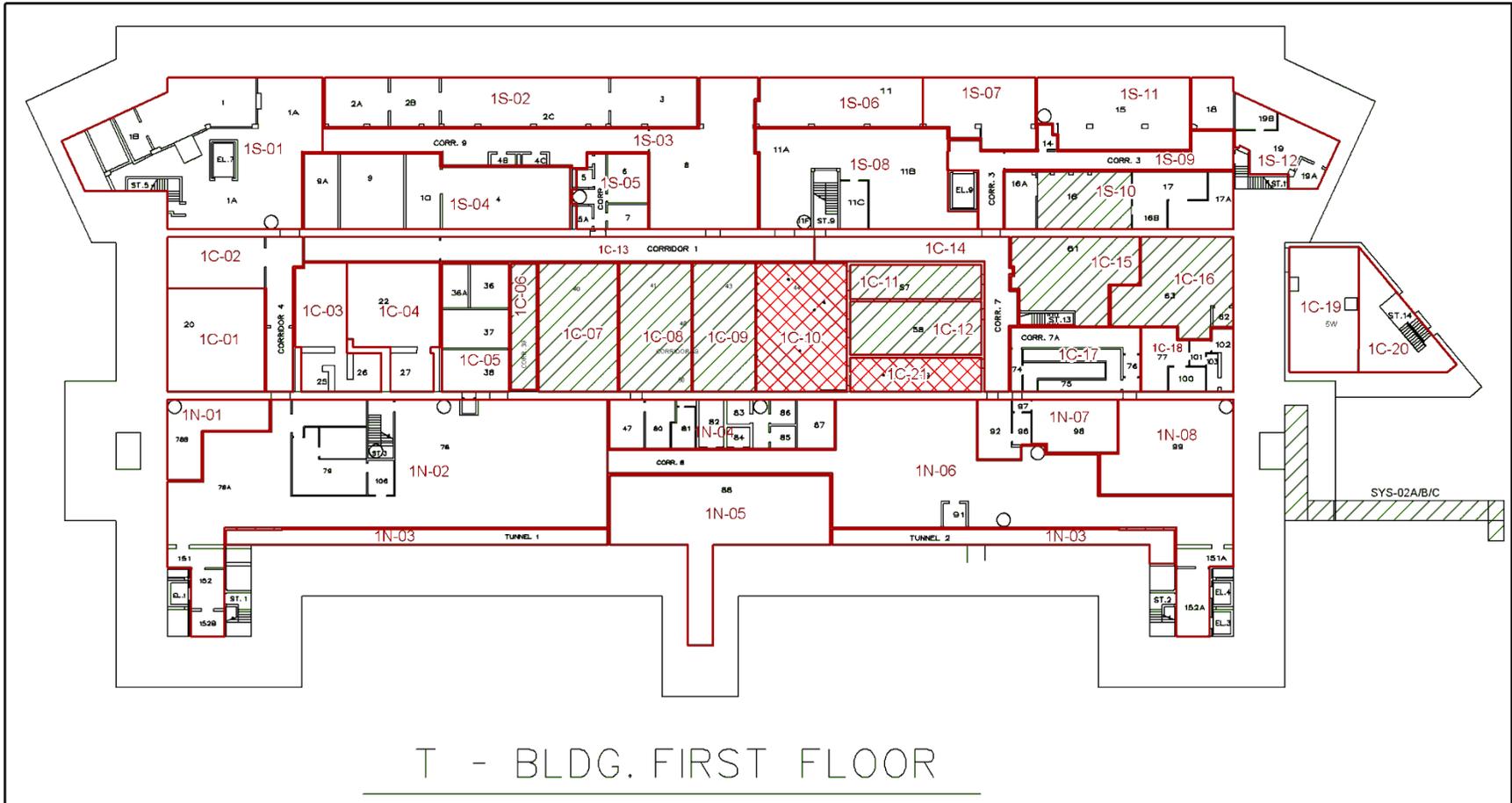
On June 29, 2009, the Mound Core Team signed an agreement for the position paper which provided policy guidelines for limited activities in these rooms which should not result in unacceptable risk to workers in the building.

The four-page agreement and position paper, T Building Special ICs Core Team Agreement and Position Paper, 6-29-09, are 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. Appendix D of this IC Assessment Report documents the condition of the cracks in the red concrete cap in room 44 (survey area 1C-10) and room 59 (survey unit IC-21).

MDC took over maintenance of T Building in December 2012 under the lease amendment #25 to the General Purpose Lease.



T - BLDG. FIRST FLOOR

Legend

- Controlled Area**
- Removal Prohibition
 - Penetration Prohibition



U.S. DEPARTMENT OF ENERGY <small>GRAND JUNCTION, COLORADO</small>	<small>Work Performed by</small> S.M. Stoller Corporation <small>Under DOE Contract No. CE-AM01-07LM00060</small>
Mound Site T Building Special IC Areas	
<small>DATE PREPARED:</small> March 19, 2014	<small>FILENAME:</small> S1162000

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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 (MMCIC) 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.

