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MAY 5 2005

CH2M HILL  
Mound, Inc.  
1 Mound Road  
P.O. Box 3030  
Miamisburg, OH  
45343-3030

SMO-069-05  
May 4, 2005



Ms. Margaret L. Marks, Director  
Miamisburg Closure Project  
U. S. Department of Energy  
1075 Mound Road  
Miamisburg, OH 45342

ATTENTION: Paul Lucas

SUBJECT: **Contract No. DE-AC24-03OH20152: Deliverable #39 Potential Release Site and Removal Action Documentation; Section C.2.3.1.3 Remaining Response Actions; PRS 11 Public Fact Sheet, Final**

Dear Ms. Marks:

Attached is the following Final document for your records:

- PRS 11 Public Fact Sheet, Final

The original PRS 11 Public Fact Sheet was released for public review in December 2003; responses to public comments on that version of the Fact Sheet were provided on March 31, 2005. Subsequent to the initial release, the Public Fact Sheet was revised and released again for public review in February 2005. Attached is the Final Public Fact Sheet, with the responses to public comments attached.

If you or members of your staff have any questions regarding the document, or if additional support is needed, please contact Dave Rakel at 937-865-4203.

Sincerely,

John Lehew  
Site Manager

JL/ms  
Enclosures

- cc: T. Fischer, USEPA, (1) w/attachments  
 B. Nickel, OEPA, (1) w/attachments  
 R. Vandegrift, ODH, (1) w/attachments  
 M. Wojciechowski, Tetra Tech, (1) w/attachs  
 S. Smiley, DOE/MCP, (1) w/attachments  
 L. Rawls, DOE/MCP, w/o attachments  
 R. Tormey, DOE/OH, (1) w/attachments  
 G. Desai, DOE/HQ, (1) w/attachments  
 F. Bullock, MMCIC, (3) w/attachments  
 B. Moore, City of Miamisburg, (1) w/attachs  
 MESH, (1) w/attachments  
 Public Reading Room, (4) w/attachments

- M. Spivey, (1) w/attachments  
 K. Arthur, (1) w/attachments  
 ER Records, (1) w/attachments  
 DCC (1) w/attachments  
 J. Lehew, w/o attachments  
 D. Rakel, w/o attachments  
 V. Darnell, w/o attachments  
 J. Fontaine, w/o attachments  
 MOAT Coordinator, w/o attachments  
 W. Webb, w/o attachments  
 M. McDougal, w/o attachments  
 File, w/o attachments

# PUBLIC FACT SHEET

## PRS 11: Thorium and Polonium – Contaminated Waste Area

This Fact Sheet satisfies the Public Notification requirement set forth in the Contingent Removal Action Memorandum<sup>1</sup>. This Fact Sheet replaces the version<sup>4</sup> released in December 2003 and allows a partial removal.

**Background.** Potential Release Site (PRS) 11, also known as Area 2 and the Crushed Drum Area, is located in the southwest portion of the site (within the boundary of CERCLA Operable Unit 1) as shown on Figure 1. Approximately 2,500 empty drums were crushed in place and covered with soil. These drums had previously contained thorium process materials used for thorium projects in the 1960s. This location also contains buried wood ash and debris from a fire that had consumed the polonium-contaminated flooring from the Dayton units (Area 13). Since Polonium-210 has a half-life of 138 days, it is no longer detectable. However, Lead-210 (half-life of 22 years) and Bismuth-210m (half-life of  $3.04 \times 10^6$  years) may be present due to processes that produced Polonium-210. Therefore, Lead-210 and Bismuth-210m are listed in the table below.

**Characterization.** Thorium-232 was found during installation of drainage features and wells in support of the Operable Unit 1 Record of Decision remedy and subsequent augmentations. The maximum concentration found is included in the following table (unit = pCi/g).

Analyte	Bkgd**	Maximum Concentration	Cleanup Objective*
Lead-210 + D	1.2	see note	7.4
Bismuth-210m	ND	see note	8.3
Thorium-232	1.4	561.7	2.1

note: Pb-210 and Bi-210m, as a COCs, are only associated with Dayton debris, if found. No samples above C.O. have been reported.  
 ND = Not Detectable \* risk criteria \*\*background soil concentration

Based on the above, the Department of Energy (and the Core Team, see Recommendation Page on page 2) determined that a **Removal Action (RA)** was appropriate per the Contingent Removal Action Memo<sup>1</sup>. The RA Contaminants of Concern (COC) are listed in the table above.

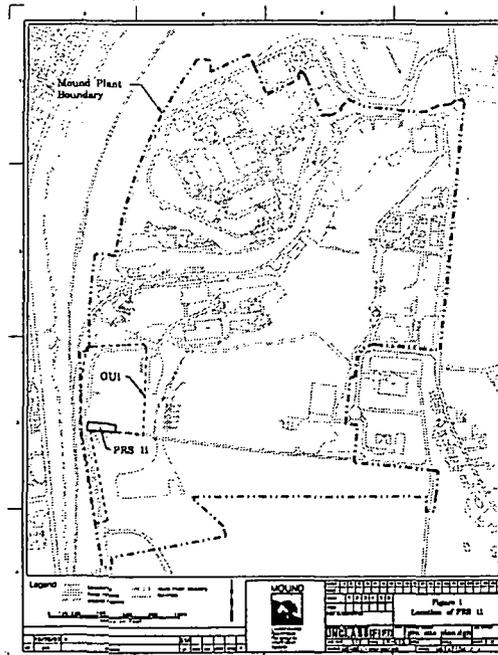
The **Work Plan** for Contingent Removal Actions<sup>2</sup>, supplemented by the Unique Work Package as reviewed by the Core Team<sup>1,2</sup>, includes procedures, instructions, and applicable permits and notifications required to safely conduct the work. Erosion and runoff/runoff controls will be managed per the SWPPP<sup>3</sup>.

