Appendix B

Site Inspection Checklist

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Site Inspection Checklist

I. SITE INFORMATION	
Site name: Mound Plant Site	**Date of inspection:** April 12, 2011
Location and Region: Miamisburg, OH (Region 5)	**EPA ID:** OH6890008984
Agency, office, or company leading the Five-Year Review: US Department of Energy	**Weather/temperature:** Partly Cloudy – 50's

Remedy Includes: (Check all that apply)

- □ Landfill cover/containment
- □ Access controls
- X Institutional controls
- □ Groundwater pump and treatment
- □ Surface water collection and treatment
- □ Other_____
- □ Monitored natural attenuation
- □ Groundwater containment
- □ Vertical barrier walls

Attachments: x Inspection team roster attached x Site map attached

II. INTERVIEWS (Check all that apply)

1. **O&M site manager** Robert Ransbottom (Name) Mound Site Lead (Title) July 12, 2011 (Date)
   Interviewed X at site □ at office □ by phone Phone no. _____
   Problems, suggestions; X Report attached _____
   Interview covers all remedies at the Mound Site

2. **O&M staff** Roy Mowen (Name) Mound Site H&S Lead (Title) July 12, 2011 (Date)
   Interviewed X at site □ at office □ by phone Phone no. _____
   Problems, suggestions; X Report attached _____
   Interview covers all remedies at the Mound Site

3. **Local regulatory authorities and response agencies** (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply.

Agency – City of Miamisburg – Engineering Department
Contact - Leslie Karacia _____ April 2011 937-847-6531
Name Title Date Phone no.
Problems; suggestions; □ Report attached _____
Provided information regarding permits obtained for reuse at Mound Site

Agency - City of Miamisburg – Engineering Department
Contact – Jayne A Hansel _____ April 2011 937-847-6531
Name Title Date Phone no.
Problems; suggestions; □ Report attached _____
Provided information regarding permits obtained for reuse at Mound Site

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; □ Report attached _____
_____

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; □ Report attached _____
_____

4. **Other interviews** (optional) □ Report attached.

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)

1. **O&M Documents**

[x] O&M manual	[x] Readily available	[x] Up to date	□ N/A
□ As-built drawings	□ Readily available	□ Up to date	[x] N/A
□ Maintenance logs	[x] Readily available	□ Up to date	□ N/A

Remarks: Annual reports prepared outlining IC performance

2. **Site-Specific Health and Safety Plan** □ Readily available □ Up to date [x] N/A
□ Contingency plan/emergency response plan □ Readily available □ Up to date [x] N/A
Remarks_____
_____

3. **O&M and OSHA Training Records** □ Readily available □ Up to date [x] N/A
Remarks_____
_____

4.	**Permits and Service Agreements**			
	□ Air discharge permit	□ Readily available	□ Up to date	x N/A
	□ Effluent discharge	□ Readily available	□ Up to date	x N/A
	□ Waste disposal, POTW	□ Readily available	□ Up to date	x N/A
	□ Other permits_____	□ Readily available	□ Up to date	x N/A
	Remarks_____			
5.	**Gas Generation Records**	□ Readily available	□ Up to date	x N/A
	Remarks_____			
6.	**Settlement Monument Records**	□ Readily available	□ Up to date	x N/A
	Remarks_____			
7.	**Groundwater Monitoring Records**	□ Readily available	□ Up to date	x N/A
	Remarks_____			
8.	**Leachate Extraction Records**	□ Readily available	□ Up to date	x N/A
	Remarks_____			
9.	**Discharge Compliance Records**			
	G Air	□ Readily available	□ Up to date	x N/A
	G Water (effluent)	□ Readily available	□ Up to date	x N/A
	Remarks_____			
10.	**Daily Access/Security Logs**	□ Readily available	□ Up to date	x N/A
	Remarks_____			

IV. O&M COSTS

1. **O&M Organization**
   □ State in-house □ Contractor for State
   □ PRP in-house □ Contractor for PRP
   □ Federal Facility in-house [x] Contractor for Federal Facility
   □ Other_____

2. **O&M Cost Records**
   □ Readily available □ Up to date
   □ Funding mechanism/agreement in place
   Original O&M cost estimate_____ □ Breakdown attached

   Costs associated with each remedy are not tracked separately. The costs below are for GW monitoring, sample analysis, data management, reporting, inspections, and OU-1 P&T.

   Total annual cost by year for review period if available

   From__1/2006__ To__12/2006 _ ___$ 563,529_____ □ Breakdown attached
   Date Date Total cost
   From__1/2007__ To__12/2007__ __$ 1,148,190 _____ □ Breakdown attached
   Date Date Total cost
   From__1/2008__ To__12/2008__ __$ 1,180,741_____ □ Breakdown attached
   Date Date Total cost
   From__1/2009__ To__12/2009__ ___$ 708,363_____ □ Breakdown attached
   Date Date Total cost
   From__1-2010__ To__12/2010__ ___$ 566,411_____ □ Breakdown attached
   Date Date Total cost

3. **Unanticipated or Unusually High O&M Costs During Review Period**
   Describe costs and reasons: _____

V. ACCESS AND INSTITUTIONAL CONTROLS [x] Applicable □ N/A

A. Fencing

1. **Fencing damaged** □ Location shown on site map □ Gates secured [x] N/A
   Remarks_____

B. Other Access Restrictions

1. **Signs and other security measures** □ Location shown on site map [x] N/A
   Remarks_____

C. Institutional Controls (ICs)

1. **Implementation and enforcement**

Site conditions imply ICs not properly implemented □ Yes [x] No □ N/A
Site conditions imply ICs not being fully enforced □ Yes [x] No □ N/A

Type of monitoring (*e.g.*, self-reporting, drive by) Self-reporting and walk-over surveys
Frequency Annual
Responsible party/agency US. Department of Energy
Contact Art Kleinrath (Name) Project Manager (Title) 2010 (Date) (970) 248-6034 (Phone no.)

Reporting is up-to-date [x] Yes □ No □ N/A
Reports are verified by the lead agency [x] Yes □ No □ N/A

Specific requirements in deed or decision documents have been met [x] Yes □ No □ N/A
Violations have been reported [x] Yes □ No □ N/A
Other problems or suggestions: □ Report attached

2. **Adequacy** [x] ICs are adequate □ ICs are inadequate □ N/A

Remarks Review of annual reports and results from Five-Year inspection indicates that ICs are functioning as intended

D. General

1. **Vandalism/trespassing** □ Location shown on site map [x] No vandalism evident

Remarks

2. **Land use changes on site** [x] N/A

Remarks

3. **Land use changes off site** [x] N/A

Remarks

VI. GENERAL SITE CONDITIONS

A. Roads □ Applicable [x] N/A

1. **Roads damaged** □ Location shown on site map □ Roads adequate □ N/A

Remarks

B. Other Site Conditions

Remarks _____

VII. LANDFILL COVERS □ Applicable [x] N/A

~~**A. Landfill Surface**~~

~~1. **Settlement** (Low spots) □ Location shown on site map □ Settlement not evident~~
~~Areal extent_____ Depth_____~~
~~Remarks_____~~

~~2. **Cracks** □ Location shown on site map □ Cracking not evident~~
~~Lengths_____ Widths_____ Depths_____~~
~~Remarks_____~~

~~3. **Erosion** □ Location shown on site map □ Erosion not evident~~
~~Areal extent_____ Depth_____~~
~~Remarks_____~~

~~4. **Holes** □ Location shown on site map □ Holes not evident~~
~~Areal extent_____ Depth_____~~
~~Remarks_____~~

~~5. **Vegetative Cover** □ Grass □ Cover properly established □ No signs of stress~~
~~G Trees/Shrubs (indicate size and locations on a diagram)~~
~~Remarks_____~~

~~6. **Alternative Cover (armored rock, concrete, etc.)** □ N/A~~
~~Remarks_____~~

~~7. **Bulges** □ Location shown on site map □ Bulges not evident~~
~~Areal extent_____ Height_____~~
~~Remarks_____~~

~~8. **Wet Areas/Water Damage** □ Wet areas/water damage not evident~~
~~□ Wet areas □ Location shown on site map Areal extent_____~~
~~□ Ponding □ Location shown on site map Areal extent_____~~
~~□ Seeps □ Location shown on site map Areal extent_____~~
~~□ Soft subgrade □ Location shown on site map Areal extent_____~~
~~Remarks_____~~

~~9.~~	~~**Slope Instability** ☐ Slides ☐ Location shown on site map ☐ No evidence of slope instability~~ ~~Areal extent_____~~ ~~Remarks_____~~
~~**B. Benches** ☐ Applicable ☐ N/A~~ ~~(Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)~~	
~~1.~~	~~**Flows Bypass Bench** ☐ Location shown on site map ☐ N/A or okay~~ ~~Remarks_____~~
~~2.~~	~~**Bench Breached** ☐ Location shown on site map ☐ N/A or okay~~ ~~Remarks_____~~
~~3.~~	~~**Bench Overtopped** ☐ Location shown on site map ☐ N/A or okay~~ ~~Remarks_____~~
~~**C. Letdown Channels** ☐ Applicable ☐ N/A~~ ~~(Channel lined with erosion control mats, riprap, grout bags, or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)~~	
~~1.~~	~~**Settlement** ☐ Location shown on site map ☐ No evidence of settlement~~ ~~Areal extent_____ Depth_____~~ ~~Remarks_____~~
~~2.~~	~~**Material Degradation** ☐ Location shown on site map ☐ No evidence of degradation~~ ~~Material type_____ Areal extent_____~~ ~~Remarks_____~~
~~3.~~	~~**Erosion** ☐ Location shown on site map ☐ No evidence of erosion~~ ~~Areal extent_____ Depth_____~~ ~~Remarks_____~~

4. **Undercutting** ☐ Location shown on site map ☐ No evidence of undercutting
Areal extent_____ Depth_____
Remarks_____

5. **Obstructions** Type_____ ☐ No obstructions
☐ Location shown on site map Areal extent_____
Size_____
Remarks_____

6. **Excessive Vegetative Growth** Type_____
☐ No evidence of excessive growth
☐ Vegetation in channels does not obstruct flow
☐ Location shown on site map Areal extent_____
Remarks_____

D. Cover Penetrations ☐ Applicable ☐ N/A

1. **Gas Vents** ☐ Active ☐ Passive
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance
☐ N/A
Remarks_____

2. **Gas Monitoring Probes**
☐ Properly secured/locked G Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks_____

3. **Monitoring Wells** (within surface area of landfill)
☐ Properly secured/locked G Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks_____

4. **Leachate Extraction Wells**
☐ Properly secured/locked G Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks_____