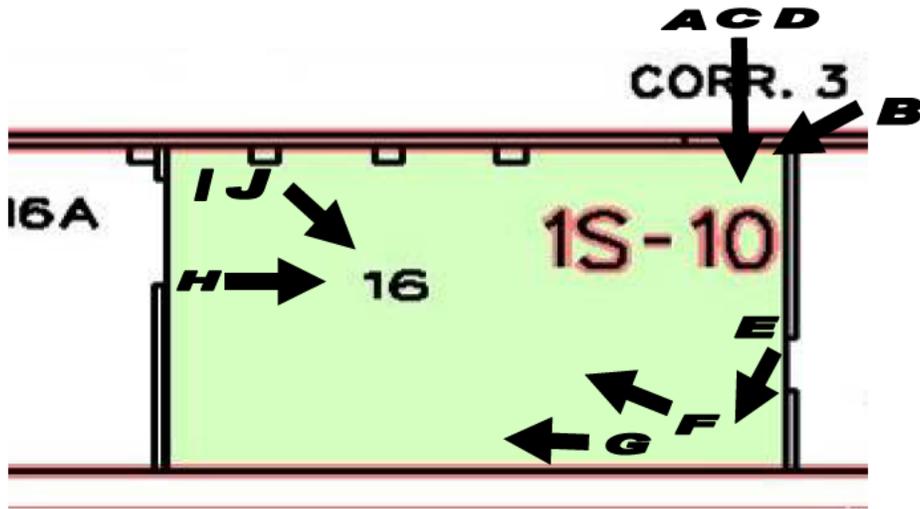


Figure C-2. T Bldg. Room 16 View A



Figure C-3. T Bldg. Room 16 View B



Figure C-4. T Bldg. Room 16 View C



Figure C-5. T Bldg. Room 16 View D



Figure C-6. T Bldg. Room 16 View E



Figure C-7. T Bldg. Room 16 View F



Figure C-8. T Bldg. Room 16 View G



Figure C-9. T Bldg. Room 16 View H



Figure C-10. T Bldg. Room 16 View I



Figure C-11. T Bldg. Room 16 View J

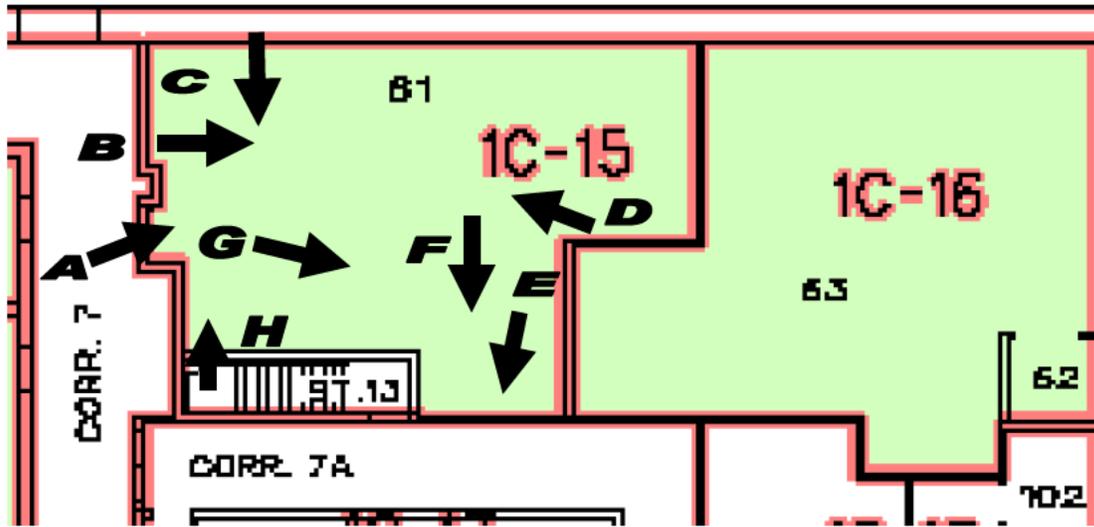


Figure C-12. T Bldg. Room 61 View A



Figure C-13. T Bldg. Room 61 View B



Figure C-14. T Bldg. Room 61 View C



Figure C-15. T Bldg. Room 61 View D



Figure C-16. T Bldg. Room 61 View E



Figure C-17. T Bldg. Room 61 View F



Figure C-18. T Bldg. Room 61 View G



Figure C-19. T Bldg. Room 61 View H

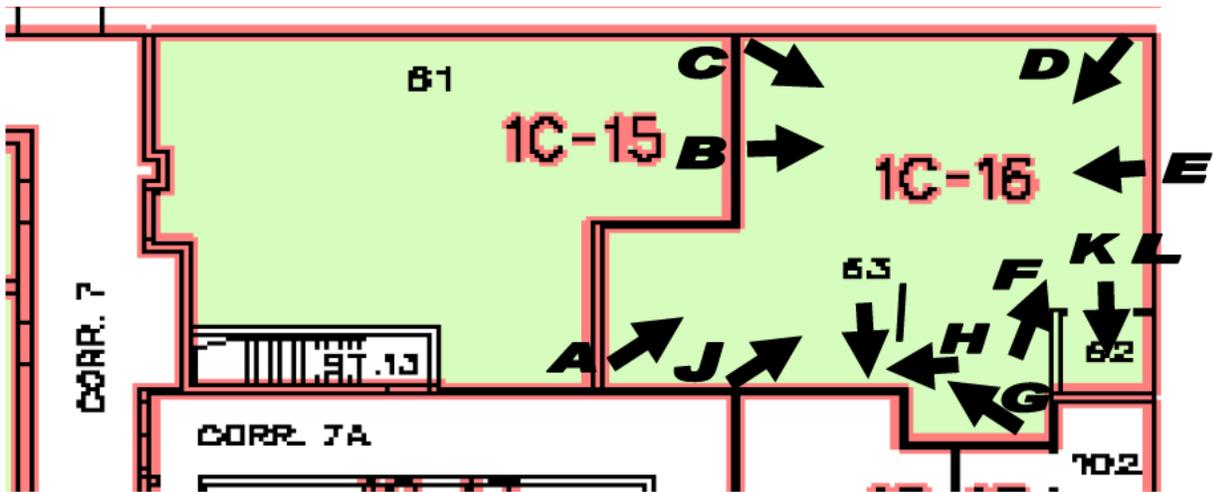


Figure C-20. T Bldg. Room 63 View A



Figure C-21. T Bldg. Room 63 View B



Figure C-22. T Bldg. Room 63 View C



Figure C-23. T Bldg. Room 63 View D



Figure C-24. T Bldg. Room 63 View E



Figure C-25. T Bldg. Room 63 View F



Figure C-26. T Bldg. Room 63 View G



Figure C-27. T Bldg. Room 63 View H



Figure C-28. T Bldg. Room 63 View I



Figure C-29. T Bldg. Room 63 View J



Figure C-30. T Bldg. Room 62 View K



Figure C-31. T Bldg. Room 62 View L

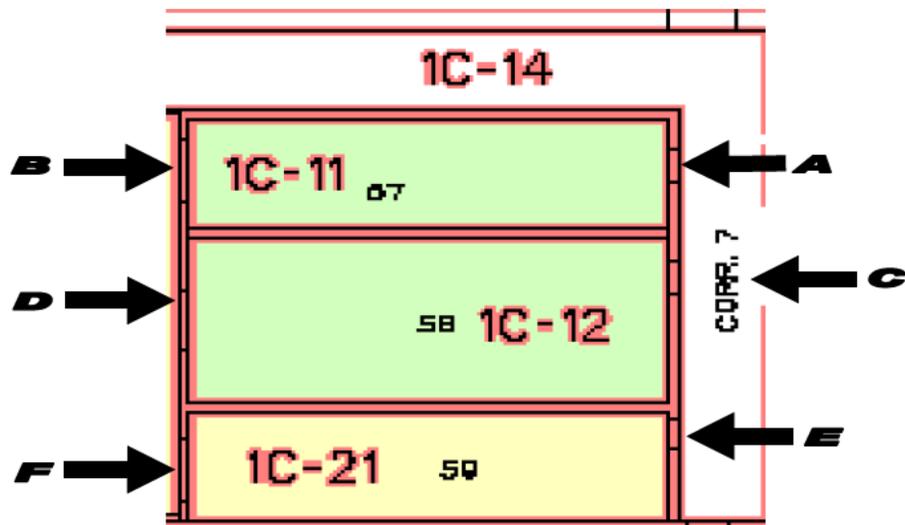


Figure C-32. T Bldg. Room 57 View A



Figure C-33. T Bldg. Room 57 View B



Figure C-34. T Bldg. Room 58 View C



Figure C-35. T Bldg. Room 58 View D



Figure C-36. T Bldg. Room 59 View E



Figure C-37. T Bldg. Room 59 View F

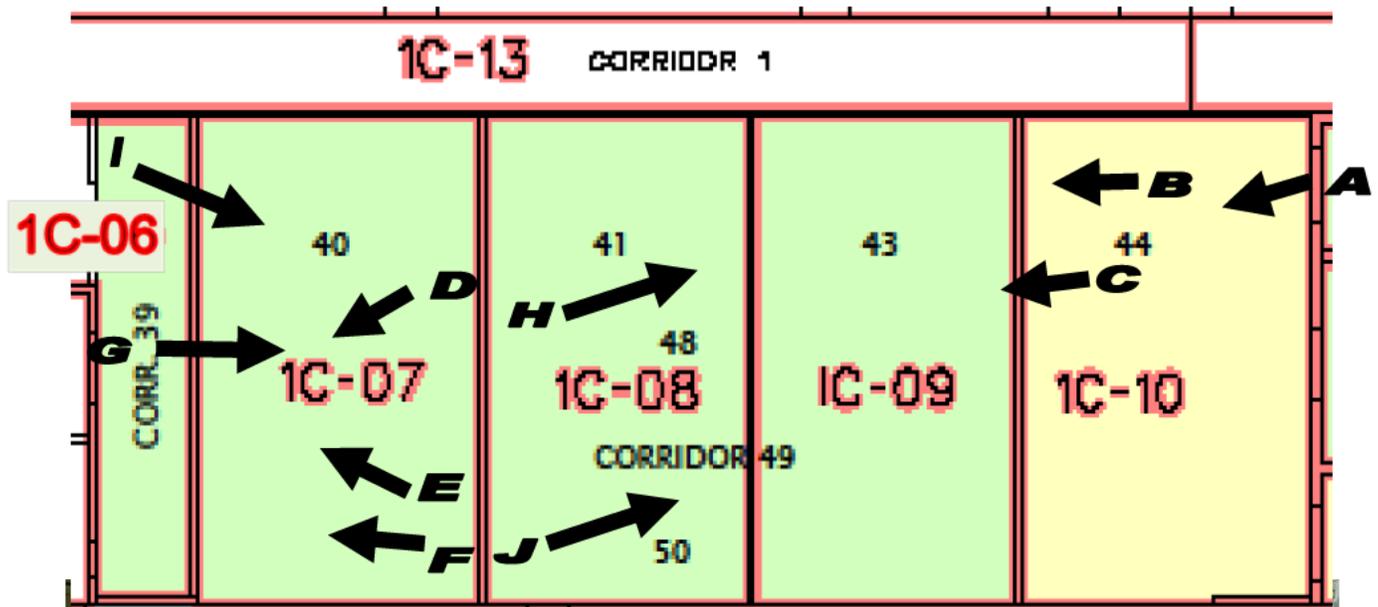


Figure C-38. T Bldg. Rooms 39–44 and 48–50 View A



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



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



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



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



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



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



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



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



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

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Appendix D

Photos of T Building Red Concrete Cracks 2014

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T Building Red Concrete Cracks Photos

The following photographs were taken for the 2014 Mound Site Annual IC Assessment to document the current condition of the cracks in the red concrete in specified rooms in T Building.

Figure D.1, “Mound Site, T Building Special IC Areas, Red Concrete Crack Mark Locations,” shows the location of the crack monitoring points labeled A through I.