The RA will consist of excavation of the crushed drums (and other debris associated with the Dayton Units if discovered), as indicated by sample results above the cleanup objectives (see table) and shipping of debris to an approved disposal facility. Concurrently a professional engineering evaluation will be conducted on the available alternatives to maximize the removal of known radiological contamination while ensuring worker safety and the integrity of the landfill. The soil excavation will continue to the extent possible without endangering the integrity of the adjacent landfill. Post-excavation sampling will be performed within the area per a Core Team approved **Standard Verification Sampling & Analysis Plan (VSAP)**.

**Schedule.** This Fact Sheet will be in public review for 30 days, ending March 22, 2005. The RA is planned to commence at the beginning of March 2005. A summary of the RA and the verification data will be included in the On-Scene Coordinator (OSC) Report. The OSC Report will be placed in the public reading room after the conclusion of the verification sampling and approval by the Core Team.

Excavation of approximately 13,000 yd<sup>3</sup> (9,939 m<sup>3</sup>) of material (banked and based upon a 1.5:1 slopeback, including overburden), disposal, and verification are expected to cost less than \$4,115,000.

Additional information can be found in the public reading room, or by contacting Sue Smiley at 847-8350 ext. 318.



1: Action Memorandum/Engineering Evaluation/Cost Analysis, Contingent Removal Action for Contaminated Soil, June 2002, Final  
 2: Standard Work Package for Contingent Removal Actions, November 2001, Final  
 3: Storm Water Pollution Prevention Plan  
 4: PRS 11 Fact Sheet, December 2003, Public Review Draft

# PUBLIC FACT SHEET

## PRS 11: Thorium and Polonium – Contaminated Waste Area

### Recommendation for PRS 11

Potential Release Site (PRS) 11, also known as Area 2 and the Crushed Drum Area, is located in the southwest portion of the site (within the boundary of CERCLA Operable Unit 1), see Figure 1 on Fact Sheet. Approximately 2,500 empty drums were crushed in place and covered with soil. These drums had previously contained thorium process materials used for thorium projects in the 1960s. This location also contains buried wood ash and debris from a fire that had consumed the polonium-contaminated flooring from the Dayton units (Area 13).

Thorium-232 was found during installation of drainage features and wells in support of the Operable Unit 1 Record of Decision remedy and subsequent augmentations. The maximum concentration of Th-232 found was 561.7 pCi/g, compared to the cleanup objective of 2.1 pCi/g. Based on the above information, the Department of Energy determined that a **Removal Action (RA)** was warranted and the Core Team agreed to apply the Contingent Removal Action Memorandum. The RA Contaminant of Concern is thorium-232.

The Core Team originally recommended No Further Assessment for PRS 11 based upon data available at that time. However, based upon the above information the Core Team recommends a **Removal Action** for PRS 11.

This Removal Action will be performed under the Action Memorandum for Contingent Removal Actions. Successful completion of the Removal Action will be documented via an On-Scene Coordinator (OSC) Report signed by the Core Team, which will be placed in the Public Reading Room.

A Public Fact Sheet along with this recommendation, signed by the Core Team, will be placed in the Public Reading Room for a 30-day review period. Upon closure of the public review comments, if any, the Fact Sheet will be issued as a final document and made available in the Public Reading Room.

#### CONCURRENCE:

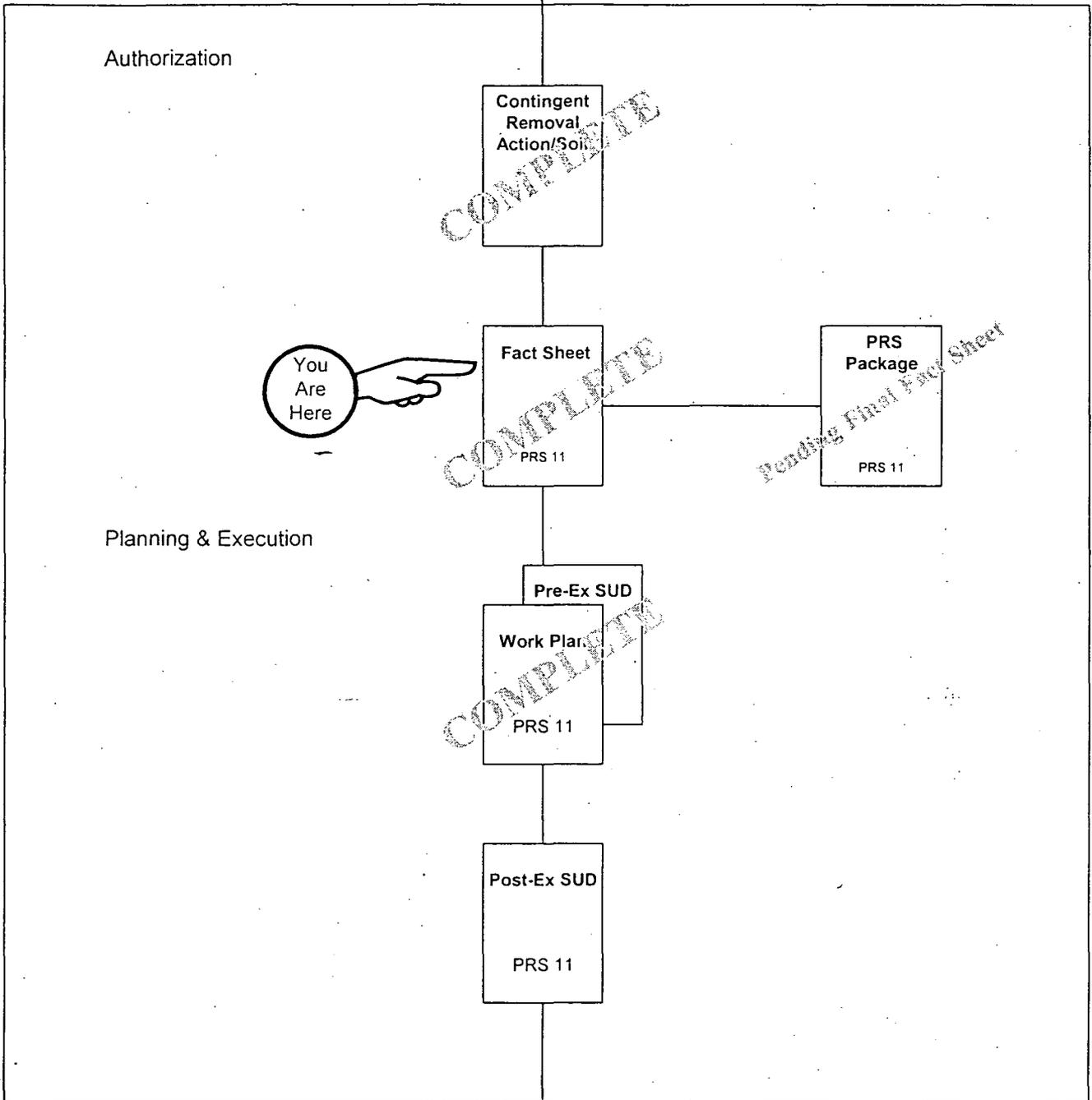
DOE/MCP: Paul Lucas 11/26/03  
Paul Lucas, Remedial Project Manager (date)