5. **Settlement Monuments** ☐ Located ☐ Routinely surveyed ☐ N/A
Remarks_____

~~**E. Gas Collection and Treatment**~~ ~~□ Applicable~~ ~~□ N/A~~

~~1.~~ ~~**Gas Treatment Facilities**~~
~~□ Flaring~~ ~~□ Thermal destruction~~ ~~□ Collection for reuse~~
~~□ Good condition~~ ~~□ Needs Maintenance~~
~~Remarks~~_____

~~2.~~ ~~**Gas Collection Wells, Manifolds and Piping**~~
~~□ Good condition~~ ~~□ Needs Maintenance~~
~~Remarks~~_____

~~3.~~ ~~**Gas Monitoring Facilities** (e.g., gas monitoring of adjacent homes or buildings)~~
~~□ Good condition~~ ~~□ Needs Maintenance~~ ~~□ N/A~~
~~Remarks~~_____

~~**F. Cover Drainage Layer**~~ ~~□ Applicable~~ ~~□ N/A~~

~~1.~~ ~~**Outlet Pipes Inspected**~~ ~~□ Functioning~~ ~~□ N/A~~
~~Remarks~~_____

~~2.~~ ~~**Outlet Rock Inspected**~~ ~~□ Functioning~~ ~~□ N/A~~
~~Remarks~~_____

~~**G. Detention/Sedimentation Ponds**~~ ~~□ Applicable~~ ~~□ N/A~~

~~1.~~ ~~**Siltation**~~ ~~Areal extent~~_____ ~~Depth~~_____ ~~□ N/A~~
~~□ Siltation not evident~~
~~Remarks~~_____

~~2.~~ ~~**Erosion**~~ ~~Areal extent~~_____ ~~Depth~~_____
~~□ Erosion not evident~~
~~Remarks~~_____

~~3.~~ ~~**Outlet Works**~~ ~~□ Functioning~~ ~~□ N/A~~
~~Remarks~~_____

~~4.~~ ~~**Dam**~~ ~~□ Functioning~~ ~~□ N/A~~
~~Remarks~~_____

~~**H. Retaining Walls**~~	~~□ Applicable □ N/A~~
~~1. **Deformations**~~	~~□ Location shown on site map □ Deformation not evident~~ ~~Horizontal displacement~~_____ ~~Vertical displacement~~_____ ~~Rotational displacement~~_____ ~~Remarks~~_____
~~2. **Degradation**~~	~~□ Location shown on site map □ Degradation not evident~~ ~~Remarks~~_____
~~**I. Perimeter Ditches/Off-Site Discharge**~~	~~□ Applicable □ N/A~~
~~1. **Siltation**~~	~~□ Location shown on site map □ Siltation not evident~~ ~~Areal extent~~_____ ~~Depth~~_____ ~~Remarks~~_____
~~2. **Vegetative Growth**~~	~~□ Location shown on site map □ N/A~~ ~~□ Vegetation does not impede flow~~ ~~Areal extent~~_____ ~~Type~~_____ ~~Remarks~~_____
~~3. **Erosion**~~	~~□ Location shown on site map □ Erosion not evident~~ ~~Areal extent~~_____ ~~Depth~~_____ ~~Remarks~~_____
~~4. **Discharge Structure**~~	~~□ Functioning □ N/A~~ ~~Remarks~~_____
~~**VIII. VERTICAL BARRIER WALLS**~~	~~G Applicable G N/A~~
~~1. **Settlement**~~	~~□ Location shown on site map □ Settlement not evident~~ ~~Areal extent~~_____ ~~Depth~~_____ ~~Remarks~~_____
~~2. **Performance Monitoring**~~	~~Type of monitoring~~_____ ~~□ Performance not monitored~~ ~~Frequency~~_____ ~~□ Evidence of breaching~~ ~~Head differential~~_____ ~~Remarks~~_____

~~**C. Treatment System** ☐ Applicable ☐ N/A~~

1. ~~**Treatment Train** (Check components that apply)~~
   ~~☐ Metals removal ☐ Oil/water separation ☐ Bioremediation~~
   ~~☐ Air stripping ☐ Carbon adsorbers~~
   ~~☐ Filters~~ _____
   ~~☐ Additive (e.g., chelation agent, flocculent)~~ _____
   ~~☐ Others~~ _____
   ~~☐ Good condition ☐ Needs Maintenance~~
   ~~☐ Sampling ports properly marked and functional~~
   ~~☐ Sampling/maintenance log displayed and up to date~~
   ~~☐ Equipment properly identified~~
   ~~☐ Quantity of groundwater treated annually~~ _____
   ~~☐ Quantity of surface water treated annually~~ _____
   ~~Remarks~~ _____

2. ~~**Electrical Enclosures and Panels** (properly rated and functional)~~
   ~~☐ N/A ☐ Good condition G Needs Maintenance~~
   ~~Remarks~~ _____

3. ~~**Tanks, Vaults, Storage Vessels**~~
   ~~☐ N/A ☐ Good condition G Proper secondary containment ☐ Needs Maintenance~~
   ~~Remarks~~ _____

4. ~~**Discharge Structure and Appurtenances**~~
   ~~☐ N/A ☐ Good condition G Needs Maintenance~~
   ~~Remarks~~ _____

5. ~~**Treatment Building(s)**~~
   ~~☐ N/A ☐ Good condition (esp. roof and doorways) ☐ Needs repair~~
   ~~☐ Chemicals and equipment properly stored~~
   ~~Remarks~~ _____

6. ~~**Monitoring Wells** (pump and treatment remedy)~~
   ~~☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition~~
   ~~☐ All required wells located ☐ Needs Maintenance ☐ N/A~~
   ~~Remarks~~ _____

~~**D. Monitoring Data**~~

1. ~~Monitoring Data~~
   ~~☐ Is routinely submitted on time ☐ Is of acceptable quality~~

2. ~~Monitoring data suggests:~~
   ~~☐ Groundwater plume is effectively contained ☐ Contaminant concentrations are declining~~

D. Monitored Natural Attenuation

1. **Monitoring Wells** (natural attenuation remedy)
□ Properly secured/locked □ Functioning □ Routinely sampled □ Good condition
□ All required wells located □ Needs Maintenance [x] N/A
Remarks_____

X. OTHER REMEDIES

If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.

XI. OVERALL OBSERVATIONS

A. Implementation of the Remedy

Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).

The primary remediation objective was to ensure that any residual risk associated with each parcel was acceptable based on the agreed-upon industrial/commercial end-use as the only use. In general , the restrictions required under CERCLA to ensure that the parcel being transferred is protective of human health and the environment are:

- Limit land use to industrial/commercial only
- Prohibit the removal of soil from the property boundaries
- Prohibit extraction or consumption of groundwater
- Prohibit the removal or penetration of concrete floor material in specific rooms of T building
- Allow site access for sampling and monitoring

Institutional controls have been implemented in the form of deed restrictions on future land use as outlined in the RODs for Parcels D, H, 3, and 4 and Phase I. Institutional controls for Parcel 6, 7, and 8 and OU-1 will be in the form of an environmental covenant in accordance with Ohio Revised Code. A environmental summary is prepared and included with the parcel deed that fulfills the requirements of CERCLA Section 120(h). The summary includes a discussion of the contamination that was present, the remedial actions that have taken place, and the residual risk that remains.

The current land owner has implemented several measures to ensure that ICs are not violated. These include including language into the technical requirements of all Requests for Proposal and Work Orders for work being performed on transferred parcels that excavated soil is not be removed from the site.

B.	**Adequacy of O&M**
	Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. Operation and maintenance activities are performed as outlined in the *Operations and Maintenance (O&M) Plan for the Implementation of Institutional Controls at the 1998 Mound Plant Property*. DOE has performed annual walk-overs and records reviews with respect to ICs and has found that portion of the remedy to be functioning as intended, thus far. Future inspections will be performed as outlined in the O&M Plan, which will be modified (if necessary) when the RODs for additional parcels are completed.
C.	**Early Indicators of Potential Remedy Problems**
	Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs that suggest that the protectiveness of the remedy may be compromised in the future. Recurring use of the retention basin in Parcel 4 for fishing indicated there was a potential violation of ICs. This issue was addressed by DOE, EPA, and OEPA in conjunction with the property owner, MDC in 2011.After reconsidering the exposure assumptions that were used to develop the industrial/commercial cleanup standards for the Mound site, DOE, EPA, and OEPA reached the conclusion that occasional visits to the retention pond by area residents will not result in an unacceptable risk. Even so, DOE and the MDC will continue to monitor and discourage these unauthorized uses of the Parcel 4 retention basin area. No further action is required to assure protectiveness of human health or the environment. No issues regarding cost or scope have been identified.
D.	**Opportunities for Optimization**
	Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy. None have been identified from this review.

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Site Inspection Checklist

I. SITE INFORMATION	
Site name: Mound Plant Site	**Date of inspection:** April 4-7 and 12, 2011
Location and Region: Miamisburg, OH (Region 5)	**EPA ID:** OH6890008984
Agency, office, or company leading the Five-Year Review: US Department of Energy	**Weather/temperature:** Partly Cloudy – 50's

Remedy Includes: (Check all that apply)

- [x] Landfill cover/containment
- [x] Access controls
- [x] Institutional controls
- [x] Groundwater pump and treatment
- □ Surface water collection and treatment
- [x] Other_ OU-1 landfill was excavated in 2 phased between 2007 and 2010. Area was remediated in accordance with the Mound 2000 process and backfilled with clean fill.
- □ Monitored natural attenuation
- [x] Groundwater containment
- □ Vertical barrier walls

Attachments: [x] Inspection team roster attached [x] Site map attached

II. INTERVIEWS (Check all that apply)

1. **O&M site manager** _____ _____ _____
   Name Title Date
   Interviewed □ at site □ at office □ by phone Phone no. _____
   Problems, suggestions; □ Report attached _____
   _____

2. **O&M staff** _____ _____ _____
   Name Title Date
   Interviewed □ at site □ at office □ by phone Phone no. _____
   Problems, suggestions; □ Report attached _____
   _____

3. **Local regulatory authorities and response agencies** (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply.

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; G Report attached _____
_____

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; G Report attached _____
_____

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; G Report attached _____
_____

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; G Report attached _____
_____

4. **Other interviews** (optional) □ Report attached.