Table D-1. 2014 T Building Red Concrete Area Monitoring Points



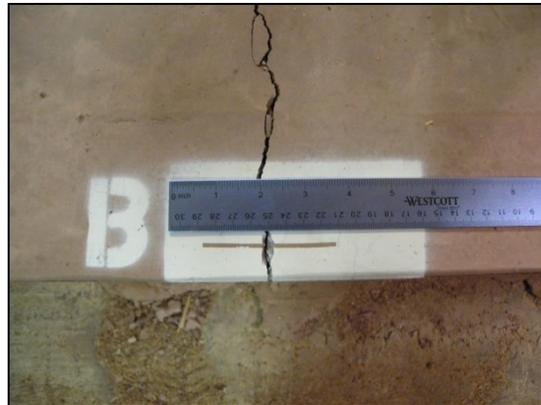
Monitoring point A



Monitoring point A



Monitoring point B



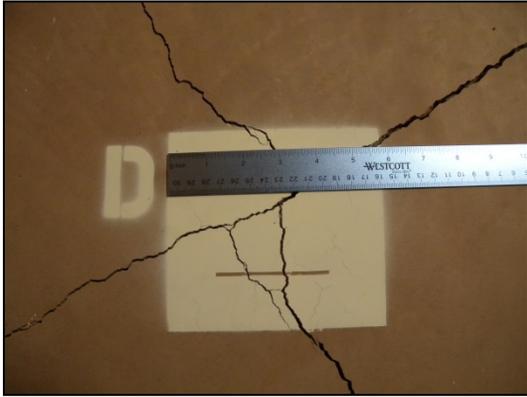
Monitoring point B



Monitoring point C



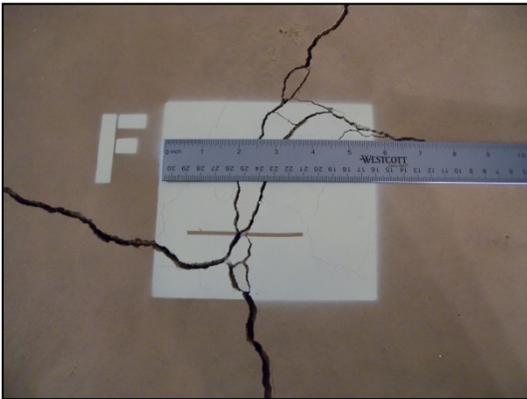
Monitoring point C



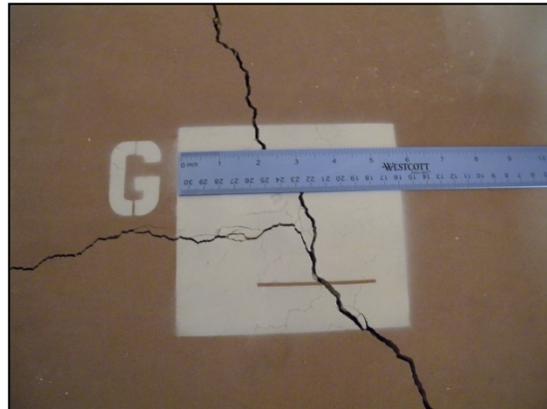
Monitoring point D



Monitoring point E



Monitoring point F



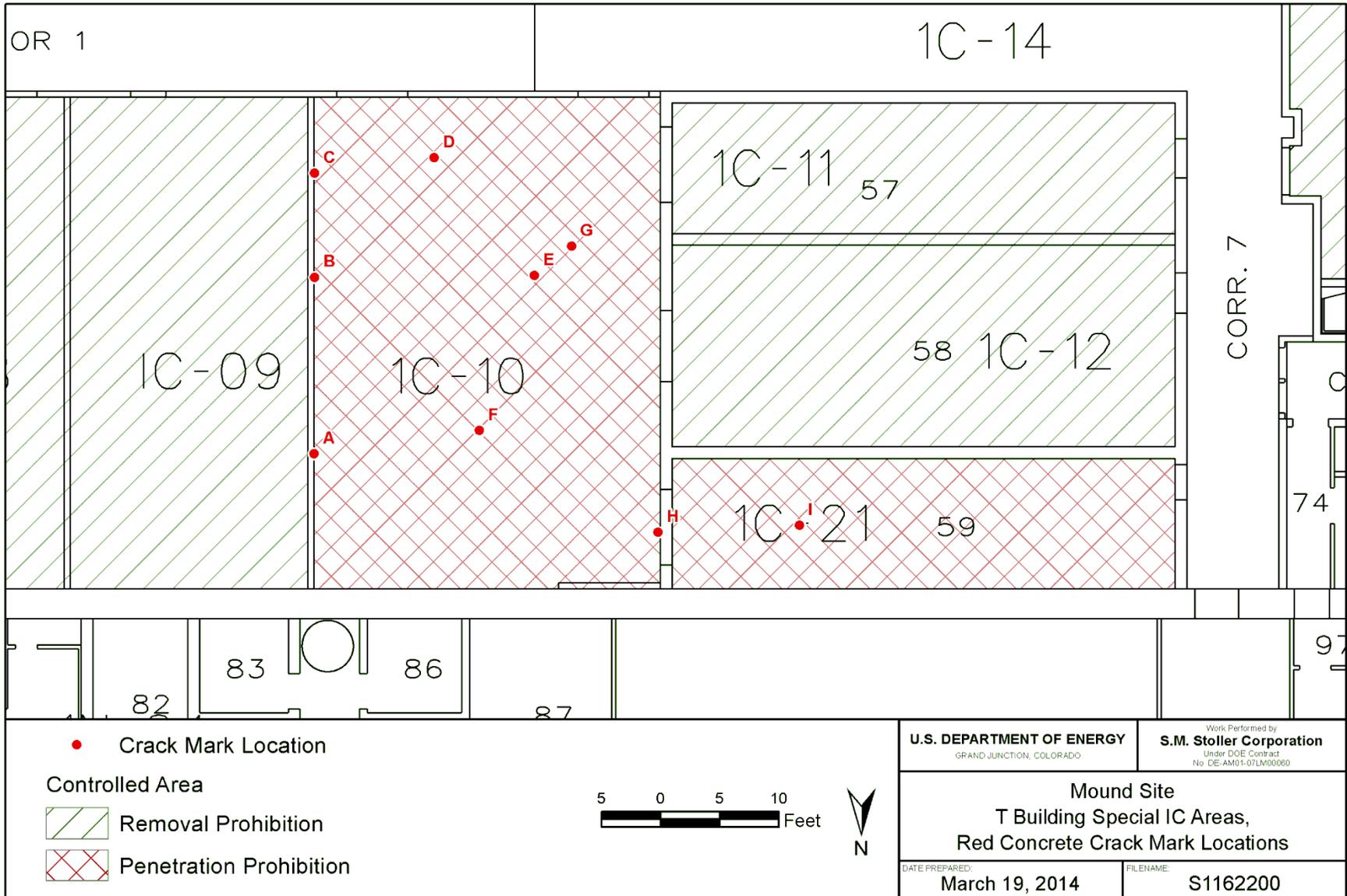
Monitoring point G



Monitoring point H



Monitoring point I



M:\LTS\1111006109\007AS1162200.mxd brownc 03/19/2014 7:56:14 AM

Figure D-1. Mound Site T Building Special IC Areas, Red Concrete Crack Mark Locations

Appendix E
Property Information

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Property Records from Montgomery County Auditor's Website

April 25, 2014

PARID	Parcel Location on Record	Legal Description	Land Use	Acres	Deed	Sale	Conveyance	Owner per Record	General Location
MDC-Owned Property.									
Original parcels as transferred. As shown on county website.									
K46 00501 0010	Mound Rd	5-2-30,36	C - Other Commercial Structures	12.3068	1999-00852 B011		1999-00852B011	Miamisburg Mound Community Improvement Corporation	Parcel H
K46 00501 0011	Mound Rd	5-2-30	C - Other Commercial Structures	12.4290	1999-00852 B005			Miamisburg Mound Community Improvement Corporation	Parcel D, part of Lot 2259
K46 00501 0012	Mound Rd	2259PT 5-1-9	C - Other Commercial Structures	1.9520	09-011643	Oct. 17, 2002	200200128206	Miamisburg Mound Community Improvement Corporation	Part of Parcel 3 pkg lot dwg
K46 00501 0013	1075 Mound Rd	2259PT 5-1-9	C - Other Commercial Structures	2.5420	09-011643	Feb, 24, 2009	200900011643	Miamisburg Mound Community Improvement Corporation	Parcel Phase 1A
K46 00503 0028	Mound Rd	2290	C - Office Building 1-2 Stories	2.8530	02-128206		2002-020488	Miamisburg Mound Community Improvement Corporation	Part of Parcel 3
K46 01109 0002	Benner Rd	4778 11-9-10	C - Commercial Vacant Land	6.5680	09-011643			Miamisburg Mound Community Improvement Corporation	Former Phase IC
K46 01109 0007	1390 Vanguard Dr	5-2-30, 5-2-36 ABATEMENT 11-9-8, 15-7-21,22	I - Industrial Warehouses Light	94.8380	2002-00128007		2002-020485	Miamisburg Mound Community Improvement Corporation	Parcel 4
K46 01109T0007	1390 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 Improvement Corporation	Record because of abatement. No acreage.

Property Records from Montgomery County Auditor's Website

April 25, 2014

PARID	Parcel Location on Record	Legal Description	Land Use	Acres	Deed	Sale	Conveyance	Owner per Record	General Location
K46 01507 0001	1100 Benner Rd	6127, 6128, 2, 5-3-29; 5-1-14; 11-9-9	I - Manufacturing & Assembly Medium	42.8820	09-011643			Miamisburg Mound Community Improvement Corporation	Phase IB
Total of original MDC-owned property; records remain on county auditor website; does not include all streets. As of April 25, 2014.				176.3708					
BOI-Owned Property									
K46 00501 0017	Not on county website 5-15-13. 955 Mound Road.	2259		5.3500	2012-00084260			BOI	Most of former 6A + parts of Parcel 7
K46 00501 0018	Info not on line now. 955 Mound Road.	2259		0.2710	2012-00084260			BOI	Part of 6A road front
Total BOI-owned property and showing on county website				5.6210					
DOE-Owned Property									
K46 00334 0021	Mound Ave	5-2-36	E - Exempt Property Owned By USA	0.7235	01214 P00012			United States of America	Small area north of Parcel 6
K46 00501 0002	Mound Rd	2259PT 5-1-9	E - Exempt Property Owned By USA	5.063	01214 P00017			United States of America	Most of Parcel 6
K46 00503 0013	Old Main St	2290PT	E - Exempt Property Owned By USA	66.1790	01258P00056			United States of America	Combo parts of Parcels 6, 8, 9
K46 01109 0001	Benner Rd	4777PT	E - Exempt Property Owned By USA	10.2040	1981-00376A001			United States of America	OU1
K46 01109 0003	S Dixie Dr	4779	E - Exempt Property Owned By USA	1.6000	01258P000074			United States of America	Road w of laydown area
K46 00501 0015		2259		0.1170			2012-00082086 DOE to MDC	United States of America	Northern slice of 6A
K46 00501 0016		2259		36.9990			2012-00082087 DOE to MDC	United States of America	Approximate Parcel 7
Total acreage DOE-owned property and showing on county website				120.8855					

Property record based on transfer of property from MDC to City in 2013. This information has not been updated on the Montgomery County Auditor's website as of May 16, 2014.