USEPA: David P. Seely 11/19/03  
David P. Seely, Remedial Project Manager (date)

OEPA: Brian K. Nickel 11/25/03  
Brian K. Nickel, Project Manager (date)

# PRS 11

PRS 11



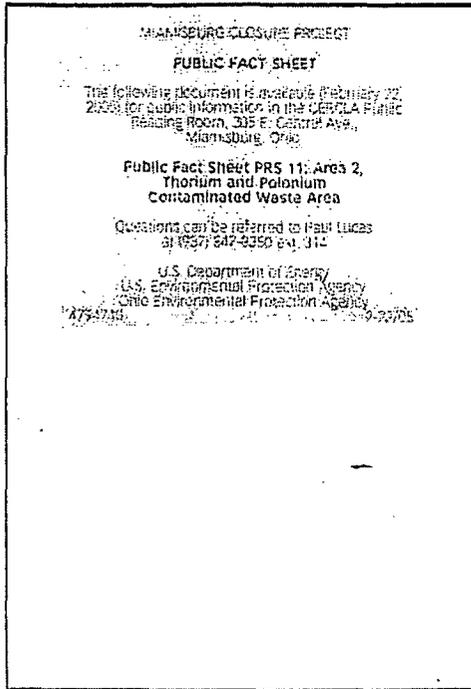
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AFFIDAVIT OF PUBLICATION

State of Ohio

SS: CH2MHILL MOUND

Montgomery County



Before me, the undersigned, a Notary public in and for said County, personally came Tina Sears, who being first duly sworn says she is the Legal Advertising Agent of the DAYTON DAILY NEWS, which she says is a newspaper of general circulation in Montgomery, Clark, Warren, Butler, Clinton, Greene, Preble, Miami, Darke, Mercer, Shelby, Fayette, Logan, Auglaize, and Champaign Counties, and State of Ohio, and she further says that the Legal Advertisement, a copy of which is hereunto attached, has been published in the said DAYTON DAILY NEWS

20 Lines, 1 Time(s), last day of publication

being 2/22/05, and he/she further says

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

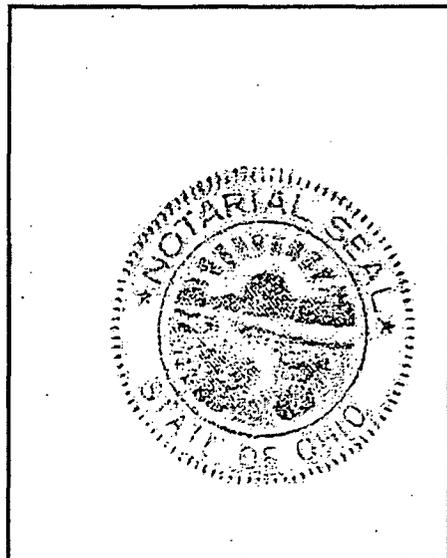
Signed Tina Sears

Sworn or affirmed to, and subscribed before me, this

22 day of February 2005

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

Kella Maxe Notary Public in and for the State of Ohio.



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**The Mound Core Team**  
500 Capstone Circle  
Miamisburg, OH 45342

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April 2005

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

Dear Mr. Bullock:

The Core Team, consisting of the U.S. Department of Energy Miamisburg Closure Project (DOE-MCP), U.S. Environmental Protection Agency (USEPA), and the Ohio Environmental Protection Agency (OEPA), appreciates your comments on the Public Fact Sheet for PRS 11. Attached is our response.