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)

1. **O&M Documents**

x O&M manual	x Readily available	x Up to date	□ N/A
□ As-built drawings	x Readily available	□ Up to date	□ N/A
x Maintenance logs	x Readily available	x Up to date	□ N/A

Remarks__ _____
_____

2. **Site-Specific Health and Safety Plan** x Readily available x Up to date □ N/A
x Contingency plan/emergency response plan x Readily available x Up to date □ N/A
Remarks_____
_____

3. **O&M and OSHA Training Records** x Readily available x Up to date □ N/A
Remarks _Contractor complies with all necessary OSHA standards in accordance with O&M contract.__ _____

4.	**Permits and Service Agreements**			
	□ Air discharge permit	□ Readily available	□ Up to date	x N/A
	x Effluent discharge	□ Readily available	□ Up to date	□ N/A
	□ Waste disposal, POTW	□ Readily available	□ Up to date	x N/A
	□ Other permits_____	□ Readily available	□ Up to date	x N/A
	Remarks__Effluent monitored under CERCLA ATD under NPDES (Authorization Number 1IN90010*BD)_			
5.	**Gas Generation Records**	□ Readily available	□ Up to date	x N/A
	Remarks_____			
6.	**Settlement Monument Records**	□ Readily available	□ Up to date	x N/A
	Remarks_____			
7.	**Groundwater Monitoring Records**	x Readily available	x Up to date	□ N/A
	Remarks__ _____			
8.	**Leachate Extraction Records**	□ Readily available	□ Up to date	x N/A
	Remarks_____			
9.	**Discharge Compliance Records**			
	□ Air	□ Readily available	□ Up to date	□ N/A
	x Water (effluent)	x Readily available	x Up to date	□ N/A
	Remarks_ _Data reported in monthly DMR reports to OEPA__ _____			
10.	**Daily Access/Security Logs**	□ Readily available	□ Up to date	x N/A
	Remarks_____			

IV. O&M COSTS

1. **O&M Organization**
   □ State in-house □ Contractor for State
   □ PRP in-house □ Contractor for PRP
   □ Federal Facility in-house [x] Contractor for Federal Facility
   □ Other_____

2. **O&M Cost Records - COSTS ADDRESSED UNDER CHECKLIST FOR ICs**
   □ Readily available □ Up to date
   □ Funding mechanism/agreement in place
   Original O&M cost estimate_____ □ Breakdown attached

   Total annual cost by year for review period if available

   From_____ To_____ _____ □ Breakdown attached
   Date Date Total cost
   From_____ To_____ _____ □ Breakdown attached
   Date Date Total cost
   From_____ To_____ _____ □ Breakdown attached
   Date Date Total cost
   From_____ To_____ _____ □ Breakdown attached
   Date Date Total cost
   From_____ To_____ _____ □ Breakdown attached
   Date Date Total cost

3. **Unanticipated or Unusually High O&M Costs During Review Period**
   Describe costs and reasons: _____

V. ACCESS AND INSTITUTIONAL CONTROLS [x] Applicable □ N/A

A. Fencing

1. **Fencing damaged** □ Location shown on site map □ Gates secured [x] N/A
   Remarks – Fencing was removed during landfill excavation in 2007

B. Other Access Restrictions

1. **Signs and other security measures** □ Location shown on site map [x] N/A
   Remarks – Signage was removed during landfill excavation in 2007

C. Institutional Controls (ICs)

1. **Implementation and enforcement**

Site conditions imply ICs not properly implemented □ Yes [x] No □ N/A
Site conditions imply ICs not being fully enforced □ Yes [x] No □ N/A

Type of monitoring (*e.g.*, self-reporting, drive by) _Self-reporting, drive by_____
Frequency ___Weekly_____
Responsible party/agency _S.M. Stoller_____
Contact _Roy Mowen_____ _Mound Site H&S Lead_____ _2011_ (937) 847-8350__
Name Title Date Phone no.

Reporting is up-to-date [x] Yes □ No □ N/A
Reports are verified by the lead agency □ Yes □ No [x] N/A

Specific requirements in deed or decision documents have been met [x] Yes □ No □ N/A
Violations have been reported [x] Yes □ No □ N/A
Other problems or suggestions: □ Report attached
ICs included access restriction and fencing_____

2. **Adequacy** [x] ICs are adequate □ ICs are inadequate □ N/A
Remarks_____

D. General

1. **Vandalism/trespassing** □ Location shown on site map [x] No vandalism evident
Remarks_____

2. **Land use changes on site** [x] N/A
Remarks_____

3. **Land use changes off site** [x] N/A
Remarks_____

VI. GENERAL SITE CONDITIONS

A. Roads □ Applicable [x] N/A

1. **Roads damaged** □ Location shown on site map □ Roads adequate □ N/A
Remarks___Road not managed by DOE _____

B. Other Site Conditions

Remarks _____
OU-1 landfill area has been backfilled and regarded after excavation activites performed from 2007 to 2010.

VII. LANDFILL COVERS □ Applicable [x] N/A

A. Landfill Surface – OU-1 landfill was excavated in 2 phased between 2007 and 2010. Area was remediated in accordance with the Mound 2000 process and backfilled with clean fill.

~~1. **Settlement** (Low spots) □ Location shown on site map □ Settlement not evident~~
~~Areal extent_____ Depth_____~~
~~Remarks_____~~

~~2. **Cracks** □ Location shown on site map □ Cracking not evident~~
~~Lengths_____ Widths_____ Depths_____~~
~~Remarks_____~~

~~3. **Erosion** □ Location shown on site map □ Erosion not evident~~
~~Areal extent_____ Depth_____~~
~~Remarks_____~~

~~4. **Holes** □ Location shown on site map □ Holes not evident~~
~~Areal extent_____ Depth_____~~
~~Remarks_____~~

~~5. **Vegetative Cover** □ Grass □ Cover properly established □ No signs of stress~~
~~□ Trees/Shrubs (indicate size and locations on a diagram)~~
~~Remarks_____~~

~~6. **Alternative Cover (armored rock, concrete, etc.)** □ N/A~~
~~Remarks_____~~

~~7. **Bulges** □ Location shown on site map □ Bulges not evident~~
~~Areal extent_____ Height_____~~
~~Remarks_____~~

~~8. **Wet Areas/Water Damage** □ Wet areas/water damage not evident~~
~~□ Wet areas □ Location shown on site map Areal extent_____~~
~~□ Ponding □ Location shown on site map Areal extent_____~~
~~□ Seeps □ Location shown on site map Areal extent_____~~
~~□ Soft subgrade □ Location shown on site map Areal extent_____~~
~~Remarks_____~~

~~9.~~	~~**Slope Instability**~~ ~~□ Slides~~ ~~□ Location shown on site map~~ ~~□ No evidence of slope instability~~ ~~Areal extent~~ _____ ~~Remarks~~ _____
~~**B. Benches**~~	~~□ Applicable~~ ~~□ N/A~~ ~~(Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)~~
~~1.~~	~~**Flows Bypass Bench**~~ ~~□ Location shown on site map~~ ~~□ N/A or okay~~ ~~Remarks~~ _____
~~2.~~	~~**Bench Breached**~~ ~~□ Location shown on site map~~ ~~□ N/A or okay~~ ~~Remarks~~ _____
~~3.~~	~~**Bench Overtopped**~~ ~~□ Location shown on site map~~ ~~□ N/A or okay~~ ~~Remarks~~ _____
~~**C. Letdown Channels**~~	~~□ Applicable~~ ~~□ N/A~~ ~~(Channel lined with erosion control mats, riprap, grout bags, or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)~~
~~1.~~	~~**Settlement**~~ ~~□ Location shown on site map~~ ~~□ No evidence of settlement~~ ~~Areal extent~~ _____ ~~Depth~~ _____ ~~Remarks~~ _____
~~2.~~	~~**Material Degradation**~~ ~~□ Location shown on site map~~ ~~□ No evidence of degradation~~ ~~Material type~~ _____ ~~Areal extent~~ _____ ~~Remarks~~ _____
~~3.~~	~~**Erosion**~~ ~~□ Location shown on site map~~ ~~□ No evidence of erosion~~ ~~Areal extent~~ _____ ~~Depth~~ _____ ~~Remarks~~ _____

4. **Undercutting** ☐ Location shown on site map ☐ No evidence of undercutting
Areal extent_____ Depth_____
Remarks_____

5. **Obstructions** Type_____ v No obstructions
☐ Location shown on site map Areal extent_____
Size_____
Remarks_____

6. **Excessive Vegetative Growth** Type_____
☐ No evidence of excessive growth
☐ Vegetation in channels does not obstruct flow
☐ Location shown on site map Areal extent_____
Remarks_____

D. Cover Penetrations ☐ Applicable ☐ N/A

1. **Gas Vents** ☐ Active ☐ Passive
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance
☐ N/A
Remarks_____

2. **Gas Monitoring Probes**
☐ Properly secured/locked G Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks_____

3. **Monitoring Wells** (within surface area of landfill)
☐ Properly secured/locked G Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks_____

4. **Leachate Extraction Wells**
☐ Properly secured/locked G Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks_____

5. **Settlement Monuments** ☐ Located ☐ Routinely surveyed ☐ N/A
Remarks_____

E. Gas Collection and Treatment □ Applicable □ N/A

1. ~~**Gas Treatment Facilities**~~
   ~~□ Flaring □ Thermal destruction □ Collection for reuse~~
   ~~□ Good condition □ Needs Maintenance~~
   ~~Remarks~~_____

2. ~~**Gas Collection Wells, Manifolds and Piping**~~
   ~~□ Good condition □ Needs Maintenance~~
   ~~Remarks~~_____

3. ~~**Gas Monitoring Facilities** (*e.g.*, gas monitoring of adjacent homes or buildings)~~
   ~~□ Good condition □ Needs Maintenance □ N/A~~
   ~~Remarks~~_____

F. Cover Drainage Layer □ Applicable □ N/A

1. ~~**Outlet Pipes Inspected** □ Functioning □ N/A~~
   ~~Remarks~~_____

2. ~~**Outlet Rock Inspected** □ Functioning □ N/A~~
   ~~Remarks~~_____

G. Detention/Sedimentation Ponds □ Applicable □ N/A

1. ~~**Siltation** Areal extent~~_____ ~~Depth~~_____ ~~□ N/A~~
   ~~□ Siltation not evident~~
   ~~Remarks~~_____

2. ~~**Erosion** Areal extent~~_____ ~~Depth~~_____
   ~~□ Erosion not evident~~
   ~~Remarks~~_____

3. ~~**Outlet Works** □ Functioning □ N/A~~
   ~~Remarks~~_____

4. ~~**Dam** □ Functioning □ N/A~~
   ~~Remarks~~_____

H. Retaining Walls □ Applicable □ N/A

1. **Deformations** □ Location shown on site map □ Deformation not evident
Horizontal displacement_____ Vertical displacement_____
Rotational displacement_____
Remarks_____

2. **Degradation** □ Location shown on site map □ Degradation not evident
Remarks_____