PARID	Parcel Location on Record	Legal Description	Land Use	Acres	Deed	Sale	Conveyance	Owner per Record	General Location
MDC-Owned Property after property transferred to City of Miamisburg, November 2013									
K46 01507 0032		8001		10.0802					
K46 01507 0035		8004		3.0332					
MDC-owned				13.1134					
City of Miamisburg-Owned Property after property transferred, November 2013 These lots are not on county website at this time.									
K46 01507 0025		7994		2.1941					
K46 01507 0026		7995		7.857					
K46 01507 0027		7996		2.4123					
K46 01507 0028		7997		1.3139					
K46 01507 0029		7998		2.3279					
K46 01507 0030		7999		4.8008					
K46 01507 0031		8000		5.5191					
K46 01507 0033		8002		111.2165					
K46 01507 0034		8003		14.9112					
K46 01507 0036		8005		2.7179					
K46 01507 0037		8006		0.8456					
Streets				11.5644					
City-owned				167.6807					
Total	Includes some streets			180.7941					

From: [Frank Bullock](#)
To: [Brian Nickel](#); [Tim Fischer](#); [Hooten, Gwen](#)
Cc: [Massie, Joyce \(CONTR\)](#)
Subject: Mound - Property Transfer from MDC to the City
Date: Tuesday, December 17, 2013 8:41:05 AM
Attachments: [20131217083715999.pdf](#)

Earlier this fall, MDC completed the process with County to replat the site for subdivision of the property under our ownership.

In November, certain lots were transferred to the City of Miamisburg. Attached is a copy of the Quit Claim deed as well as the subdivision maps showing the lots that were transferred.

As we get new tenants/clients, these lots will be transferred back to MDC. MDC is still responsible for all maintenance and activities on the site.

If you have any questions, don't hesitate to contact me.

Frank Bullock, PE
Mound Development Corporation
Director of Operations
(937) 865-4052
[REDACTED] (Cell)
www.Mound.com



Type: DEE
Kind: DEED
Recorded: 11/13/2013 12:53:08 PM
Fee Amt: \$44.00 Page 1 of 4
Montgomery County, OH
Willis E. Blackshear County Recorder
File# 2013-00079430

TRANSFER
12:48pm NOVEMBER 13, 2013
KARL L. KEITH, COUNTY AUDITOR
Conv/Tran #: 18650 \$.00

4

QUIT CLAIM DEED
(Ohio Statutory Form)

MOUND DEVELOPMENT CORPORATION, an Ohio not-for-profit corporation f/k/a Miamisburg Mound Community Improvement Corporation, having an address of 965 Capstone Drive, P.O. Box 232, Miamisburg, Ohio 45343-0232 ("Grantor"), for valuable consideration paid, grants to the **CITY OF MIAMISBURG, OHIO**, an Ohio municipal corporation ("Grantee"), whose tax mailing address is 10 North First Street, Miamisburg, Ohio 45342, the real property described on Exhibit A attached hereto and incorporated herein by reference (collectively referred to in this Deed as the "Lots").

mail

THE INTEREST CONVEYED HEREBY IS SUBJECT TO AN ENVIRONMENTAL COVENANT DATED NOVEMBER 2, 2011, RECORDED IN THE DEED OR OFFICIAL RECORDS OF THE MONTGOMERY COUNTY RECORDER ON JANUARY 24, 2012 IN DEED INSTRUMENT NO. 2012-00004722. THE ENVIRONMENTAL COVENANT CONTAINS THE FOLLOWING ACTIVITY AND USE LIMITATIONS:

Prohibition against residential use and farming activities; prohibition against use of groundwater; prohibition against removal of soil from Mound property.

Owner or transferee, if applicable, shall notify Ohio EPA within ten (10) days after each conveyance of 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.

DRK

THE INTEREST CONVEYED HEREBY IS ALSO SUBJECT TO COVENANTS AND RESTRICTIONS FOUND IN THE FOLLOWING DEEDS FROM THE UNITED STATES GOVERNMENT TO GRANTOR:

Deeds recorded in the Montgomery County, Ohio Recorder's Office as follows:

- Deed Recorded December 21, 1999 at Deed 99-141468
- Deed Recorded December 21, 1999 at Deed 99-141469

- Deed Recorded October 17, 2002 at Deed 02-128007
- Deed Recorded October 18, 2002 at Deed 02-128206
- Deed Recorded November 22, 2002 at Deed 02-146503
- Deed Recorded November 22, 2002 at Deed 02-146504
- Deed Recorded February 24, 2009 at Deed 09-116432
- Deed Recorded December 19, 2012 at Deed 12-083743

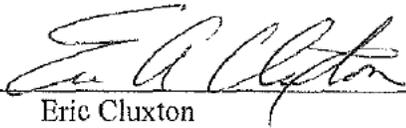
PRIOR DEED REFERENCE:

Plat Book 222, Page 30, Montgomery County, Ohio Plat Records
Mound Advanced Technology Center
Section 1,

all of the Montgomery County, Ohio Deed Records.

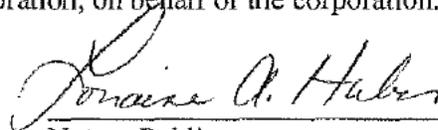
Executed this 7th day of November, 2013.

MOUND DEVELOPMENT CORPORATION

By: 
Eric Cluxton
President

STATE OF OHIO, COUNTY OF MONTGOMERY, SS:

The foregoing instrument was acknowledged before me this 7th day of November, 2013, by Eric Cluxton, the President of Mound Development Corporation, an Ohio not-for-profit corporation, on behalf of the corporation.


Notary Public

LORRAINE A. HUBER, Notary Public
In and for the State of Ohio
My Commission Expires May 22, 2016

This instrument prepared by:
Shannon L. Costello, Esq.
Coolidge Wall Co., L.P.A.
33 West First Street, Suite 600
Dayton, OH 45402

EXHIBIT A

Situate in Sections 30, 35 and 36, Town 2, Range 5 M.Rs, City of Miamisburg, Montgomery County, Ohio and being Lots Numbered 7994, 7995, 7996, 7997, 7998, 7999, 8000, 8002, 8003, 8005, and 8006 of the Mound Advanced Technology Center Record Plan, Section 1, as recorded in Plat Book 222, Page 30 of the Montgomery County, Ohio Records.

K46 01507 0025, 26, 27, 28, 29, 30, 31, 33, 34, 36, 37

222 P 30

TRANSFER
TRADE PLATS
MAY 1985
MAY 1985
MAY 1985

DESCRIPTION
THE VITON PLAT IS A SUBDIVISION OF 180,794 ACRES, BEING ALL OF
LOTS 4773, 6127, 6128, PART LOTS 2259, 2290, 4777, 4781 & 4782
OF THE CONSECUTIVE LOT NUMBERS OF THE CITY OF MARIETTA AND
SECTION 25, TOWN 1, RANGE 5 N.R. AND SECTIONS 30, 31 AND 32,
TOWN 1, RANGE 5 N.R., AND BEING ALL OF
THE LANDS CONVEYED TO MOUND COMMUNITY IMPROVEMENT CORPORATION,
A VARIOUS DEVELOPMENT CORPORATION,
AS RECORDED IN DEED 58-05642, AND PART LOTS
4771 AND 4782 AS CONVEYED TO THE CITY OF MARIETTA BY DEED
RECORDED IN DEED 12-025863 OF THE DEED RECORDS
OF MONTGOMERY COUNTY, CONTAINING 180,794 ACRES OF WHICH
158,297 ACRES ARE IN LOTS AND 12,544 ACRES IN STREETS.
APPROVAL OF THIS PLAT ALSO REPRESENTS A VACATION OF THE LARGELY
PHILIP DEBARTH PLAT AS RECORDED IN PLAT BOOK A, PAGE 125, OF THE
PLAT RECORDS OF MONTGOMERY COUNTY, OHIO,
& BEING 1,020 ACRES OF LOT 4781 AND ALSO BEING 1,302 ACRES
OF LOT 4782.

CERTIFICATION:
THE MEASUREMENTS ARE CERTIFIED CORRECT AND IRON PINS WILL BE SET
AS SHOWN. CURVE DISTANCES ARE MEASURED ON THE ARC.

Raymond E. McGraw, Esq.
RAYMOND E. MCGRAW, ESQ. DATE



DEDICATION:
WE THE UNDERSIGNED BEING ALL THE OWNERS AND LEASEHOLDERS OF THE
LAND BEING SUBMITTED DO HEREBY ACKNOWLEDGE THE MAKING AND
SIGNING OF THIS PLAT TO BE OUR VOLUNTARY ACT AND DEED, AND DO
HEREBY DEDICATE THE STREETS AND RESERVE THE EASEMENTS AS SHOWN
WITHIN THE PLAT TO THE PUBLIC USE FOREVER.

OWNER: MOUND COMMUNITY IMPROVEMENT CORPORATION
150-A MOUND DEVELOPMENT CORPORATION

Eric Clinton
WITNESS

Eric Clinton
WITNESS
ERIC CLINTON, PRESIDENT

STATE OF OHIO, COUNTY OF MONTGOMERY S.S.

BE IT REMEMBERED, THAT ON THIS 18th DAY OF April, 2013,
BEFORE ME, THE UNDERSIGNED, A NOTARY PUBLIC IN AND FOR SAID STATE,
PERSONALLY CAME ERIC CLINTON, AS PRESIDENT OF
MARIETTA MOUND COMMUNITY IMPROVEMENT CORPORATION, DBA MOUND
DEVELOPMENT CORPORATION, MAJOR AND ACKNOWLEDGED THE SIGNING AND
EXECUTION OF THE WITHIN PLAT TO BE HIS VOLUNTARY ACT AND DEED.
IN TESTIMONY WHEREOF, I HAVE HEREUNTO SET MY HAND AND NOTARIAL SEAL
ON THE DAY AND DATE WRITTEN ABOVE.

Raymond E. McGraw, Esq.
NOTARY PUBLIC
MY COMMISSION EXPIRES 7-26-15

CITY OF MARIETTA

W. McGraw
WITNESS

W. McGraw
WITNESS

STATE OF OHIO, COUNTY OF MONTGOMERY S.S.