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

Sincerely,

DOE/MCP:	<u>Paul Lucas</u> Paul Lucas, Remedial Project Manager	<u>4/19/05</u> date
USEPA:	<u>Timothy J. Fischer</u> Tim Fischer, Remedial Project Manager	<u>4/19/05</u> date
OEPA:	<u>Brian K. Nickel</u> Brian K. Nickel, Project Manager	<u>4/18/05</u> date

# Response to Public Comments

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From MMCIC  
on PRS 11 Data Package and Fact Sheet  
February, 2005

RE: Letter to Sue Smiley

**Comment 1.** The Contingent Removal Action (CRA) process is not applicable to the PRS 11 drum removal. The Mound CRA EE/CA specifically addressed removal work in six non-complex PRS sites (PRS 153, 266, 273, 276, 412, 421). It also purports to cover "similar PRSs designated for Removal Action (RA) by the Core Team as well as similar sites not yet discovered." Given the complexities of the PRS 11 removal due to its location within OU-1 and adjacent to the landfill, that work is clearly not the type of "simple" removal action contemplated in DOE's CRA guidance. Furthermore, the CRA EE/CA contains no alternative analysis or cost assessment relevant to the PRS 11 removal (see also MMCIC comments 2 and 7, below), and the public will have no opportunity to review or comment on that information as it relates to PRS 11.

The existing Record of Decision (ROD) for OU-1, of which PRS 11 is a part, did not select or authorize waste removal as part of the site remedy. Thus, as MMCIC has stated on numerous previous occasions, the PRS 11 remedy is properly the subject of a ROD amendment or, at a minimum, a full EE/CA pursuant to 40 C.F.R. Section 300.415(b)(4). Given that, this response action is not time-critical (as that term is defined by U.S.EPA), there is no justification for the failure to conduct a full evaluation of remedial alternatives for this site. Treating the PRS 11 work as a Contingent Removal Action will circumvent the requisite public involvement concerning this response action and will constitute a clear violation of CERCLA & 120, the NCP, and the FFA.

## **Response 1.**

The Core Team agrees that a PRS 11 removal action that involves all of the elements suggested throughout these comments is beyond the level of complexity originally envisioned when this process was developed. However, the proposed removal action, bounded in the direction of the landfill is relatively straightforward and the Core Team determined that it was more efficient to move forward with the CRA process, as originally planned. It should be noted that, in the end, the Core Team does not believe that the removal action being conducted, or the associated public participation requirements, have been compromised by using the CRA approach.

Stakeholders were provided an opportunity to comment on the PRS 11 Fact sheet and Work Plan. In fact, MMCIC and City of Miamisburg were provided information copies of the Work Plan before it was approved by the Core Team. In addition, DOE provided regular OU1/PRS 11 status updates, and MMCIC was a contributor to the OU1 Technical Working Group which met regularly to discuss OU1 and PRS 11. Therefore, the Core Team believes there has been public involvement regarding PRS 11 above and beyond what is required by CERCLA.

The Core Team disagrees that the planned removal action at PRS 11 constitutes a fundamental change in the OU1 remedy. Therefore, a ROD amendment is not required. In any event, a ROD amendment or ESD does not require a full range of alternatives to

be evaluated as was completed during selection of the OU1 remedy in the 1995 ROD. It should also be noted that the only difference in the public participation requirements between an ESD and a ROD amendment is the requirement for an official 30 day public comment period and a public meeting. Although a ROD amendment is not required for OU1, the Core Team has determined that a 30 day public comment period and public meeting are appropriate for the proposed ESD given the amount of public interest in OU1. A responsiveness summary addressing all of the comments received during the comment period will be included in the final ESD. Therefore, all of the public participation requirements of a ROD amendment will effectively be met.

**Comment 2.** PRS 11 is within the OU-1 boundary. As such, it presents unique challenges as well as opportunities. We also understand that the only area to be remediated during this project is the PRS 11 Thorium Drum Area (and parts of the Dayton Units as they are discovered with the thorium drums). However, the exact extent of the thorium drum burial and subsequent contamination is not known. As such, the actual contamination may extend further than originally estimated.

It is our belief that PRS 11 wastes could potentially extend into the engineered landfill cap and the historic landfill under the sanitary landfill. We understand that concurrent to the PRS 11 removal action, a professional engineering study is being performed to evaluate alternatives, which would allow for the maximum removal efforts while ensuring worker safety and the integrity of the landfill. As indicated above, this alternatives analysis must be conducted, published, and made available for public comment prior to remedy selection and initiation of site response work.

The Fact Sheet states, "The soil excavation will continue to the extent possible without endangering the integrity of the adjacent landfill." The Fact Sheet is unclear as to whether DOE will continue to excavate PRS 11 wastes (e.g., drum remnants) that may be present beneath the adjacent landfill berm or the landfill itself. The Fact Sheet contains no discussion of options for responding to the presence of PRS 11 wastes that may extend under the landfill structure.

To the extent that Core Team may contemplate an incomplete removal of PRS 11 wastes, such action would be inconsistent with prior Mound cleanups which expanded scope as necessary to remove all contamination discovered during a removal action. It is also inconsistent with the procedure set forth in the Mound CRA Action Memorandum (July 2002), which establishes clear concentration-based cleanup objectives for CRA removals. See CRA Action Memorandum at Table 5.1. The CRA process for the Mound contemplates that soils exceeding these cleanup objectives will be removed and that "sampling and analysis of soil in and at the edges of excavation [will be conducted] to determine the residual contaminant concentration and [to verify] that the residual contaminant concentration is within acceptable limits. CRA Action Memorandum at p.10. The fact that the Core Team contemplates leaving soils in place that exceed the cleanup objectives established in the CRA Action Memorandum is further evidence that the CRA process is inapplicable to the PRS 11 response.

**Response 2.**

The uncertainty noted in the first paragraph "However, the exact extent of the thorium drum burial and subsequent contamination is not known. As such, the actual contamination may extend further than originally estimated." is inherent in environmental restoration. This was noted in the Uncertainties section of the CRA

Action Memo/EE/CA "The major uncertainties are the concentration levels of the contaminants and the extent of contamination (lateral and depth)." You are correct that wastes may extend beneath the landfill structure. However, contaminants or wastes will not be pursued beyond a point that would endanger the integrity of the landfill. That point has been initially established by the OSHA 1.5:1 slopeback requirement. The independent professional engineering study is expected to identify, based on field conditions during the excavation, if there are any ways to excavate beyond the current limit without endangering the integrity of the landfill. The professional engineering study will not result in an alternatives analysis or a change to the removal that would require additional public comment.