I. Perimeter Ditches/Off-Site Discharge □ Applicable □ N/A

1. **Siltation** □ Location shown on site map □ Siltation not evident
Areal extent_____ Depth_____
Remarks_____

2. **Vegetative Growth** □ Location shown on site map □ N/A
□ Vegetation does not impede flow
Areal extent_____ Type_____
Remarks_____

3. **Erosion** □ Location shown on site map □ Erosion not evident
Areal extent_____ Depth_____
Remarks_____

4. **Discharge Structure** □ Functioning □ N/A
Remarks_____

VIII. VERTICAL BARRIER WALLS □ Applicable [x] N/A

1. **Settlement** □ Location shown on site map □ Settlement not evident
Areal extent_____ Depth_____
Remarks_____

2. **Performance Monitoring** Type of monitoring_____
□ Performance not monitored
Frequency_____ □ Evidence of breaching
Head differential_____
Remarks_____

C. Treatment System [x] Applicable □ N/A

1. **Treatment Train** (Check components that apply)
   □ Metals removal □ Oil/water separation □ Bioremediation
   [x] Air stripping □ Carbon adsorbers
   □ Filters_____
   □ Additive (*e.g.*, chelation agent, flocculent)__Drewsperse_____
   [x] Others__SVE system – removed in 2007_____
   [x] Good condition □ Needs Maintenance
   [x] Sampling ports properly marked and functional
   [x] Sampling/maintenance log displayed and up to date
   [x] Equipment properly identified
   [x] Quantity of groundwater (gallons) treated annually_2006-35473952; 2007-23718696; 2008-13149066; 2009-12766900; 2010-16428200_____
   □ Quantity of surface water treated annually_____
   Remarks _Quantities decreased in 2007 and later years due using 2 extraction wells rather than 3 extraction wells. Also extraction rate was decreased with installation of two new wells in 2007.__

2. **Electrical Enclosures and Panels** (properly rated and functional)
   □ N/A [x] Good condition □ Needs Maintenance
   Remarks_____

3. **Tanks, Vaults, Storage Vessels**
   □ N/A [x] Good condition □ Proper secondary containment □ Needs Maintenance
   Remarks_____

4. **Discharge Structure and Appurtenances**
   □ N/A [x] Good condition □ Needs Maintenance
   Remarks_____

5. **Treatment Building(s)**
   □ N/A [x] Good condition (esp. roof and doorways) □ Needs repair
   [x] Chemicals and equipment properly stored
   Remarks_____

6. **Monitoring Wells** (pump and treatment remedy)
   [x] Properly secured/locked [x] Functioning [x] Routinely sampled [x] Good condition
   [x] All required wells located □ Needs Maintenance □ N/A
   Remarks__Wells are inspected upon each sampling event and repair as necessary____

D. Monitoring Data

1. Monitoring Data
   [x] Is routinely submitted on time [x] Is of acceptable quality

2. Monitoring data suggests:
   [x] Groundwater plume is effectively contained [x] Contaminant concentrations are declining

D. Monitored Natural Attenuation

1. **Monitoring Wells** (natural attenuation remedy)
□ Properly secured/locked □ Functioning □ Routinely sampled □ Good condition
□ All required wells located □ Needs Maintenance [x] N/A
Remarks_____

X. OTHER REMEDIES

If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.

XI. OVERALL OBSERVATIONS

A. Implementation of the Remedy

Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).

The OU-1 remedial action was designed to control groundwater contamination (primarily low-level volatile organic compounds) to prevent migration of contamination toward the plant production wells, and to minimize exposure to potential receptors. The pathway of concern consists of leaching of contaminants from site soils or disposed wastes; entrainment in the groundwater flow; and withdrawal by the Mound Plant production wells or by other future wells. The plant production wells were abandoned in October 2005, when the facility was connected to the municipal water supply. The OU-1 landfill was excavated in two phases from 2007 through 2010 to support future redevelopment of the property by MDC.

The selected remedy for controlling contamination from the soils and groundwater at OU-1 is the collection, treatment, and disposal of groundwater. This action is being implemented through the collection and treatment of contaminated groundwater and discharge of the treated water. The chemical properties and hydraulic behavior of the groundwater system are monitored to verify the adequacy of the remedy.

The review of documents and environmental monitoring data and the results of the Five-Year Review inspection indicate that the remedy for the OU-1, which consists of controlling contaminant migration through the use of a pump and treatment system, is functioning as intended. Hydraulic and groundwater data indicate that the migration of the plume has been controlled by the use of the extraction wells. The performance monitoring indicates that VOC contamination is being extracted by the wells and treated to levels typically less than the detectable limit through the air stripper. Based on groundwater monitoring, potential receptors have not been exposed to VOC contamination from the landfill.

Groundwater level measurements and groundwater contaminant information have been collected as prescribed. These results from these data indicate that the plume has been contained and unacceptable migration has not occurred.

Influent and effluent data from the pump and treatment system indicate that VOC contaminated groundwater is being extracted and the mass removed over time has decreased. Effluent data supports that the air stripper system is effective in removing VOC contamination from the groundwater.

The fencing installed to prevent access to the landfill and the surface water controls were removed during excavation of the landfill starting in 2007 and upon completion of the excavation these components were considered unnecessary. Institutional controls that restrict land use and groundwater use will be implemented at a later date as outlined in the Record of Decision. Presently, the OU-1 ROD is being amended and will be included in Parcel 9. ICs will be will e in the form of an environmental covenant in accordance with Ohio Revised Code.

B. Adequacy of O&M

Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.

Operation and maintenance activities are performed as outlined in the *OU-1 Pump and Treatment Operational and Maintenance Plan*. The DOE also performs annual inspections on long-term remedies as called out in this plan and other O&M Plans. DOE has performed groundwater monitoring, effluent monitoring and system monitoring and has found this remedy to be functioning as intended.

C. Early Indicators of Potential Remedy Problems

Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs that suggest that the protectiveness of the remedy may be compromised in the future.

There are no early indicators of potential issues that could affect the protectiveness of the remedy.

D. Opportunities for Optimization

Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.

The optimization suggestions presented in the second Five-Year review checksheet were not implemented as plans for excavation of the landfill were underway in later 2006.

A rebound study was started in June 2011 to evaluate the possibility of addressing groundwater impact in OU-1 through MNA. It is expected that this study will be ongoing for 18 to 24 months. The P&T system was placed in standby in the event TCE concentrations in downgradient wells exceed the MCL. This would result in the system being restarted.

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Site Inspection Checklist

I. SITE INFORMATION	
Site name: Mound Plant Site	**Date of inspection:** April 4-7, 2010
Location and Region: Miamisburg, OH (Region 5)	**EPA ID:** OH6890008984
Agency, office, or company leading the Five-Year Review: US Department of Energy	**Weather/temperature:** N/A

Remedy Includes: (Check all that apply)

- □ Landfill cover/containment
- □ Access controls
- [x] Institutional controls
- □ Groundwater pump and treatment
- □ Surface water collection and treatment
- [x] Other ICs handled under Site Inspection Checklist for ICs.
- [x] Monitored natural attenuation
- □ Groundwater containment
- □ Vertical barrier walls

Attachments: [x] Inspection team roster attached [x] Site map attached

II. INTERVIEWS (Check all that apply)

1. **O&M site manager** _____ _____ _____
   Name Title Date
   Interviewed □ at site □ at office □ by phone Phone no. _____
   Problems, suggestions; □ Report attached _____

2. **O&M staff** _____ _____ _____
   Name Title Date
   Interviewed □ at site □ at office □ by phone Phone no. _____
   Problems, suggestions; □ Report attached _____

3. **Local regulatory authorities and response agencies** (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply.

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; G Report attached _____
_____

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; G Report attached _____
_____

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; G Report attached _____
_____

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; G Report attached _____
_____

4. **Other interviews** (optional) □ Report attached.

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)

1. **O&M Documents**

[x] O&M manual	[x] Readily available	[x] Up to date	□ N/A
□ As-built drawings	[x] Readily available	□ Up to date	□ N/A
□ Maintenance logs	□ Readily available	□ Up to date	[x] N/A

Remarks__As builts considered well logs._____
_____

2. **Site-Specific Health and Safety Plan** □ Readily available □ Up to date [x] N/A
□ Contingency plan/emergency response plan □ Readily available □ Up to date [x] N/A
Remarks_____
Actions resulting for the exceedence of triggers at wells and seeps deferred to the Mound Core Team

3. **O&M and OSHA Training Records** □ Readily available □ Up to date [x] N/A
Remarks_____
_____

4.	**Permits and Service Agreements**			
	□ Air discharge permit	□ Readily available	□ Up to date	x N/A
	□ Effluent discharge	□ Readily available	□ Up to date	x N/A
	□ Waste disposal, POTW	□ Readily available	□ Up to date	x N/A
	□ Other permits_____	□ Readily available	□ Up to date	x N/A
	Remarks_____			
5.	**Gas Generation Records**	□ Readily available	□ Up to date	x N/A
	Remarks_____			
6.	**Settlement Monument Records**	□ Readily available	□ Up to date	x N/A
	Remarks_____			
7.	**Groundwater Monitoring Records**	x Readily available	x Up to date	□ N/A
	Remarks__Annual reports and electronic database._____			
8.	**Leachate Extraction Records**	□ Readily available	□ Up to date	x N/A
	Remarks_____			
9.	**Discharge Compliance Records**			
	□ Air	□ Readily available	□ Up to date	x N/A
	□ Water (effluent)	□ Readily available	□ Up to date	x N/A
	Remarks_____			
10.	**Daily Access/Security Logs**	□ Readily available	□ Up to date	x N/A
	Remarks_____			

IV. O&M COSTS

1. **O&M Organization**

□ State in-house □ Contractor for State
□ PRP in-house □ Contractor for PRP
□ Federal Facility in-house [x] Contractor for Federal Facility
□ Other_____

2. **O&M Cost Records - COSTS ADDRESSED UNDER CHECKLIST FOR ICs**

□ Readily available □ Up to date
□ Funding mechanism/agreement in place
Original O&M cost estimate_____ □ Breakdown attached

Total annual cost by year for review period if available

From_____ To_____ _____ □ Breakdown attached
Date Date Total cost
From_____ To_____ _____ □ Breakdown attached
Date Date Total cost
From_____ To_____ _____ □ Breakdown attached
Date Date Total cost
From_____ To_____ _____ □ Breakdown attached
Date Date Total cost
From_____ To_____ _____ □ Breakdown attached
Date Date Total cost