BE IT REMEMBERED, THAT ON THIS 18th DAY OF April, 2013,
BEFORE ME, THE UNDERSIGNED, A NOTARY PUBLIC IN AND FOR SAID STATE,
PERSONALLY CAME *Paula Karaca*,
FOR THE CITY OF MARIETTA KNOWN AND ACKNOWLEDGED THE SIGNING AND
EXECUTION OF THE WITHIN PLAT TO BE HIS VOLUNTARY ACT AND DEED.

IN TESTIMONY WHEREOF, I HAVE HEREUNTO SET MY HAND AND NOTARIAL SEAL
ON THE DAY AND DATE WRITTEN ABOVE.

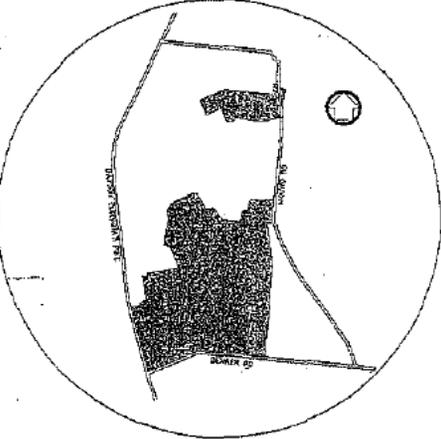
Paula Karaca
NOTARY PUBLIC
MY COMMISSION EXPIRES 7-26-15

Paula Karaca
SECRETARY
MARIETTA, OHIO

RECORD PLAN
MOUND ADVANCED
TECHNOLOGY CENTER
SECTION 1

BEING ALL OF LOTS 4778, 6127 & 6128 PART LOTS
2259, 2290, 4777, 4781, & 4782 OF THE CONSECUTIVE
LOT NUMBERS OF THE CITY OF MARIETTA
SECTION 25, TOWN 1, RANGE 5 N.R.,
SECTIONS 30, 31, & 32, TOWN 1, RANGE 5 N.R.,
MONTGOMERY COUNTY, OHIO
169,2297 ACRES IN LOTS
11,5644 ACRES IN STREETS
180,7941 ACRES TOTAL
FEBRUARY 2013

PREPARED BY:
JUDGE ENGINEERING CO.
101 S. DAVID ROAD
KETTERING, OHIO 45429
PHONE 937-264-1441 FAX 937-264-1499



APPROVAL

APPROVED AND ACCEPTED THIS 18th DAY OF April, 2013
BY THE PLANNING COMMISSION OF THE CITY OF MARIETTA, OHIO

Paula Karaca
SECRETARY
MARIETTA, OHIO

APPROVED AND ACCEPTED THIS 18th DAY OF April, 2013
BY THE COUNCIL OF THE CITY OF MARIETTA, OHIO

Paula Karaca
MAYOR
MARIETTA, OHIO

PLAT BOOK 222 PAGE: 30

OWNER'S STATEMENT:
DATE June 25, 2013

STATE OF OHIO, COUNTY OF MONTGOMERY, S.S.
ERIC CLINTON, IN HIS CAPACITY AS PRESIDENT OF MOUND
DEVELOPMENT CORPORATION BEING DULY SWORN, SAYS THAT ALL
PERSONS AND CORPORATIONS, TO THE BEST OF HIS KNOWLEDGE,
INTERESTED IN THIS DEDICATION, EITHER AS OWNERS OR LEASEHOLDERS,
HAVE UNTO DO ITS EXECUTION
Eric Clinton
OWNER

IN TESTIMONY WHEREOF, I HAVE HEREUNTO SET MY HAND AND AFFIXED
MY NOTARIAL SEAL ON THE DAY AND DATE ABOVE WRITTEN.

Eric Clinton
NOTARY PUBLIC IN AND FOR MONTGOMERY COUNTY, OHIO
MY COMMISSION EXPIRES: 7-26-15

LINES OF DEDICATION WHERE EXISTING AGREE IN GENERAL
WITH PROPERTY LINES

PERTINENT DOCUMENTS:
DEED RECORDS, PLATS AND SURVEYS AS SHOWN ON THIS PLAT

ALL INSTRUMENTATION SET, FOUND IN GOOD CONDITION UNLESS
OTHERWISE NOTED

SUPERIMPOSED AREA NOTE:

ALL OF THE LANES OF THE DEDICATIONS FROM WHICH THIS
PLAT IS DRAWN

COVENANTS AND RESTRICTIONS:

1. LOTS SHOWN ON THIS PLAT SHALL BE SUBJECT TO AND
GOVERNED BY ALL APPLICABLE ZONING REGULATIONS OF
THE CITY OF MARIETTA, OHIO

2. MOUND ADVANCED TECHNOLOGY CENTER DECLARATION OF
COVENANTS AND RESTRICTIONS DATED DECEMBER 14, 2013 AND
RECORDED AT INSTRUMENT NO. 2013-042455

3. THE PROPERTY THAT IS THE SUBJECT OF THIS PLAT WAS PREVIOUSLY
OWNED BY THE UNITED STATES GOVERNMENT. THE DEEDS TRANSFERRING
THE PROPERTY FROM THE UNITED STATES GOVERNMENT THROUGH ITS
AGENCY THE DEPARTMENT OF ENERGY, CREATED COVENANTS AND
RESTRICTIONS THAT AFFECT THE USE OF THE PROPERTY BY ALL FUTURE
OWNERS, TENANTS, EMPLOYEES AND VISITORS. THESE COVENANTS AND
RESTRICTIONS CAN BE VIEWED IN THE DEEDS WHICH ARE RECORDED IN
THE MONTGOMERY COUNTY, OHIO RECORDS OFFICE. THESE DEEDS ARE
RECORDED AT THE FOLLOWING LOCATIONS AND ON THE FOLLOWING DATES:

- DEED RECORDED DECEMBER 21, 1998 AT DEED 56-141462
- DEED RECORDED DECEMBER 21, 1998 AT DEED 99-141469
- DEED RECORDED OCTOBER 17, 2002 AT DEED 02-121007
- DEED RECORDED OCTOBER 18, 2002 AT DEED 02-122005
- DEED RECORDED NOVEMBER 22, 2002 AT DEED 02-114803
- DEED RECORDED NOVEMBER 22, 2002 AT DEED 02-114804
- DEED RECORDED FEBRUARY 24, 2009 AT DEED 09-118432
- DEED RECORDED DECEMBER 19, 2012 AT DEED 12-083743

THE RESPECTIVE COVENANTS AND RESTRICTIONS SET FORTH IN THESE DEEDS
RUN WITH THE RESPECTIVE LANDS TRANSFERRED THEREIN AND BIND ALL
HEIRS, SUCCESSORS AND ASSIGNS.

SHEET 2 OF 5

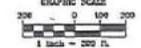
APPROVED FOR DESCRIPTION
MONTGOMERY COUNTY ENGINEER
W. McGraw
JER 401
CHECKED BY
Paula Karaca
DATE

RECORD PLAN
MOUND ADVANCED
TECHNOLOGY CENTER
SECTION 1

BEING ALL OF LOTS 4776, 4727 & 6124, PART LOTS
2259, 2290, 4777, 4781 & 4782 OF THE CONSECUTIVE
LOT NUMBERS OF THE CITY OF MANSBURG
SECTION 25, TOWN 1, RANGE 5 N.M.R.
SECTIONS 30, 35, & 36, TOWN 2, RANGE 5 N.M.R.
MONTGOMERY COUNTY, OHIO
160.2297 ACRES IN LOTS
11.5644 ACRES IN STREETS
180.7941 ACRES TOTAL
FEBRUARY 2005

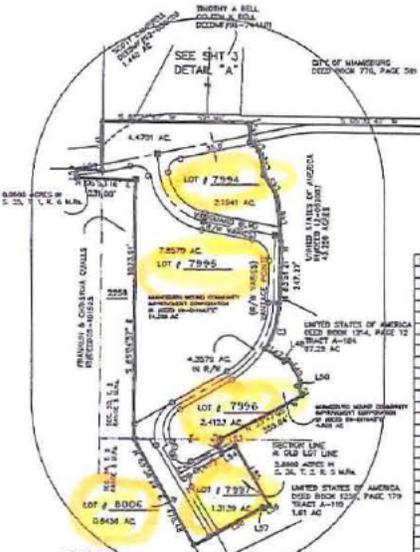
Map 851
New Plat
Number 222P30A of 10/26/04
Date of Plat 02/02/05 Page 1 of 3
Recorder's Office, 20
Montgomery County, Ohio
File # 2005020016