The Core Team recognizes that PRS 11 is different from other applications of the CRA in that contamination above cleanup objectives may be left in place. The Core Team determined that it was more efficient to move forward with the CRA, as originally planned, even after considering that thorium contamination or drums may extend under the landfill.

**Comment 3.** From recent OU-1 discussions, there is consensus that the entire OU-1 area has not been adequately characterized. As such, MMCIC would request that the Contaminants of Concern (COC) for the PRS 11 removal be expanded to include volatile organic compounds (VOCs). This request has been made in previous comments and during various OU-1 meetings. MMCIC believes that an important opportunity is being missed if DOE does not analyze soils for VOC contamination in an effort to determine levels and extent of VOC contamination.

**Response 3.**

There is not consensus among all parties involved in the OU1 Technical Work Group that the OU1 area has not been adequately characterized. The Core Team believes the area has been characterized sufficiently to make a final remedial decision for OU1. Furthermore, additional characterization for VOCs would not result in a change to this decision. However, the Work Plan reviewed by MMCIC instructs the workers to be observant for signs of VOCs and sample if there are indications of their presence for purposes of health and safety monitoring and waste disposition.

**Comment 4.** As the OU-1 area has not been adequately characterized, MMCIC requests that additional characterization be performed as appropriate during the PRS 11 removal. This would be especially pertinent if the landfill and engineered cap is breached. One concern with additional sampling has been breaching the integrity of the engineered cap, which was put in place to hold contaminants within the landfill. If, during the course of the PRS 11 excavation, the landfill cap is breached, it would provide an excellent opportunity to perform further sampling for characterization on the extent and location of possible contamination in the OU-1 area. Additional sampling might include soil borings in the materials beneath any cap excavation and borings into the landfill itself once the cap has been removed.

A magnetic survey performed in the OU-1 area found additional anomalies (labeled as B3) within the landfill. Subsequent magnetic surveys performed in the OU-1 area did not include the B-3 anomaly area in the scope of work. This area is a potential for additional contamination, including buried drums. It is likely that while chasing the thorium contamination north, the B-3 anomaly area will be encountered. MMCIC would

encourage further investigation in this area to determine the source of the magnetic anomaly and possible contamination sources.

**Response 4.**

There are no plans to breach the engineered cap or the landfill as part of the PRS 11 removal described in the Fact sheet and work plan reviewed by MMCIC. As you know additional sampling within the sanitary landfill and the associated leachate collection system was performed in the summer of 2004 and that information has been provided to the OU1 Technical Working Group. If chasing thorium leads the excavation into the B-3 anomaly, more information about the source of the anomaly and possible contamination sources will be obtained.

**Comment 5.** It is our understanding that some of the air sparge and soil vapor extraction system (possibly including monitoring and extraction wells) may be removed. We also understand that replacement of these systems will include analysis of the current groundwater contamination so that the replacement systems will be configured for maximum efficiency. Because the pump and treat system was implemented in accordance with the OU-1 ROD, decisions to modify that system must be made in accordance with the post-ROD change procedures set forth in 40 C.F.R. Section 300.435(c)(2). Because the Soil Vapor Extraction (SVE) system was not a remedy selected in the OU-1 ROD, and because that system represents a fundamental change in the scope, performance, and cost of the OU-1 remedy, the OU-1 ROD must be amended to address the need for soil treatment as a portion of the OU-1 remedy. The ROD amendment must not simply be an after-the-fact adoption of the SVE system, but must address and evaluate the full range of feasible alternatives in accordance with 40 C.F.R. Sections 300.430-435. MMCIC and the public are entitled to notice of, and opportunity to comment on, the Core Team's deliberations and decisions concerning soil treatment and modifications to the selected groundwater remedy.

**Response 5.**

The PRS 11 removal as described in the Work Plan is expected to temporarily affect the OU1 ROD remedy (pump-and-treat) for two short periods. These short outages in operation are to change to temporary utilities to be used during the remediation and then to change back to the designed installation utilities. Monitoring Well 415 will need to be abandoned due to the PRS 11 remedial action. Replacement of this monitoring well will be determined by the Core Team. This is not a fundamental change in the scope, performance or cost of the OU1 remedy. MMCIC participated in the OU1 Technical Working Group from August to December 2003 and in the status briefings that have been held since then. MMCIC and other participants on the OU1 Technical Working Group were provided copies of the Core Team recommendation in the OU1 Tech Memo. There will be opportunities for public participation in the Explanation of Significant Differences process.

The Core Team disagrees that the documentation of the existing SVE system as part of the OU1 remedy constitutes a fundamental change in the OU1 remedy. Therefore, a ROD amendment is not required. In any event, a ROD amendment or ESD does not require a full range of alternatives to be evaluated as was completed during selection of the OU1 remedy in the 1995 ROD.

**Comment 6.** MMCIC is concerned about health and safety protection for tenants during the removal activity. Access to several tenant buildings passes directly adjacent

to the PRS 11 site. MMCIC has reviewed the work plan, and understands that alternate access to tenant locations will be provided during the PRS 11 removal action. MMCIC requests the opportunity to work with DOE, and to be kept updated on the removal action, so that tenant safety can be maintained throughout the removal process and the ultimate conclusion of the project will be in compliance with the Mound Reuse Plan.

**Response 6.**

CH2M Hill and the Department of Energy hold safety of the Employees, Public, and Environment in utmost regard. Plans taking this traffic pattern, as well as occupied buildings and parking lots into consideration, are addressed in the PRS 11 Work Plan. It is anticipated that there will be minimal impact to the access road from the south. If the access from the south were to become disrupted an alternate access would be provided.