3. **Unanticipated or Unusually High O&M Costs During Review Period**

Describe costs and reasons: _____

V. ACCESS AND INSTITUTIONAL CONTROLS [x] Applicable □ N/A

Refer to the Site Inspection Checksheet for ICs

~~**A. Fencing**~~

~~1. **Fencing damaged** □ Location shown on site map □ Gates secured □ N/A~~
~~Remarks_____~~

~~**B. Other Access Restrictions**~~

~~1. **Signs and other security measures** □ Location shown on site map □ N/A~~
~~Remarks_____~~

~~**C. Institutional Controls (ICs)**~~

~~1. **Implementation and enforcement**~~

~~Site conditions imply ICs not properly implemented ☐ Yes ☐ No ☐ N/A~~
~~Site conditions imply ICs not being fully enforced ☐ Yes ☐ No ☐ N/A~~

~~Type of monitoring (e.g., self reporting, drive by) _____~~
~~Frequency _____~~
~~Responsible party/agency _____~~
~~Contact _____ _____ _____ _____~~
~~Name Title Date Phone no.~~

~~Reporting is up-to-date ☐ Yes ☐ No ☐ N/A~~
~~Reports are verified by the lead agency ☐ Yes ☐ No ☐ N/A~~

~~Specific requirements in deed or decision documents have been met ☐ Yes ☐ No ☐ N/A~~
~~Violations have been reported ☐ Yes ☐ No ☐ N/A~~
~~Other problems or suggestions: ☐ Report attached~~

~~2. **Adequacy** ☐ ICs are adequate ☐ ICs are inadequate ☐ N/A~~
~~Remarks _____~~

~~**D. General**~~

~~1. **Vandalism/trespassing** ☐ Location shown on site map ☐ No vandalism evident~~
~~Remarks _____~~

~~2. **Land use changes on site** ☐ N/A~~
~~Remarks _____~~

~~3. **Land use changes off site** ☐ N/A~~
~~Remarks _____~~

VI. GENERAL SITE CONDITIONS

A. Roads ☐ Applicable ☒ N/A

~~1. **Roads damaged** ☐ Location shown on site map ☐ Roads adequate ☐ N/A~~
~~Remarks _____~~

~~B. Other Site Conditions~~

~~Remarks~~ _____

VII. LANDFILL COVERS □ Applicable [x] N/A

~~A. Landfill Surface~~

~~1. **Settlement** (Low spots) □ Location shown on site map □ Settlement not evident~~
~~Areal extent~~ _____ ~~Depth~~ _____
~~Remarks~~ _____

~~2. **Cracks** □ Location shown on site map □ Cracking not evident~~
~~Lengths~~ _____ ~~Widths~~ _____ ~~Depths~~ _____
~~Remarks~~ _____

~~3. **Erosion** □ Location shown on site map □ Erosion not evident~~
~~Areal extent~~ _____ ~~Depth~~ _____
~~Remarks~~ _____

~~4. **Holes** □ Location shown on site map □ Holes not evident~~
~~Areal extent~~ _____ ~~Depth~~ _____
~~Remarks~~ _____

~~5. **Vegetative Cover** □ Grass □ Cover properly established □ No signs of stress~~
~~G Trees/Shrubs (indicate size and locations on a diagram)~~
~~Remarks~~ _____

~~6. **Alternative Cover (armored rock, concrete, etc.)** □ N/A~~
~~Remarks~~ _____

~~7. **Bulges** □ Location shown on site map □ Bulges not evident~~
~~Areal extent~~ _____ ~~Height~~ _____
~~Remarks~~ _____

~~8. **Wet Areas/Water Damage** □ Wet areas/water damage not evident~~
~~□ Wet areas □ Location shown on site map Areal extent~~ _____
~~□ Ponding □ Location shown on site map Areal extent~~ _____
~~□ Seeps □ Location shown on site map Areal extent~~ _____
~~□ Soft subgrade □ Location shown on site map Areal extent~~ _____
~~Remarks~~ _____

~~9.~~	~~**Slope Instability** ☐ Slides ☐ Location shown on site map ☐ No evidence of slope instability~~ ~~Areal extent_____~~ ~~Remarks_____~~
~~**B. Benches** ☐ Applicable ☐ N/A~~ ~~(Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)~~	
~~1.~~	~~**Flows Bypass Bench** ☐ Location shown on site map ☐ N/A or okay~~ ~~Remarks_____~~
~~2.~~	~~**Bench Breached** ☐ Location shown on site map ☐ N/A or okay~~ ~~Remarks_____~~
~~3.~~	~~**Bench Overtopped** ☐ Location shown on site map ☐ N/A or okay~~ ~~Remarks_____~~
~~**C. Letdown Channels** ☐ Applicable ☐ N/A~~ ~~(Channel lined with erosion control mats, riprap, grout bags, or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)~~	
~~1.~~	~~**Settlement** ☐ Location shown on site map ☐ No evidence of settlement~~ ~~Areal extent_____ Depth_____~~ ~~Remarks_____~~
~~2.~~	~~**Material Degradation** ☐ Location shown on site map ☐ No evidence of degradation~~ ~~Material type_____ Areal extent_____~~ ~~Remarks_____~~
~~3.~~	~~**Erosion** ☐ Location shown on site map ☐ No evidence of erosion~~ ~~Areal extent_____ Depth_____~~ ~~Remarks_____~~

4. **Undercutting** ☐ Location shown on site map ☐ No evidence of undercutting
Areal extent_____ Depth_____
Remarks_____

5. **Obstructions** Type_____ ☐ No obstructions
☐ Location shown on site map Areal extent_____
Size_____
Remarks_____

6. **Excessive Vegetative Growth** Type_____
☐ No evidence of excessive growth
☐ Vegetation in channels does not obstruct flow
☐ Location shown on site map Areal extent_____
Remarks_____

D. Cover Penetrations ☐ Applicable ☐ N/A

1. **Gas Vents** ☐ Active ☐ Passive
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance
☐ N/A
Remarks_____

2. **Gas Monitoring Probes**
☐ Properly secured/locked G Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks_____

3. **Monitoring Wells** (within surface area of landfill)
☐ Properly secured/locked G Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks_____

4. **Leachate Extraction Wells**
☐ Properly secured/locked G Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks_____

5. **Settlement Monuments** ☐ Located ☐ Routinely surveyed ☐ N/A
Remarks_____

~~**E. Gas Collection and Treatment**~~	~~☐ Applicable ☐ N/A~~
~~1. **Gas Treatment Facilities**~~ ~~☐ Flaring ☐ Thermal destruction ☐ Collection for reuse~~ ~~☐ Good condition ☐ Needs Maintenance~~ ~~Remarks~~	
~~2. **Gas Collection Wells, Manifolds and Piping**~~ ~~☐ Good condition ☐ Needs Maintenance~~ ~~Remarks~~	
~~3. **Gas Monitoring Facilities** (*e.g.*, gas monitoring of adjacent homes or buildings)~~ ~~☐ Good condition ☐ Needs Maintenance ☐ N/A~~ ~~Remarks~~	
~~**F. Cover Drainage Layer**~~	~~☐ Applicable ☐ N/A~~
~~1. **Outlet Pipes Inspected** ☐ Functioning ☐ N/A~~ ~~Remarks~~	
~~2. **Outlet Rock Inspected** ☐ Functioning ☐ N/A~~ ~~Remarks~~	
~~**G. Detention/Sedimentation Ponds**~~	~~☐ Applicable ☐ N/A~~
~~1. **Siltation** Areal extent_____ Depth_____ ☐ N/A~~ ~~☐ Siltation not evident~~ ~~Remarks~~	
~~2. **Erosion** Areal extent_____ Depth_____~~ ~~☐ Erosion not evident~~ ~~Remarks~~	
~~3. **Outlet Works** ☐ Functioning ☐ N/A~~ ~~Remarks~~	
~~4. **Dam** ☐ Functioning ☐ N/A~~ ~~Remarks~~	

~~**H. Retaining Walls**~~ ~~□ Applicable~~ ~~□ N/A~~

~~1. **Deformations**~~ ~~□ Location shown on site map~~ ~~□ Deformation not evident~~
~~Horizontal displacement~~_____ ~~Vertical displacement~~_____
~~Rotational displacement~~_____
~~Remarks~~_____

~~2. **Degradation**~~ ~~□ Location shown on site map~~ ~~□ Degradation not evident~~
~~Remarks~~_____

~~**I. Perimeter Ditches/Off-Site Discharge**~~ ~~□ Applicable~~ ~~□ N/A~~

~~1. **Siltation**~~ ~~□ Location shown on site map~~ ~~□ Siltation not evident~~
~~Areal extent~~_____ ~~Depth~~_____
~~Remarks~~_____

~~2. **Vegetative Growth**~~ ~~□ Location shown on site map~~ ~~□ N/A~~
~~□ Vegetation does not impede flow~~
~~Areal extent~~_____ ~~Type~~_____
~~Remarks~~_____

~~3. **Erosion**~~ ~~□ Location shown on site map~~ ~~□ Erosion not evident~~
~~Areal extent~~_____ ~~Depth~~_____
~~Remarks~~_____

~~4. **Discharge Structure**~~ ~~□ Functioning~~ ~~□ N/A~~
~~Remarks~~_____

VIII. VERTICAL BARRIER WALLS □ Applicable [x] N/A

~~1. **Settlement**~~ ~~□ Location shown on site map~~ ~~□ Settlement not evident~~
~~Areal extent~~_____ ~~Depth~~_____
~~Remarks~~_____

~~2. **Performance Monitoring**~~ ~~Type of monitoring~~_____
~~□ Performance not monitored~~
~~Frequency~~_____ ~~□ Evidence of breaching~~
~~Head differential~~_____
~~Remarks~~_____

~~**C. Treatment System** □ Applicable □ N/A~~

1. ~~**Treatment Train** (Check components that apply)~~
   ~~□ Metals removal □ Oil/water separation □ Bioremediation~~
   ~~□ Air stripping □ Carbon adsorbers~~
   ~~□ Filters~~_____
   ~~□ Additive (*e.g.*, chelation agent, flocculent)~~_____
   ~~□ Others~~_____
   ~~□ Good condition □ Needs Maintenance~~
   ~~□ Sampling ports properly marked and functional~~
   ~~□ Sampling/maintenance log displayed and up to date~~
   ~~□ Equipment properly identified~~
   ~~□ Quantity of groundwater treated annually~~_____
   ~~□ Quantity of surface water treated annually~~_____
   ~~Remarks~~_____

2. ~~**Electrical Enclosures and Panels** (properly rated and functional)~~
   ~~□ N/A □ Good condition G Needs Maintenance~~
   ~~Remarks~~_____

3. ~~**Tanks, Vaults, Storage Vessels**~~
   ~~□ N/A □ Good condition G Proper secondary containment □ Needs Maintenance~~
   ~~Remarks~~_____

4. ~~**Discharge Structure and Appurtenances**~~
   ~~□ N/A □ Good condition G Needs Maintenance~~
   ~~Remarks~~_____

5. ~~**Treatment Building(s)**~~
   ~~□ N/A □ Good condition (esp. roof and doorways) □ Needs repair~~
   ~~□ Chemicals and equipment properly stored~~
   ~~Remarks~~_____

6. ~~**Monitoring Wells** (pump and treatment remedy)~~
   ~~□ Properly secured/locked □ Functioning □ Routinely sampled □ Good condition~~
   ~~□ All required wells located □ Needs Maintenance □ N/A~~
   ~~Remarks~~_____

D. Monitoring Data

1. Monitoring Data
   [x] Is routinely submitted on time [x] Is of acceptable quality

2. Monitoring data suggests:
   □ Groundwater plume is effectively contained [x] Contaminant concentrations are declining

D. Monitored Natural Attenuation

1. **Monitoring Wells** (natural attenuation remedy)

[x] Properly secured/locked [x] Functioning [x] Routinely sampled [x] Good condition
[x] All required wells located □ Needs Maintenance □ N/A
Remarks_Wells are inspected during each sampling event and repaired as required._____

X. OTHER REMEDIES

If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.