BEARINGS BASED ON THE CENTERLINE
OF BENNER RD. PER PLATTED 09-0114-12
N 54°29'45" W



- 5/8" IRON PIN FOUND
- 5/8" IRON PIN SET
- MONUMENT FOUND

R/W DEDICATION



LINE TABLE

LINE	BEARING	DIST
L1	N 14°20'04" W	65.32
L2	N 74°29'04" E	170.32
L3	N 37°22'23" E	98.82
L4	N 80°25'45" E	55.00
L5	S 84°29'31" W	100.54
L6	N 02°20'25" W	60.47
L7	N 63°58'45" W	105.56
L8	N 09°45'33" E	84.84
L9	N 21°00'14" E	208.77
L10	N 75°37'35" W	22.86
L11	N 14°12'40" W	152.25
L12	N 02°22'31" E	58.44
L13	N 25°13'50" E	85.97
L14	N 50°27'41" E	58.71
L15	N 63°24'44" E	108.77
L16	N 07°29'53" E	195.56
L17	N 32°10'07" E	65.19
L18	N 80°03'20" E	45.02
L19	N 01°01'42" W	18.56
L20	N 82°36'15" W	130.00
L21	S 05°28'44" E	114.21
L22	N 84°29'09" E	56.50
L23	S 27°23'29" E	170.98
L24	S 26°28'49" E	82.29
L25	N 60°42'58" E	100.63
L26	S 84°29'09" W	36.50
L27	N 06°24'00" E	131.33
L28	N 17°28'11" E	144.58
L29	N 26°43'38" E	82.93
L30	N 80°33'41" E	26.88
L31	N 85°29'03" E	16.15
L32	S 85°09'21" E	168.77
L33	S 01°34'54" E	4.89
L34	N 88°31'18" E	6.84
L35	N 86°00'00" E	10.15
L36	S 81°00'00" W	31.11
L37	S 65°20'05" W	124.16
L38	N 80°26'23" W	111.01
L39	S 83°58'18" W	27.08
L40	S 73°10'03" W	106.52
L41	S 84°30'08" W	193.41
L42	S 89°26'18" W	171.68
L43	S 91°20'00" W	48.01
L44	S 83°30'59" W	72.28
L45	S 65°47'11" W	81.67
L46	N 80°26'23" W	123.00
L47	N 64°32'08" E	58.17
L48	S 45°10'50" W	91.47
L49	S 33°05'31" E	17.73
L50	S 44°44'21" E	186.90
L51	N 50°08'58" W	22.74
L52	N 66°03'24" W	39.97
L53	N 82°41'15" W	37.02
L54	S 85°00'19" W	34.64
L55	S 24°34'45" E	59.55
L56	S 63°17'32" W	258.33
L57	N 24°28'30" W	24.24
L58	N 60°33'10" W	7.27
L59	N 24°28'30" W	302.52
L60	S 84°26'45" E	30.00
L61	S 85°33'16" W	100.20
L62	S 89°50'16" W	45.78
L63	S 83°58'18" W	27.08
L64	S 81°26'20" W	5.55
L65	S 91°26'20" W	36.98
L66	N 89°57'40" W	100.89
L67	N 80°57'40" W	52.58
L68	S 65°00'35" W	3.15
L69	N 24°41'00" W	127.35
L70	N 64°32'08" E	58.17
L71	S 24°20'35" W	5.30
L72	N 64°32'08" E	58.17
L73	N 24°26'20" W	189.89
L74	S 84°30'08" W	193.41
L75	S 89°26'18" W	171.68
L76	S 91°20'00" W	48.01
L77	N 83°30'59" W	72.28
L78	N 80°26'23" W	123.00
L79	S 84°30'08" W	193.41
L80	S 89°26'18" W	171.68
L81	S 91°20'00" W	48.01
L82	N 83°30'59" W	72.28
L83	N 80°26'23" W	123.00
L84	N 24°28'30" W	24.24
L85	S 84°26'45" E	30.00
L86	S 85°33'16" W	100.20

LINE TABLE

LINE	BEARING	DIST
L62	S 89°50'16" W	45.78
L63	S 83°58'18" W	27.08
L64	S 81°26'20" W	5.55
L65	S 91°26'20" W	36.98
L66	N 89°57'40" W	100.89
L67	N 80°57'40" W	52.58
L68	S 65°00'35" W	3.15
L69	N 24°41'00" W	127.35
L70	N 64°32'08" E	58.17
L71	S 24°20'35" W	5.30
L72	N 64°32'08" E	58.17
L73	N 24°26'20" W	189.89
L74	S 84°30'08" W	193.41
L75	S 89°26'18" W	171.68
L76	S 91°20'00" W	48.01
L77	N 83°30'59" W	72.28
L78	N 80°26'23" W	123.00
L79	S 84°30'08" W	193.41
L80	S 89°26'18" W	171.68
L81	S 91°20'00" W	48.01
L82	N 83°30'59" W	72.28
L83	N 80°26'23" W	123.00
L84	N 24°28'30" W	24.24
L85	S 84°26'45" E	30.00
L86	S 85°33'16" W	100.20

LINE TABLE

LINE	BEARING	DIST
L87	S 153°47' W	280.71
L88	N 83°01'21" W	265.12
L89	N 75°24'47" W	234.65
L90	N 75°42'51" W	32.21
L91	N 64°17'20" W	356.41
L92	S 24°41'00" W	127.35
L93	N 84°32'08" E	58.17
L94	S 84°30'08" W	193.41
L95	S 89°26'18" W	171.68
L96	S 91°20'00" W	48.01
L97	N 83°30'59" W	72.28
L98	N 80°26'23" W	123.00
L99	S 84°30'08" W	193.41
L100	S 89°26'18" W	171.68
L101	S 91°20'00" W	48.01
L102	N 83°30'59" W	72.28
L103	N 80°26'23" W	123.00
L104	N 24°28'30" W	24.24
L105	S 84°26'45" E	30.00
L106	S 85°33'16" W	100.20

LINE TABLE

LINE	BEARING	DIST
L101	N 05°24'52" W	11.20
L102	N 22°26'21" W	56.71
L103	S 78°50'53" W	102.40
L104	S 16°26'20" W	492.60
L105	N 14°22'30" E	78.58
L106	S 49°20'04" W	83.89
L107	S 74°22'29" W	154.81
L108	N 02°14'05" E	139.64
L109	N 32°26'30" W	140.97
L110	S 14°22'29" W	363.84
L111	S 23°19'02" W	45.81
L112	N 51°20'15" E	1.60
L113	N 30°24'41" W	11.48
L114	S 88°28'27" W	172.72

CHIEF TABLE

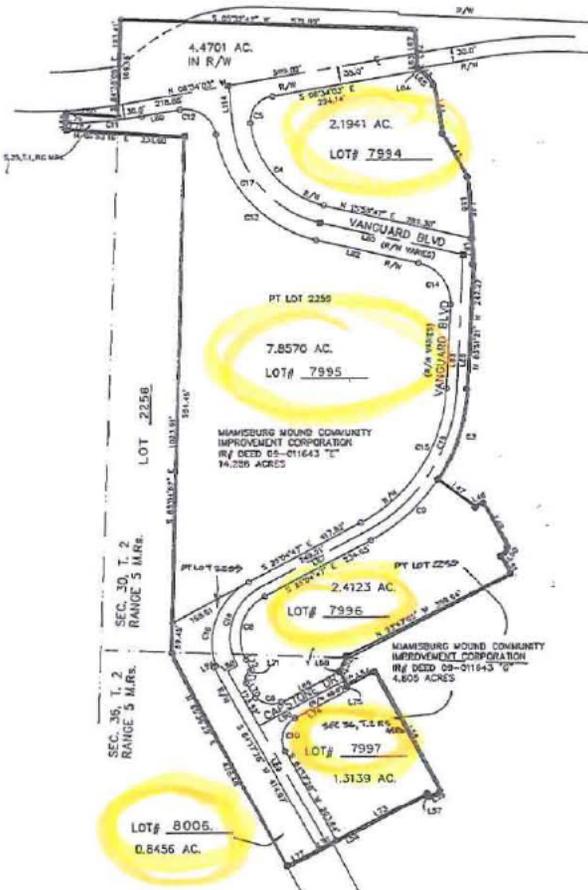
POINT	RANGE	DISTANCE	BEARING	POINT	BEARING	
C1	126.00	362.21	89°20'30"	C1	N 50°14'23" W	182.77
C2	38.80	32.75	89°18'10"	C2	N 50°20'28" E	30.79
C3	288.00	250.42	204°18'00"	C3	N 80°43'51" E	186.27
C4	181.77	232.99	76°28'00"	C4	N 21°09'29" E	218.89
C5	25.90	30.81	89°16'00"	C5	N 50°14'23" W	182.77
C6	17.80	25.72	89°16'00"	C6	N 50°14'23" W	182.77
C7	16.50	21.51	89°16'00"	C7	S 78°09'42" E	23.81
C8	97.28	148.24	30°14'00"	C8	N 13°11'00" E	131.00
C9	348.17	178.27	257°22'24"	C9	S 22°22'03" E	177.22
C10	47.10	75.44	89°16'00"	C10	N 50°14'23" W	182.77
C11	212.27	147.17	89°16'00"	C11	N 50°14'23" W	182.77
C12	60.50	78.50	89°16'00"	C12	S 25°24'29" E	60.77
C13	145.67	221.60	89°16'00"	C13	N 50°14'23" W	182.77
C14	83.00	111.40	89°16'00"	C14	S 36°24'33" E	100.80
C15	236.67	208.46	89°16'00"	C15	S 24°20'28" E	214.72
C16	126.72	133.82	89°16'00"	C16	N 80°26'23" W	123.00
C17	274.77	274.77	270°00'00"	C17	S 24°20'28" E	214.72
C18	348.17	178.27	257°22'24"	C18	S 22°22'03" E	177.22
C19	113.23	113.23	89°16'00"	C19	N 50°14'23" W	182.77
C20	40.00	82.00	89°16'00"	C20	S 20°45'42" E	34.89
C21	40.00	82.00	89°16'00"	C21	S 20°45'42" E	34.89
C22	100.00	100.00	89°16'00"	C22	S 20°45'42" E	34.89
C23	100.00	100.00	89°16'00"	C23	S 20°45'42" E	34.89
C24	100.00	100.00	89°16'00"	C24	S 20°45'42" E	34.89
C25	100.00	100.00	89°16'00"	C25	S 20°45'42" E	34.89
C26	100.00	100.00	89°16'00"	C26	S 20°45'42" E	34.89
C27	100.00	100.00	89°16'00"	C27	S 20°45'42" E	34.89
C28	100.00	100.00	89°16'00"	C28	S 20°45'42" E	34.89
C29	100.00	100.00	89°16'00"	C29	S 20°45'42" E	34.89
C30	100.00	100.00	89°16'00"	C30	S 20°45'42" E	34.89
C31	100.00	100.00	89°16'00"	C31	S 20°45'42" E	34.89
C32	100.00	100.00	89°16'00"	C32	S 20°45'42" E	34.89
C33	100.00	100.00	89°16'00"	C33	S 20°45'42" E	34.89
C34	100.00	100.00	89°16'00"	C34	S 20°45'42" E	34.89
C35	100.00	100.00	89°16'00"	C35	S 20°45'42" E	34.89
C36	100.00	100.00	89°16'00"	C36	S 20°45'42" E	34.89
C37	100.00	100.00	89°16'00"	C37	S 20°45'42" E	34.89
C38	100.00	100.00	89°16'00"	C38	S 20°45'42" E	34.89
C39	100.00	100.00	89°16'00"	C39	S 20°45'42" E	34.89
C40	100.00	100.00	89°16'00"	C40	S 20°45'42" E	34.89