**Comment 7.** According to the Public Fact Sheet, the DOE plans to excavate, characterize, and dispose of approximately 13,000 cu. yds. of material at a total cost of less than \$4,115,000. This volume of materials removed and the cost estimate cannot be verified by the information included in the work plan. In the Work Plan, dated January 2005, the preferred method appears to be the removal of only 4,500 cubic yards of materials for the total cost of \$2,510,000 using a 1.5:1 slopeback. This option removes less than half of the contamination anticipated in the fact sheet. Another option shown in the PRS 11 Work Plan includes the removal of approximately 8,240 cubic yards of materials while breaching and partial replacement of the landfill cap and liner. The total cost for this option is \$4,970,000. The volumes and costs shown in the PRS Fact Sheet and Work Plan do not appear to be consistent in either methodology for both cost and volume. Volumes and costs from the work plan should be reevaluated to remove the maximum amount of the contamination possible.

**Response 7.**

The Work Plan addresses approximately 12,800 cubic yards of material utilizing a slopeback of 1.5:1 approach, of which approximately 8,300 cubic yards is overburden and approximately 4,500 cubic yards is contaminated. The 12,800 cubic yards was rounded up to the nearest thousand for the estimated volume of material (13,000 cubic yards) contained in the Public Fact Sheet. The Work Plan Appendix J contains a partial breakdown of estimated costs for various considered approaches. These partial cost breakdowns do not include Mound personnel, overhead, contingency, sampling, analysis, and other provided services (e.g., well abandonment, Professional Engineering Evaluation, etc.). The aforementioned compose the differences between the estimated cost in Appendix J "Slopeback" (\$2,514,879) and the estimated cost in the Public Fact Sheet (less than \$4,115,000).

**Comment 8.** The Fact Sheet includes action levels for three constituents – Thorium 232 (2.1 pCi/g), Lead 210 (7.4 pCi/g), and Bismuth 210m (8.3 pCi/g). The first two are consistent with the cleanup objectives in the CRA Action Memo. However, the CRA Action Memo doesn't include any value for Bismuth 210m. Therefore, I suggest we include a new Paragraph 3 in the PRS 11 Fact Sheet comments that reads as follows:

The PRS 11 Fact Sheet includes a concentration-based cleanup objective for Bismuth 210 (8.3 pCi/g). The Mound CRA Action Memorandum contains no cleanup objective for Bismuth 210. The Core Team cannot establish and apply additional cleanup objectives in the absence of an EE/CA presented to the public for comment. Simply announcing new cleanup objectives in Mound Reuse Committee (MRC) meetings does not satisfy the Core Team's obligation to develop removal action cleanup goals consistent with the NCP, particularly 40 CFR Section 300.415. Because the Core Team has identified Bismuth 210 as a COC, and because the CRA Action Memorandum lacks any cleanup objective for Bismuth 210, the CRA process is inadequate to satisfy the Core Team's NCP obligations regarding the PRS 11 cleanup.

#### **Response 8.**

The purpose of the last sentence of the first paragraph of Comment 8 is not clear.

The CRA Action Memo EE/CA identified in Table 5.1 the Cleanup objectives for the most common COCs for the PRSs specifically listed in the Action Memo. The process for identifying Cleanup Objectives for additional COCs was included in the CRA Action Memo/EE/CA: "An Ohio EPA and USEPA approved VSAP, as detailed in the approved work plan, will further define the verification sampling and analysis process, which will include COCs and cleanup objectives. The most common COCs and accompanying cleanup objectives for the PRSs targeted by this document are listed in Table 5.1 (Calculations of the Risk-Based Guideline Values listed in Table 5.1 are included in Appendix C). The list of COCs may be expanded for each PRS and added PRSs, based upon additional information and characterization. The cleanup objectives will be based upon the established background levels and the most recent  $10^{-5}$  risk-based guideline value for the more conservative scenario (construction or office worker). New or modified toxicological factors will also be taken into account for any PRSs that have not been cleaned up. Dependent on the contaminants, leaching to groundwater may need to be addressed.

Additional cleanup objectives for non-radioactive COCs in soil will also take into consideration leaching to groundwater, as well as the risk from contaminated soil. Additional characterization could identify additional COCs or could indicate that one or more of the primary COCs are not present. This will be addressed and documented in the VSAP. The VSAP may also include isolated hot spot criteria; i.e., a verification result that exceeds the cleanup objective by a factor of three indicates a hot spot and the need for further excavation at that location. For PRSs with small areas of contamination (for example less than 1000 ft<sup>2</sup>), hot spot criteria will not be applied. In that case, all samples shall not exceed the agreed upon cleanup objective. If exceedances occur, additional cleanup will occur. Exceptions to the above would require review and approval by the Core Team.

The complete list of COCs for each PRS and any additional PRSs addressed under this action memorandum EE/CA will be documented in the VSAP and approved by the Core Team. To avoid the potential for elevated risk (greater than  $1 \times 10^{-4}$ ) due to multiple contaminants, cumulative risk within a parcel will be considered by the Core Team in establishing the list of COCs and associated cleanup objectives. Additional information to be used in developing the VSAP may become available through additional data, historical review, PRS characterization before or during excavation, etc. Any changes will be presented to the public at the monthly Mound Action Committee and Mound Reuse Committee meetings by DOE/MEMP and BWXTO. "

The Bi-210m cleanup objective included in the Fact sheet is consistent with the process described above.