XI. OVERALL OBSERVATIONS

A. Implementation of the Remedy

Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).

Groundwater in Phase I is monitored for TCE and its degradation products to verify that the concentration of TCE is decreasing due to natural attenuation and is not impacting the BVA. A groundwater monitoring program was established to ensure that the BVA is not negatively impacted by TCE contaminated groundwater within the Phase I bedrock aquifer system. The objective of this monitoring is to protect the BVA by verifying that the concentration of TCE in the vicinity of well 0411, well 0443, and seep 0617 are decreasing and that TCE is not impacting the BVA.

Although not part of the selected remedy, monitoring was performed to evaluate barium, radium, chromium, and nickel impact in the Phase I groundwater. Based on investigations, none of these parameters were considered to be a contaminant of concern in Phase I.

Groundwater monitoring has been performed as prescribed in the *Phase I Remedy (Monitored Natural Attenuation) Groundwater Monitoring Plan*. Results from this monitoring indicate that concentrations do not exceed target levels and concentrations of TCE in the source wells have been declining or remaining stable. On the basis of declining TCE concentrations, the sampling frequency for the MNA program was reduced to semiannually in 2007 with the approval of the Mound Core Team.

The confirmatory sampling program was modified with approval from the Mound Core Team in 2007 and 2009.Confirmatory sampling for radium and barium are collected semiannually due. The confirmatory sampling for chromium and nickel were discontinued in 2010.

B. Adequacy of O&M

Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.

Operation and maintenance activities are performed as outlined in the *Operations and Maintenance (O&M) Plan for the Implementation of Institutional Controls at the 1998 Mound Plant Property* and the *Phase I Remedy (Monitored Natural Attenuation) Groundwater Monitoring Plan*. DOE has performed annual walk-overs and records reviews with respect to ICs and has found that portion of the remedy to be functioning as intended, thus far. DOE has also performed groundwater monitoring and has found the groundwater remedy to be functioning as intended.

C.	Early Indicators of Potential Remedy Problems
	Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs that suggest that the protectiveness of the remedy may be compromised in the future. None

D.	Opportunities for Optimization
	Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy. Sampling frequencies were decreased from quarterly to semiannually in 2007 on the basis of declining TCE concentrations in the source wells and indicates on no impact to the downgradient BVA. Confirmatory sampling for Ni and Cr were discontinued as results supported the stainless steel casings as the source of metals impact in groundwater in the vicinity of the wells.

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Site Inspection Checklist

I. SITE INFORMATION	
Site name: Mound Plant Site	**Date of inspection:** April 4-7, 2010
Location and Region: Miamisburg, OH (Region 5)	**EPA ID:** OH6890008984
Agency, office, or company leading the Five-Year Review: US Department of Energy	**Weather/temperature:** N/A

Remedy Includes: (Check all that apply)

- □ Landfill cover/containment
- □ Access controls
- [x] Institutional controls
- □ Groundwater pump and treatment
- □ Surface water collection and treatment
- [x] Other ICs handled under Site Inspection Checklist for ICs.
- [x] Monitored natural attenuation
- □ Groundwater containment
- □ Vertical barrier walls

Attachments: [x] Inspection team roster attached [x] Site map attached

II. INTERVIEWS (Check all that apply)

1. **O&M site manager** _____ _____ _____
   Name Title Date
   Interviewed □ at site □ at office □ by phone Phone no. _____
   Problems, suggestions; □ Report attached _____

2. **O&M staff** _____ _____ _____
   Name Title Date
   Interviewed □ at site □ at office □ by phone Phone no. _____
   Problems, suggestions; □ Report attached _____

3. **Local regulatory authorities and response agencies** (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply.

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; G Report attached _____
_____

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; G Report attached _____
_____

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; G Report attached _____
_____

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; G Report attached _____
_____

4. **Other interviews** (optional) □ Report attached.

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)

1. **O&M Documents**

[x] O&M manual	[x] Readily available	[x] Up to date	□ N/A
□ As-built drawings	[x] Readily available	□ Up to date	□ N/A
□ Maintenance logs	□ Readily available	□ Up to date	[x] N/A

Remarks__As builts considered well logs._____
_____

2. **Site-Specific Health and Safety Plan** □ Readily available □ Up to date [x] N/A
□ Contingency plan/emergency response plan □ Readily available □ Up to date [x] N/A
Remarks_____
_____

3. **O&M and OSHA Training Records** □ Readily available □ Up to date [x] N/A
Remarks_____
_____

4.	**Permits and Service Agreements**			
	□ Air discharge permit	□ Readily available	□ Up to date	x N/A
	□ Effluent discharge	□ Readily available	□ Up to date	x N/A
	□ Waste disposal, POTW	□ Readily available	□ Up to date	x N/A
	□ Other permits_____	□ Readily available	□ Up to date	x N/A
	Remarks_____			
5.	**Gas Generation Records**	□ Readily available	□ Up to date	x N/A
	Remarks_____			
6.	**Settlement Monument Records**	□ Readily available	□ Up to date	x N/A
	Remarks_____			
7.	**Groundwater Monitoring Records**	x Readily available	x Up to date	□ N/A
	Remarks__Annual reports and electronic database._____			
8.	**Leachate Extraction Records**	□ Readily available	□ Up to date	x N/A
	Remarks_____			
9.	**Discharge Compliance Records**			
	□ Air	□ Readily available	□ Up to date	x N/A
	□ Water (effluent)	□ Readily available	□ Up to date	x N/A
	Remarks_____			
10.	**Daily Access/Security Logs**	□ Readily available	□ Up to date	x N/A
	Remarks_____			

IV. O&M COSTS

1. **O&M Organization**

□ State in-house □ Contractor for State
□ PRP in-house □ Contractor for PRP
□ Federal Facility in-house [x] Contractor for Federal Facility
□ Other_____

2. **O&M Cost Records - COSTS ADDRESSED UNDER CHECKLIST FOR ICs**

□ Readily available □ Up to date
□ Funding mechanism/agreement in place
Original O&M cost estimate_____ □ Breakdown attached

Total annual cost by year for review period if available

From_____ To_____ _____ □ Breakdown attached
Date Date Total cost
From_____ To_____ _____ □ Breakdown attached
Date Date Total cost
From_____ To_____ _____ □ Breakdown attached
Date Date Total cost
From_____ To_____ _____ □ Breakdown attached
Date Date Total cost
From_____ To_____ _____ □ Breakdown attached
Date Date Total cost

3. **Unanticipated or Unusually High O&M Costs During Review Period**

Describe costs and reasons: _____

V. ACCESS AND INSTITUTIONAL CONTROLS [x] Applicable □ N/A

Refer to the Site Inspection Checksheet for ICs

~~**A. Fencing**~~

~~1. **Fencing damaged** □ Location shown on site map □ Gates secured □ N/A~~
~~Remarks_____~~

~~**B. Other Access Restrictions**~~

~~1. **Signs and other security measures** □ Location shown on site map □ N/A~~
~~Remarks_____~~

~~**C. Institutional Controls (ICs)**~~

~~1. **Implementation and enforcement**~~

~~Site conditions imply ICs not properly implemented ☐ Yes ☐ No ☐ N/A~~
~~Site conditions imply ICs not being fully enforced ☐ Yes ☐ No ☐ N/A~~

~~Type of monitoring (e.g., self-reporting, drive by) _____~~
~~Frequency _____~~
~~Responsible party/agency _____~~
~~Contact _____ _____ _____ _____~~
~~Name Title Date Phone no.~~

~~Reporting is up-to-date ☐ Yes ☐ No ☐ N/A~~
~~Reports are verified by the lead agency ☐ Yes ☐ No ☐ N/A~~

~~Specific requirements in deed or decision documents have been met ☐ Yes ☐ No ☐ N/A~~
~~Violations have been reported ☐ Yes ☐ No ☐ N/A~~
~~Other problems or suggestions: ☐ Report attached~~

~~2. **Adequacy** ☐ ICs are adequate ☐ ICs are inadequate ☐ N/A~~
~~Remarks _____~~

~~**D. General**~~

~~1. **Vandalism/trespassing** ☐ Location shown on site map ☐ No vandalism evident~~
~~Remarks _____~~

~~2. **Land use changes on site** ☐ N/A~~
~~Remarks _____~~

~~3. **Land use changes off site** ☐ N/A~~
~~Remarks _____~~

VI. GENERAL SITE CONDITIONS

A. Roads ☐ Applicable ☒ N/A

~~1. **Roads damaged** ☐ Location shown on site map ☐ Roads adequate ☐ N/A~~
~~Remarks _____~~

~~B. Other Site Conditions~~

~~Remarks~~ _____

VII. LANDFILL COVERS □ Applicable [x] N/A

~~A. Landfill Surface~~

~~1. **Settlement** (Low spots) □ Location shown on site map □ Settlement not evident~~
~~Areal extent~~ _____ ~~Depth~~ _____
~~Remarks~~ _____

~~2. **Cracks** □ Location shown on site map □ Cracking not evident~~
~~Lengths~~ _____ ~~Widths~~ _____ ~~Depths~~ _____
~~Remarks~~ _____

~~3. **Erosion** □ Location shown on site map □ Erosion not evident~~
~~Areal extent~~ _____ ~~Depth~~ _____
~~Remarks~~ _____