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BEARINGS BASED ON THE CENTERLINE
OF BONNER RD. PER RECORD 09-01643
N 84°25'45" W

DETAIL "A"

1"=100'



PLAT BOOK 222 PAGE: 30B

RECORD PLAN
MOUND ADVANCED
TECHNOLOGY CENTER
SECTION 1

BOND ALL OF LOTS 4778, 6127, 8028, PART LOTS
2259, 2290, 4777, 4781 & 4782 OF THE CONSECUTIVE
LOT NUMBERS OF THE CITY OF MANSBURG
SECTION 30, 35, T. 2, R. 1, RANGE 5 M.R.S.
SECTIONS 30, 35, & 36, TOWN 2, RANGE 5 M.R.S.
MONTGOMERY COUNTY, OHIO
159.2297 ACRES IN LOTS
11.5644 ACRES IN STREETS
180.7941 ACRES TOTAL
FEBRUARY 2013

LINE TABLE

LINE	BEARING	DIST
L01	N 142°31'14" W	42.81
L02	N 74°26'41" E	170.32
L03	N 27°22'23" E	86.50
L04	N 20°25'40" E	86.89
L05	S 84°25'01" E	100.51
L06	N 02°20'26" W	60.47
L07	N 83°20'45" W	102.50
L08	N 08°45'00" E	84.42
L09	N 21°00'14" E	208.77
L10	N 75°27'35" W	22.88
L11	N 14°54'44" E	130.21
L12	N 50°25'32" E	58.44
L13	N 23°33'30" E	68.97
L14	N 20°27'41" E	58.71
L15	N 13°24'44" E	180.77
L16	N 87°00'55" E	193.36
L17	N 21°07'07" E	40.19
L18	N 80°53'20" E	48.22
L19	N 01°41'45" W	10.38
L20	N 82°36'15" W	120.53
L21	S 05°28'44" E	114.21
L22	N 84°30'00" E	26.86
L23	S 27°23'24" E	170.96
L24	S 20°20'49" E	84.75
L25	N 82°42'58" E	158.63
L26	S 64°20'02" E	35.50
L27	N 85°34'05" E	131.43
L28	N 10°20'31" E	144.89
L29	N 29°43'26" E	63.93
L30	N 89°33'41" E	26.80
L31	N 80°25'03" E	16.15
L32	S 85°30'24" E	168.72
L33	S 01°34'34" E	4.60
L34	N 88°51'10" E	68.48
L35	N 06°00'00" E	18.15
L36	S 85°06'10" E	31.61
L37	S 85°30'00" W	124.16
L38	N 05°28'23" W	111.01
L39	S 83°30'30" E	34.07
L40	S 72°18'03" W	106.32
L41	S 84°30'00" E	183.81
L42	S 86°28'18" W	22.81
L43	S 31°20'20" W	46.31
L44	S 83°30'22" W	37.29
L45	S 83°49'11" W	66.03
L46	N 02°27'40" W	172.02
L47	S 49°10'30" W	91.47
L48	S 23°03'11" W	17.74
L49	S 64°44'27" W	38.24
L50	N 50°08'30" W	22.74
L51	S 65°03'40" W	30.97
L52	N 26°11'15" W	30.00
L53	S 65°05'10" W	34.84
L54	S 24°27'45" E	89.50
L55	S 02°11'30" W	208.39
L56	N 24°27'30" W	24.31
L57	S 62°32'30" W	7.87
L58	N 24°00'00" W	208.53
L59	S 64°30'30" E	30.00
L60	S 05°37'16" W	100.00

LINE TABLE

LINE	BEARING	DIST
L61	S 89°38'18" W	65.78
L62	S 89°26'18" W	27.06
L63	S 31°20'20" W	9.50
L64	S 31°20'20" W	36.81
L65	N 89°27'40" W	120.80
L66	N 89°27'40" W	22.36
L67	S 82°02'15" W	2.15
L68	N 24°41'00" W	122.50
L69	N 24°41'00" W	19.77
L70	N 24°41'00" W	183.81
L71	S 24°41'00" E	5.30
L72	N 64°27'30" E	23.45
L73	N 24°26'30" W	180.80
L74	S 74°41'00" E	170.29
L75	N 65°08'15" E	7.51
L76	N 24°26'30" W	40.01
L77	N 24°26'30" W	62.58
L78	S 84°20'30" E	11.79
L79	S 84°20'30" E	18.20
L80	S 68°24'00" E	75.67
L81	S 15°50'47" W	193.18
L82	N 83°31'20" W	160.77
L83	N 20°42'30" W	5.00

LINE TABLE

LINE	BEARING	DIST
L84	S 05°28'44" W	11.50
L85	N 15°50'47" W	260.71
L86	N 83°51'20" W	204.12
L87	N 25°04'47" W	234.65
L88	N 28°42'37" W	50.21
L89	S 84°27'28" E	300.41
L90	S 24°41'00" E	158.50
L91	N 82°28'23" W	35.29
L92	N 80°20'23" W	75.72
L93	S 05°34'11" W	117.87
L94	S 85°30'00" E	85.07
L95	S 80°30'00" E	35.00
L96	S 05°24'11" W	291.02
L97	N 72°02'30" E	79.66
L98	S 49°20'04" W	62.89
L99	N 74°22'22" W	154.81
L100	N 60°14'00" W	180.87
L101	N 10°28'30" W	140.87
L102	N 14°40'50" W	351.94
L103	N 74°16'00" W	95.81
L104	N 12°14'30" W	12.67
L105	N 12°14'30" W	11.48
L106	N 88°10'27" W	75.71

222P 30B

DETAIL "B"

1"=100'



CURVE TABLE

CURVE	BEARING	DISTANCE	DELTA	CHORD
C01	S 30° 00'	284.71	87°28'28"	N 50°14'24" E 160.77
C02	S 60° 00'	70.78	60°00'00"	N 30°00'00" E 35.39
C03	S 60° 00'	190.32	30°00'00"	N 60°00'00" W 100.32
C04	S 60° 00'	232.36	20°00'00"	N 21°00'00" E 216.80
C05	S 60° 00'	74.00	30°00'00"	N 30°00'00" W 37.00
C06	S 60° 00'	27.76	60°00'00"	N 15°48'18" E 26.87
C07	S 60° 00'	112.19	2°00'00"	S 59°00'00" E 112.19
C08	S 60° 00'	140.32	60°00'00"	S 22°22'30" E 130.18
C09	S 60° 00'	178.50	20°00'00"	S 38°28'24" E 177.78
C10	S 60° 00'	75.49	30°00'00"	N 6°03'04" E 67.74
C11	S 60° 00'	147.87	0°00'00"	S 60°00'00" E 147.87
C12	S 60° 00'	92.39	60°00'00"	S 30°00'00" E 50.19
C13	S 60° 00'	307.00	60°00'00"	S 45°00'00" W 202.42
C14	S 60° 00'	111.81	60°00'00"	S 30°00'00" W 100.00
C15	S 60° 00'	288.94	20°00'00"	N 14°02'00" E 274.76
C16	S 60° 00'	193.63	60°00'00"	N 15°30'20" W 177.80
C17	S 60° 00'	284.30	27°00'00"	S 32°31'00" E 280.44
C18	S 60° 00'	648.49	55°00'00"	N 54°28'24" W 334.33
C19	S 60° 00'	178.20	31°00'00"	N 28°01'18" W 160.90
C20	S 60° 00'	63.59	60°00'00"	S 20°00'00" E 36.29
C21	S 60° 00'	82.37	60°00'00"	S 30°14'18" W 46.27
C22	S 60° 00'	109.62	60°00'00"	S 30°00'00" E 60.00
C23	S 60° 00'	178.40	11°00'00"	S 59°09'15" W 168.80
C24	S 60° 00'	33.94	30°00'00"	N 31°00'00" E 29.14
C25	S 60° 00'	240.88	20°00'00"	N 14°02'00" E 230.25
C26	S 60° 00'	123.67	10°00'00"	S 20°00'00" W 100.72
C27	S 60° 00'	105.12	60°00'00"	N 18°45'30" E 94.12
C28	S 60° 00'	272.38	25°00'00"	N 31°00'00" E 257.31
C29	S 60° 00'	202.09	60°00'00"	N 27°00'00" E 202.09
C30	S 60° 00'	202.09	60°00'00"	N 27°00'00" E 202.09
C31	S 60° 00'	202.09	60°00'00"	N 27°00'00" E 202.09
C32	S 60° 00'	202.09	60°00'00"	N 27°00'00" E 202.09
C33	S 60° 00'	202.09	60°00'00"	N 27°00'00" E 202.09
C34	S 60° 00'	202.09	60°00'00"	N 27°00'00" E 202.09
C35	S 60° 00'	202.09	60°00'00"	N 27°00'00" E 202.09
C36	S 60° 00'	202.09	60°00'00"	N 27°00'00" E 202.09
C37	S 60° 00'	202.09	60°00'00"	N 27°00'00" E 202.09
C38	S 60° 00'	202.09	60°00'00"	N 27°00'00" E 202.09
C39	S 60° 00'	202.09	60°00'00"	N 27°00'00" E 202.09
C40	S 60° 00'	202.09	60°00'00"	N 27°00'00" E 202.09