The Mound Core Team  
500 Capstone Circle  
Miamisburg, OH 45342

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April 2005

Ms. Beth Moore  
Environmental Manager  
City of Miamisburg  
600 North Main  
Miamisburg, Ohio 45342

Dear Ms. Moore:

The Core Team, consisting of the U.S. Department of Energy Miamisburg Closure Project (DOE-MCP), U.S. Environmental Protection Agency (USEPA), and the Ohio Environmental Protection Agency (OEPA), appreciates your comments on the Public Fact Sheet for PRS 11. Attached is our response.

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

Sincerely,

DOE/MCP: Paul Lucas 4/19/05  
Paul Lucas, Remedial Project Manager date

USEPA: Timothy J. Fischer 4/19/05  
Tim Fischer, Remedial Project Manager date

OEPA: Brian K. Nickel 4/19/05  
Brian K. Nickel, Project Manager date

# Response to Public Comments

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From City of Miamisburg  
on PRS 11 Fact Sheet, Feb., 2005  
March 22, 2005

RE: Letter to Sue Smiley

**Comment 1.** The Contingent Removal Action (CRA) process is not applicable to the PRS 11 drum removal. The Mound CRA EE/CA specifically addressed removal work in six non-complex PRS sites (PRS 153, 266, 273, 276, 412, 421). It also purports to cover "similar PRSs designated for Removal Action (RA) by the Core Team as well as similar sites not yet discovered." Given the complexities of the PRS 11 removal due to its location within OU-1 and adjacent to the landfill, that work is clearly not the type of "simple" removal action contemplated in DOE's CRA guidance. Furthermore, the CRA EE/CA contains no alternative analysis or cost assessment relevant to the PRS 11 removal (see also City comments 2 and 5, below), and the public will have no opportunity to review or comment on that information as it relates to PRS 11.

The existing Record of Decision (ROD) for OU-1, of which PRS 11 is a part, did not select or authorize waste removal as part of the site remedy. Thus, as the City has stated on numerous previous occasions, the PRS 11 remedy is properly the subject of a ROD amendment or, at a minimum, a full EE/CA pursuant to 40 C.F.R. Section 300.415(b)(4). Given that, this response action is not time-critical (as that term is defined by U.S. EPA), there is no justification for the failure to conduct a full evaluation of remedial alternatives for this site. Treating the PRS 11 work as a Contingent Removal Action will circumvent the requisite public involvement concerning this response action and will constitute a clear violation of CERCLA & 120, the NCP, and the FFA.

## **Response 1.**

The Core Team agrees that a PRS 11 removal action that involves all of the elements suggested throughout these comments is beyond the level of complexity originally envisioned when this process was developed. However, the proposed removal action, bounded in the direction of the landfill is relatively straightforward and the Core Team determined that it was more efficient to move forward with the CRA process, as originally planned. It should be noted that, in the end, the Core Team does not believe that the removal action being conducted, or the associated public participation requirements, have been compromised by using the CRA approach.

Stakeholders were provided an opportunity to comment on the PRS 11 Fact sheet and Work Plan. In fact, MMCIC and City of Miamisburg were provided information copies of the Work Plan before it was approved by the Core Team. In addition, DOE provided regular OU1/PRS 11 status updates, and MMCIC was a contributor to the OU1 Technical Working Group which met regularly to discuss OU1 and PRS 11. Therefore, the Core Team believes there has been public involvement regarding PRS 11 above and beyond what is required by CERCLA.

The Core Team disagrees that the planned removal action at PRS 11 constitutes a fundamental change in the OU1 remedy. Therefore, a ROD amendment is not required.

In any event, a ROD amendment or ESD does not require a full range of alternatives to be evaluated as was completed during selection of the OU1 remedy in the 1995 ROD. It should also be noted that the only difference in the public participation requirements between an ESD and a ROD amendment is the requirement for an official 30 day public comment period and a public meeting. Although a ROD amendment is not required for OU1, the Core Team has determined that a 30 day public comment period and public meeting are appropriate for the proposed ESD given the amount of public interest in OU1. A responsiveness summary addressing all of the comments received during the comment period will be included in the final ESD. Therefore, all of the public participation requirements of a ROD amendment will effectively be met.

**Comment 2.** It is our belief that PRS 11 wastes could potentially extend into the engineered landfill cap and the historic landfill under the sanitary landfill. We understand that concurrent to the PRS 11 removal action, a professional engineering study is being performed to evaluate alternatives which would allow for the maximum removal efforts while ensuring worker safety and the integrity of the landfill. As indicated above, this alternatives analysis must be conducted, published, and made available for public comment prior to remedy selection and initiation of site response work.

The Fact Sheet states, "The soil excavation will continue to the extent possible without endangering the integrity of the adjacent landfill." The Fact Sheet is unclear as to whether DOE will continue to excavate PRS 11 wastes (e.g., drum remnants) that may be present beneath the adjacent landfill berm or the landfill itself. The Fact Sheet contains no discussion of options for responding to the presence of PRS 11 wastes that may extend under the landfill structure.

To the extent that Core Team may contemplate an incomplete removal of PRS 11 wastes, such action would be inconsistent with prior Mound cleanups which expanded scope as necessary to remove all contamination discovered during a removal action. It is also inconsistent with the procedure set forth in the Mound CRA Action Memorandum (July 2002), which establishes clear concentration-based cleanup objectives for CRA removals. See CRA Action Memorandum at Table 5.1. The CRA process for the Mound contemplates that soils exceeding these cleanup objectives will be removed and that "sampling and analysis of soil in and at the edges of excavation [will be conducted] to determine the residual contaminant concentration and [to verify] that the residual contaminant concentration is within acceptable limits. See CRA Action Memorandum at p. 10. The fact that the Core Team contemplates leaving soils in place that exceed the cleanup objectives established in the CRA Action Memorandum is further evidence that the CRA process is inapplicable to the PRS 11 response.