~~4. **Holes** □ Location shown on site map □ Holes not evident~~
~~Areal extent~~ _____ ~~Depth~~ _____
~~Remarks~~ _____

~~5. **Vegetative Cover** □ Grass □ Cover properly established □ No signs of stress~~
~~G Trees/Shrubs (indicate size and locations on a diagram)~~
~~Remarks~~ _____

~~6. **Alternative Cover (armored rock, concrete, etc.)** □ N/A~~
~~Remarks~~ _____

~~7. **Bulges** □ Location shown on site map □ Bulges not evident~~
~~Areal extent~~ _____ ~~Height~~ _____
~~Remarks~~ _____

~~8. **Wet Areas/Water Damage** □ Wet areas/water damage not evident~~
~~□ Wet areas □ Location shown on site map Areal extent~~ _____
~~□ Ponding □ Location shown on site map Areal extent~~ _____
~~□ Seeps □ Location shown on site map Areal extent~~ _____
~~□ Soft subgrade □ Location shown on site map Areal extent~~ _____
~~Remarks~~ _____

~~9.~~	~~**Slope Instability** ☐ Slides ☐ Location shown on site map ☐ No evidence of slope instability~~ ~~Areal extent_____~~ ~~Remarks_____~~
~~**B. Benches** ☐ Applicable ☐ N/A~~ ~~(Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)~~	
~~1.~~	~~**Flows Bypass Bench** ☐ Location shown on site map ☐ N/A or okay~~ ~~Remarks_____~~
~~2.~~	~~**Bench Breached** ☐ Location shown on site map ☐ N/A or okay~~ ~~Remarks_____~~
~~3.~~	~~**Bench Overtopped** ☐ Location shown on site map ☐ N/A or okay~~ ~~Remarks_____~~
~~**C. Letdown Channels** ☐ Applicable ☐ N/A~~ ~~(Channel lined with erosion control mats, riprap, grout bags, or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)~~	
~~1.~~	~~**Settlement** ☐ Location shown on site map ☐ No evidence of settlement~~ ~~Areal extent_____ Depth_____~~ ~~Remarks_____~~
~~2.~~	~~**Material Degradation** ☐ Location shown on site map ☐ No evidence of degradation~~ ~~Material type_____ Areal extent_____~~ ~~Remarks_____~~
~~3.~~	~~**Erosion** ☐ Location shown on site map ☐ No evidence of erosion~~ ~~Areal extent_____ Depth_____~~ ~~Remarks_____~~

4. **Undercutting** ☐ Location shown on site map ☐ No evidence of undercutting
Areal extent_____ Depth_____
Remarks_____

5. **Obstructions** Type_____ ☐ No obstructions
☐ Location shown on site map Areal extent_____
Size_____
Remarks_____

6. **Excessive Vegetative Growth** Type_____
☐ No evidence of excessive growth
☐ Vegetation in channels does not obstruct flow
☐ Location shown on site map Areal extent_____
Remarks_____

D. Cover Penetrations ☐ Applicable ☐ N/A

1. **Gas Vents** ☐ Active ☐ Passive
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance
☐ N/A
Remarks_____

2. **Gas Monitoring Probes**
☐ Properly secured/locked G Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks_____

3. **Monitoring Wells** (within surface area of landfill)
☐ Properly secured/locked G Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks_____

4. **Leachate Extraction Wells**
☐ Properly secured/locked G Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks_____

5. **Settlement Monuments** ☐ Located ☐ Routinely surveyed ☐ N/A
Remarks_____

~~**E. Gas Collection and Treatment**~~ ~~□ Applicable~~ ~~□ N/A~~

~~1. **Gas Treatment Facilities**~~
~~□ Flaring~~ ~~□ Thermal destruction~~ ~~□ Collection for reuse~~
~~□ Good condition~~ ~~□ Needs Maintenance~~
~~Remarks~~_____

~~2. **Gas Collection Wells, Manifolds and Piping**~~
~~□ Good condition~~ ~~□ Needs Maintenance~~
~~Remarks~~_____

~~3. **Gas Monitoring Facilities** (*e.g.*, gas monitoring of adjacent homes or buildings)~~
~~□ Good condition~~ ~~□ Needs Maintenance~~ ~~□ N/A~~
~~Remarks~~_____

~~**F. Cover Drainage Layer**~~ ~~□ Applicable~~ ~~□ N/A~~

~~1. **Outlet Pipes Inspected**~~ ~~□ Functioning~~ ~~□ N/A~~
~~Remarks~~_____

~~2. **Outlet Rock Inspected**~~ ~~□ Functioning~~ ~~□ N/A~~
~~Remarks~~_____

~~**G. Detention/Sedimentation Ponds**~~ ~~□ Applicable~~ ~~□ N/A~~

~~1. **Siltation**~~ ~~Areal extent~~_____ ~~Depth~~_____ ~~□ N/A~~
~~□ Siltation not evident~~
~~Remarks~~_____

~~2. **Erosion**~~ ~~Areal extent~~_____ ~~Depth~~_____
~~□ Erosion not evident~~
~~Remarks~~_____

~~3. **Outlet Works**~~ ~~□ Functioning~~ ~~□ N/A~~
~~Remarks~~_____

~~4. **Dam**~~ ~~□ Functioning~~ ~~□ N/A~~
~~Remarks~~_____

~~**H. Retaining Walls** □ Applicable □ N/A~~

~~1. **Deformations** □ Location shown on site map □ Deformation not evident~~
~~Horizontal displacement_____ Vertical displacement_____~~
~~Rotational displacement_____~~
~~Remarks_____~~

~~2. **Degradation** □ Location shown on site map □ Degradation not evident~~
~~Remarks_____~~

~~**I. Perimeter Ditches/Off-Site Discharge** □ Applicable □ N/A~~

~~1. **Siltation** □ Location shown on site map □ Siltation not evident~~
~~Areal extent_____ Depth_____~~
~~Remarks_____~~

~~2. **Vegetative Growth** □ Location shown on site map □ N/A~~
~~□ Vegetation does not impede flow~~
~~Areal extent_____ Type_____~~
~~Remarks_____~~

~~3. **Erosion** □ Location shown on site map □ Erosion not evident~~
~~Areal extent_____ Depth_____~~
~~Remarks_____~~

~~4. **Discharge Structure** □ Functioning □ N/A~~
~~Remarks_____~~

VIII. VERTICAL BARRIER WALLS □ Applicable [x] N/A

~~1. **Settlement** □ Location shown on site map □ Settlement not evident~~
~~Areal extent_____ Depth_____~~
~~Remarks_____~~

~~2. **Performance Monitoring** Type of monitoring_____~~
~~□ Performance not monitored~~
~~Frequency_____ □ Evidence of breaching~~
~~Head differential_____~~
~~Remarks_____~~

~~**C. Treatment System** □ Applicable □ N/A~~

1. ~~**Treatment Train** (Check components that apply)~~
   ~~□ Metals removal □ Oil/water separation □ Bioremediation~~
   ~~□ Air stripping □ Carbon adsorbers~~
   ~~□ Filters~~
   ~~□ Additive (*e.g.*, chelation agent, flocculent)~~
   ~~□ Others~~
   ~~□ Good condition □ Needs Maintenance~~
   ~~□ Sampling ports properly marked and functional~~
   ~~□ Sampling/maintenance log displayed and up to date~~
   ~~□ Equipment properly identified~~
   ~~□ Quantity of groundwater treated annually~~
   ~~□ Quantity of surface water treated annually~~
   ~~Remarks~~

2. ~~**Electrical Enclosures and Panels** (properly rated and functional)~~
   ~~□ N/A □ Good condition G Needs Maintenance~~
   ~~Remarks~~

3. ~~**Tanks, Vaults, Storage Vessels**~~
   ~~□ N/A □ Good condition G Proper secondary containment □ Needs Maintenance~~
   ~~Remarks~~

4. ~~**Discharge Structure and Appurtenances**~~
   ~~□ N/A □ Good condition G Needs Maintenance~~
   ~~Remarks~~

5. ~~**Treatment Building(s)**~~
   ~~□ N/A □ Good condition (esp. roof and doorways) □ Needs repair~~
   ~~□ Chemicals and equipment properly stored~~
   ~~Remarks~~

6. ~~**Monitoring Wells** (pump and treatment remedy)~~
   ~~□ Properly secured/locked □ Functioning □ Routinely sampled □ Good condition~~
   ~~□ All required wells located □ Needs Maintenance □ N/A~~
   ~~Remarks~~

D. Monitoring Data

1. Monitoring Data
   [x] Is routinely submitted on time [x] Is of acceptable quality

2. Monitoring data suggests:
   □ Groundwater plume is effectively contained [x] Contaminant concentrations are declining

D. Monitored Natural Attenuation

1. **Monitoring Wells** (natural attenuation remedy)

[x] Properly secured/locked [x] Functioning [x] Routinely sampled [x] Good condition
[x] All required wells located □ Needs Maintenance □ N/A
Remarks_Wells are inspected during each sampling event and repaired as required._____

X. OTHER REMEDIES

If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.

XI. OVERALL OBSERVATIONS

A. Implementation of the Remedy

Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).

Groundwater in the Parcel 6, 7, and 8 area is monitored for TCE and its degradation products to verify that the downgradient BVA is not affected and that concentrations are decreasing. In addition, groundwater discharging from seeps is monitored for TCE and its degradation products, tritium, and radioisotopes (strontium-90 [Sr-90], Ra-226, and Ra-228) to verify that source removal will result in decreasing concentrations over time.

Groundwater monitoring has been performed as prescribed in the *Parcel 6, 7 and 8Remedy (Monitored Natural Attenuation) Groundwater Monitoring Plan*. Results from this monitoring indicate that concentrations are variable and target level for TCE has been periodically exceeded. However, this remedy has not been implemented long since source removal was completed. Insufficient data is available to determine a trend in contaminant concentrations.

B. Adequacy of O&M

Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.

Operation and maintenance activities are performed as outlined in the *Operations and Maintenance (O&M) Plan for the Implementation of Institutional Controls at the 1998 Mound Plant Property* and the *Parcel 6, 7, and 8 Remedy (Monitored Natural Attenuation) Groundwater Monitoring Plan*. DOE has performed annual walk-overs and records reviews with respect to ICs and has found that portion of the remedy to be functioning as intended, thus far. DOE has also performed groundwater monitoring and has found the groundwater remedy to be functioning as intended.