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SHEET 3 OF 5

TRIMPERMENTS
 1388 N. 20th St
 45226
 SAE, L. BETH
 1388 N. 20th St
 45226

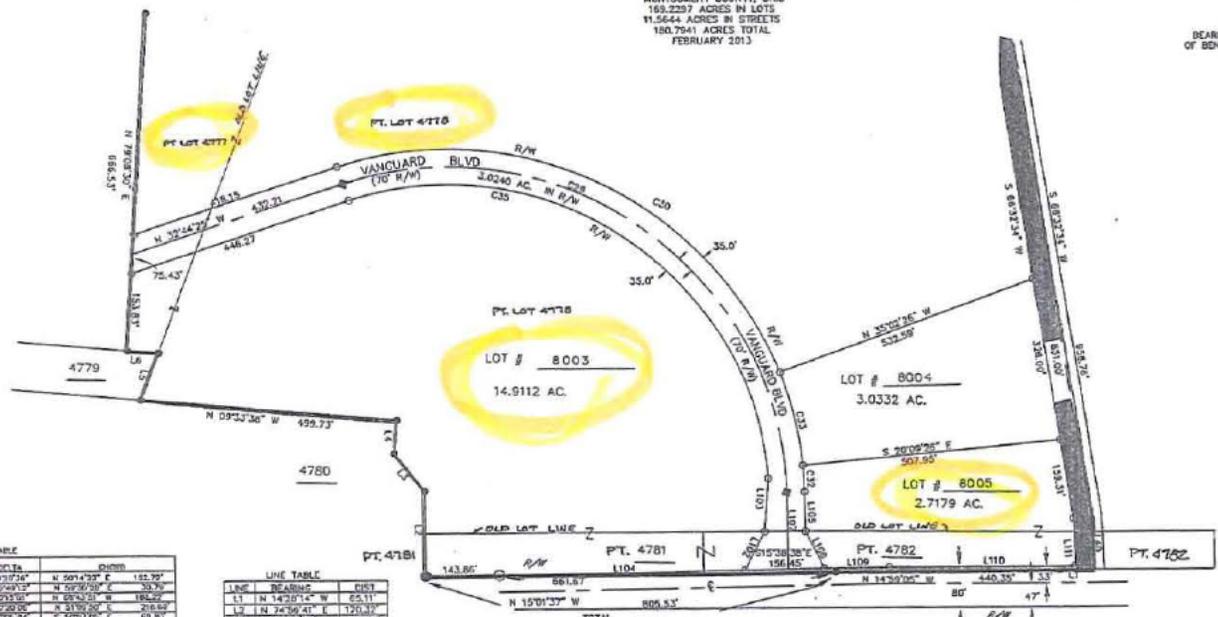
RECORD PLAN
MOUND ADVANCED TECHNOLOGY CENTER SECTION 1

BEGING ALL OF LOTS 4776, 6127 & 6128, PART LOTS 2259, 2260, 4777, 4781 & 4782 OF THE CONSECUTIVE LOT UNDEVELOPED OF THE CITY OF MANSFIELD SECTION 25, TOWN 1, RANGE 6 N.R.S. SECTIONS 30, 35, & 36, TOWN 2, RANGE 5 N.R.S. MONTGOMERY COUNTY, OHIO 169.2237 ACRES IN LOTS 11.5644 ACRES IN STREETS 100.7591 ACRES TOTAL FEBRUARY 2013

222P30C

1 inch = 100 feet
 100 0 50 100
 1 inch = 100 ft

BEARINGS BASED ON THE CENTERLINE OF DENVER RD. PER PLAT BOOK 09-01443 N 84°29'45" W



CURVE TABLE

LINE	BEARING	CHORD
L1	N 142°01'4" W	65.11
L2	N 74°30'41" E	170.37
L3	N 27°29'23" E	36.52
L4	N 80°55'40" E	65.38
L5	S 24°25'01" E	100.51
L6	N 09°25'25" W	58.47
L7	N 23°08'45" W	109.56
L8	N 08°45'53" E	94.84
L9	N 21°50'14" E	206.77
L10	N 70°24'55" W	77.80
L11	N 14°15'45" W	152.56
L12	N 50°23'32" E	58.44
L13	N 20°15'00" E	68.48
L14	N 80°20'20" W	111.61
L15	S 63°29'20" E	38.03
L16	S 73°18'03" W	106.12
L17	S 51°26'28" E	194.41
L18	S 80°52'29" E	45.02
L19	N 01°21'45" W	10.38
L20	N 82°50'15" W	120.55
L21	S 09°28'54" E	114.51
L22	N 84°30'00" E	56.85
L23	S 27°02'24" E	170.56
L24	S 26°51'53" E	89.91
L25	N 82°42'58" E	156.83
L26	S 84°20'10" E	38.50
L27	N 05°44'53" E	111.93
L28	N 10°10'51" E	144.48
L29	N 29°43'36" E	82.83
L30	N 82°35'41" E	28.82
L31	N 85°28'03" E	16.15
L32	S 02°54'24" E	168.72
L33	S 01°54'54" E	4.60
L34	N 82°01'18" E	68.48
L35	N 08°08'00" E	15.15
L36	S 83°06'10" W	31.80
L37	N 80°33'00" W	174.36
L38	N 80°20'20" W	111.61
L39	S 63°29'20" E	38.03
L40	S 09°33'18" W	100.00
L41	S 89°18'18" W	45.78
L42	N 89°22'54" W	120.86
L43	S 51°26'28" E	194.41
L44	S 80°52'29" E	45.02
L45	S 54°36'28" E	194.41
L46	S 80°52'29" E	45.02
L47	S 51°26'28" E	194.41
L48	S 80°52'29" E	45.02
L49	S 54°36'28" E	194.41
L50	S 80°52'29" E	45.02
L51	S 51°26'28" E	194.41
L52	S 80°52'29" E	45.02
L53	S 54°36'28" E	194.41
L54	S 80°52'29" E	45.02
L55	S 51°26'28" E	194.41
L56	S 80°52'29" E	45.02
L57	S 54°36'28" E	194.41
L58	S 80°52'29" E	45.02
L59	S 51°26'28" E	194.41
L60	S 80°52'29" E	45.02
L61	S 54°36'28" E	194.41
L62	S 80°52'29" E	45.02
L63	S 51°26'28" E	194.41
L64	S 80°52'29" E	45.02
L65	S 54°36'28" E	194.41
L66	S 80°52'29" E	45.02
L67	S 51°26'28" E	194.41
L68	S 80°52'29" E	45.02
L69	S 54°36'28" E	194.41
L70	S 80°52'29" E	45.02
L71	S 51°26'28" E	194.41
L72	S 80°52'29" E	45.02
L73	S 54°36'28" E	194.41
L74	S 80°52'29" E	45.02
L75	S 51°26'28" E	194.41
L76	S 80°52'29" E	45.02
L77	S 54°36'28" E	194.41
L78	S 80°52'29" E	45.02
L79	S 51°26'28" E	194.41
L80	S 80°52'29" E	45.02
L81	S 54°36'28" E	194.41
L82	S 80°52'29" E	45.02
L83	S 51°26'28" E	194.41
L84	S 80°52'29" E	45.02
L85	S 54°36'28" E	194.41
L86	S 80°52'29" E	45.02
L87	S 51°26'28" E	194.41
L88	S 80°52'29" E	45.02
L89	S 54°36'28" E	194.41
L90	S 80°52'29" E	45.02
L91	S 51°26'28" E	194.41
L92	S 80°52'29" E	45.02
L93	S 54°36'28" E	194.41
L94	S 80°52'29" E	45.02
L95	S 51°26'28" E	194.41
L96	S 80°52'29" E	45.02
L97	S 54°36'28" E	194.41
L98	S 80°52'29" E	45.02
L99	S 51°26'28" E	194.41
L100	S 80°52'29" E	45.02

LINE TABLE

LINE	BEARING	CHORD
L1	N 142°01'4" W	65.11
L2	N 74°30'41" E	170.37
L3	N 27°29'23" E	36.52
L4	N 80°55'40" E	65.38
L5	S 24°25'01" E	100.51
L6	N 09°25'25" W	58.47
L7	N 23°08'45" W	109.56
L8	N 08°45'53" E	94.84
L9	N 21°50'14" E	206.77
L10	N 70°24'55" W	77.80
L11	N 14°15'45" W	152.56
L12	N 50°23'32" E	58.44
L13	N 20°15'00" E	68.48
L14	N 80°20'20" W	111.61
L15	S 63°29'20" E	38.03
L16	S 73°18'03" W	106.12
L17	S 51°26'28" E	194.41
L18	S 80°52'29" E	45.02
L19	N 01°21'45" W	10.38
L20	N 82°50'15" W	120.55
L21	S 09°28'54" E	114.51
L22	N 84°30'00" E	56.85
L23	S 27°02'24" E	170.56
L24	S 26°51'53" E	89.91
L25	N 82°42'58" E	156.83
L26	S 84°20'10" E	38.50
L27	N 05°44'53" E	111.93
L28	N 10°10'51" E	144.48
L29	N 29°43'36" E	82.83
L30	N 82°35'41" E	28.82

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Appendix F

Aerial Photo with ROD Parcel Boundaries March 2011

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Figure F-1. Mound Site March 2011 Aerial Photo Showing ROD Parcel Boundaries

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