C.	Early Indicators of Potential Remedy Problems
	Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs that suggest that the protectiveness of the remedy may be compromised in the future. None
D.	**Opportunities for Optimization**
	Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy. None

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The CERCLA five-year review team included:

- Becky Cato, S.M. Stoller Corporation (Stoller)
- Laura Cummins, Stoller
- Chuck Friedman, Stoller
- Art Kleinrath, U.S. Department of Energy, Office of Legacy Management (LM)
- Joyce Massie, J.G. Management Systems, Inc. (JGMS)
- Bob Ransbottom, Stoller

Participants in the annual walkaround performed on April 12, 2011, included:

- Frank Bullock, MDC
- Becky Cato, Stoller
- Joe Crombie, ODH
- Tim Fisher, EPA
- Chuck Friedman, Stoller
- Ken Karp, Stoller
- Art Kleinrath, LM
- Joyce Massie, JGMS
- Anthony Campbell, OEPA
- Jane Powell, LM
- Bob Ransbottom, Stoller
- Karen Reed, LM
- Jeff Smith, OEPA
- Ellen Stanifer, City of Miamisburg
- Gary Weidenbach, Stoller

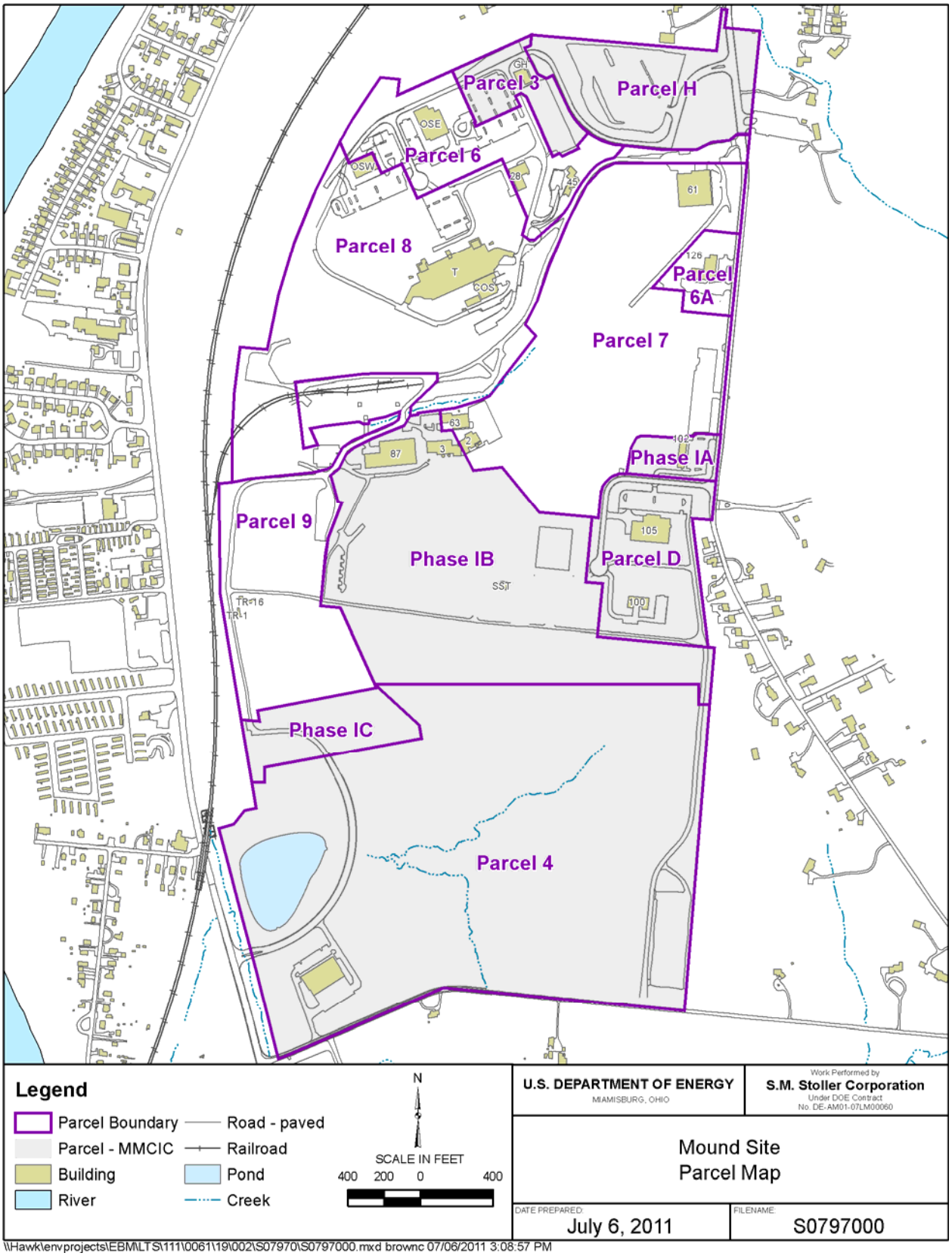

Figure B-1 Mound Site Parcel Map

Interview

Name:Robert C. Ransbottom
Title: Stoller Mound Site Manager
Company: S.M. Stoller Corporation.
Location: Mound Site – Miamisburg, OH
Date: July 11, 2011

1. What is your overall impression of the project? (general sentiment)
I feel we have done a great job meeting our regulatory requirements for monitoring and reporting of groundwater contamination levels at Mound. The institutional controls (ICs) are monitored by on-site personnel and during the Annual IC inspection.

2. Is the remedy functioning as expected? How well is the remedy performing?
The remedy is performing very well. Groundwater contamination has not spread and has been greatly reduced in the OU-1 area since the OU-1 remediation has been completed. The ICs of not taking soil off-site and not drilling for groundwater to be used for human consumption have been communicated to the Mound Development Corporation, to which the site is being transferred. On-site DOE and contractor personnel are also aware of them and note any unusual activity. The ICs are also checked during the annual IC inspection.

3. What does the monitoring data show? Are there any trends that show contaminant levels are decreasing?
The Phase I and Parcel 6, 7, and 8 remedies are Monitored Natural Attenuation (MNA). The Phase I groundwater contamination levels are fairly stable. The Parcel 6, 7, and 8 levels fluctuate somewhat with the seasons and with rain events, but this is to be expected with remdiation of these areas only being completed in 2006. The OU-1 remedy includes a Pump and Treat system to prevent the spread of groundwater contamination. The groundwater contamination levels in the area of OU-1 have been greatly reduced due to the OU-1 remediation, which concluded in 2010.

4. Is there a continuous on-site O&M presence? If so, please describe staff and activities. If there is not a continuous on-site presence, describe staff and frequency of site inspections and activities.
There was a continuous on-site O&M presence at the site over the five years covered by this report. This presence is expected to be greatly reduced with the consolidation of the Fernald and Mound site offices in September 2011. However,there will continue to be monthly and quarterly groundwater monitoring and the annual Institutional Controls site inspection.

5. Have there been any significant changes in the O&M requirements, maintenance schedules, or sampling routines since start-up or in the last five years? If so, do they affect the protectiveness or effectiveness of the remedy? Please describe changes and impacts.
The main changes involved increasing monitoring requirements at OU-1 during the remediation. Groundwater sampling at the OU-1 area wells was increased to monthly during the remediation.

6. Have there been unexpected O&M difficulties or costs at the site since start-up or in the last five years? If so, please give details.
The main difficulty was maintaining normal operations and interfacing with the contractor during the OU-1 remediation, which lasted from January 2007 to July 2010. However, all regulatory requirements were met and the remediation greatly reduced the OU-1 groundwater contamination levels.

7. Have there been opportunities to optimize O&M, or sampling efforts? Please describe changes and resultant or desired cost savings or improved efficiency.
The main change was to bring groundwater monitoring in-house. Groundwater was being performed by a subcontractor, but for the most part is now being performed by the Fernald groundwater samplers. This resulted in an approximately $60,000 a year cost savings. The well monitoring network is being re-evaluated during the finalization of the OU-1 regulatory paperwork and through the development of a comprehensive site-wide O&M plan.

8. Do you have any comments, suggestions, or recommendations regarding the project?
I would recommend that unused groundwater monitoring wells be removed when the final monitoring network is finalized.

Interview

Name:Row L. Mowen
Title: Stoller Health and Safety Lead
Company: S.M. Stoller Corporation.
Location: Mound Site – Miamisburg, OH
Date: July 11, 2011

1. What is your overall impression of the project? (general sentiment)
I feel Stoller has done a very good job meeting our regulatory requirements for groundwater contamination monitoring and reporting in a timely manner.

2. Is the remedy functioning as expected? How well is the remedy performing?
Mound's groundwater remedy is performing very well. Contamination has not spread and since the OU-1 remediation levels have been greatly reduced.

3. What does the monitoring data show? Are there any trends that show contaminant levels are decreasing?
Monitoring data show that the levels do fluctuate somewhat with the seasons and rain events but are generally the same. The OU-1 remediation greatly reduced its area levels. Some fluctuation in levels for parcels 6-7-8 occur since the cleanup was only recently completed.

4. Is there a continuous on-site O&M presence? If so, please describe staff and activities. If there is not a continuous on-site presence, describe staff and frequency of site inspections and activities.
Stoller has provided a continuous on-site O&M presence via in-house daily sampling and subcontractor personnel generally doing the Monthly and Quarterly sampling. During the five year reporting period Stoller has also assumed the monthly and quarterly sampling in-house with significant cost savings. Stoller presence is expected to decrease with the Fernald consolidation in September 2011. There will continue to be Monthly and Quarterly groundwater monitoring and annual Institutional Controls site inspections.

5. Have there been any significant changes in the O&M requirements, maintenance schedules, or sampling routines since start-up or in the last five years? If so, do they affect the protectiveness or effectiveness of the remedy? Please describe changes and impacts.
The five year period actually included increased monitoring requirements due to the OU-1 remediation. Sampling at OU-1 increased to monthly sampling during and after remediation. There was also a short rebound test conducted to gather more information in the OU-1 area. The overall effectiveness remains good.

6. Have there been unexpected O&M difficulties or costs at the site since start-up or in the last five years? If so, please give details.
Stoller worked closely with the OU-1 contractors during the 2007 thru July 2010 remediation. All regulatory requirements continued to be met in a timely manner during the remediation work.

7. Have there been opportunities to optimize O&M, or sampling efforts? Please describe changes and resultant or desired cost savings or improved efficiency.
The decision to bring the monthly and quarterly groundwater sampling to in-house sampling was the biggest cost savings. The monitoring well system is being re-evaluated during the finalization of the OU-1 regulatory agreement and a comprehensive site-wide O&M plan.

8. Do you have any comments, suggestions, or recommendations regarding the project?
Stoller personnel have been actively working with the city of Miamisburg during the proposed spine road development plan to protect and maintain the groundwater monitoring well system to continue to collect and analyze representative locations. Existing but unused monitoring wells should be properly removed/abandoned after finalizing the monitoring network plan.