#### **Response 2.**

The uncertainty noted in the first paragraph "However, the exact extent of the thorium drum burial and subsequent contamination is not known. As such, the actual contamination may extend further than originally estimated." is inherent in environmental restoration. This was noted in the Uncertainties section of the CRA Action Memo/EE/CA "The major uncertainties are the concentration levels of the contaminants and the extent of contamination (lateral and depth)." You are correct that wastes may extend beneath the landfill structure. However, contaminants or wastes will not be pursued beyond a point that would endanger the integrity of the landfill. That

point has been initially established by the OSHA 1.5:1 slopeback requirement. The independent professional engineering study is expected to identify, based on field conditions during the excavation, if there are any ways to excavate beyond the current limit without endangering the integrity of the landfill. The professional engineering study will not result in an alternatives analysis or a change to the removal that would require additional public comment.

The Core Team recognizes that PRS 11 is different from other applications of the CRA in that contamination above cleanup objectives may be left in place. The Core Team determined that it was more efficient to move forward with the CRA, as originally planned, even after considering that thorium contamination or drums may extend under the landfill.

**Comment 3.** The Fact Sheet proposes only a partial removal of the thorium drums with the intent to leave radioactive contamination (presumably well above the clean up objective) in place. The Core Team recommended a Removal Action for PRS 11 in November 2003, not a partial removal action. The Core Team Recommendation should clarify this difference in scope. Additionally, the Core Team had previously re-binned the adjacent PRSs 8, 9, 10 and 12 as Further Assessment. It is common knowledge that the OU-1 area (including PRSs 8 – 12) has not been adequately characterized. The PRS 11 removal action provides an ideal opportunity to gain much needed characterization information. The City expects DOE to take all opportunities during the PRS 11 removal action to fully investigate all of the adjacent PRSs for all of the expected contaminants of concern. Characterization efforts should focus on the B3 anomaly area, under the sanitary landfill and the contents of the sanitary landfill should the PRS 11 excavation infringe on these locations.

**Response 3.**

The Core Team recognizes that PRS 11 is different from other applications of the CRA in that contamination above cleanup objectives may be left in place. The Core Team determined that it was more efficient to move forward with the CRA, as originally planned, even after considering that thorium contamination or drums may extend under the landfill.

The Core Team agreed to re-evaluate PRSs 8-12 as part of a review of the OU1 remedy. These PRSs were never rebinned for Further Assessment. The results of the Core Team evaluation will be provided in the OU1 Technical Memorandum.

The Core Team believes the OU1 area has been characterized sufficiently to make a final remedial decision. Furthermore, additional characterization would not result in a change to this decision. There are no plans to breach the engineered cap or the landfill as part of the PRS 11 removal described in the Fact sheet and work plan reviewed by the City. As you know additional sampling within the sanitary landfill and the associated leachate collection system was performed in the summer of 2004 and that information has been provided to the OU1 Technical Working Group. If chasing thorium leads the excavation into the B-3 anomaly, more information about the source of the anomaly and possible contamination sources will be obtained.

**Comment 4.** The Fact Sheet states that "excavation of approximately 13,000 yd<sup>3</sup> of material (banked and based upon a 1.5:1 slopeback, including overburden), disposal, and verification are expected to cost less than \$4,115,000." This volume and associated cost are not consistent with any of the values provided in the PRS 11 Work Plan (February 2005) or the Independent Government Cost Estimate for Remediation of Operable Unit 1 at the Mound Plant in Miamisburg, Ohio (April 14, 2004) or the Core Team Summary of Recommendations for OU-1 (March 2005). Please explain in detail how the volume and cost numbers were arrived at in this Fact Sheet.

**Response 4.**

The Work Plan addresses approximately 12,800 cubic yards of material utilizing a slopeback of 1.5:1 approach, of which approximately 8,300 cubic yards is overburden and approximately 4,500 cubic yards is contaminated. The 12,800 cubic yards was rounded up to the nearest thousand for the estimated volume of material (13,000 cubic yards) contained in the Public Fact Sheet. The Work Plan Appendix J contains a partial breakdown of estimated costs for various considered approaches. These partial cost breakdowns do not include Mound personnel, overhead, contingency, sampling, analysis, and other provided services (e.g., well abandonment, Professional Engineering Evaluation, etc.). The aforementioned compose the differences between the estimated cost in Appendix J "Slopeback" (\$2,514,879) and the estimated cost in the Public Fact Sheet (less than \$4,115,000).

The Independent Government Cost Estimate (IGCE) for Remediation of Operable Unit 1 at the Mound Plant in Miamisburg, Ohio (April 14, 2004) and the Core Team Summary of Recommendations for OU-1 (March 2005) are independent of the cost estimate in the PRS 11 Fact Sheet. The IGCE estimate was developed by DOE to generally assess the cost of addressing the entire OU1 area using varying assumptions.

**Comment 5.** The Fact Sheet states that "the RA will consist of excavation of the crushed drums (and other debris associated with the Dayton Units if discovered)...". The PRS 11 removal action needs to focus equally on the full removal of both the thorium area and the Dayton Unit burial trench area. Please explain why the Dayton Unit radioactive debris will only be removed if discovered by accident. Will verification sampling cover the entire area of the Dayton Unit burial trench and the thorium drum burial area?

**Response 5.**

The phrase "if discovered" was not meant to imply "the Dayton Unit radioactive debris will only be removed if discovered by accident." Whether the Dayton Unit debris is encountered or not, the verification sampling plan covers both areas.

**Comment 6.** Clearly, as identified most recently in the Savannah River National Laboratory groundwater investigation and the Blackhawk geophysical investigation, VOC contamination overlaps the proposed thorium excavation area. What degree of sampling is planned for VOCs? Will the removal action "chase" any VOC contamination or will the only VOC soil contamination removed be what is commingled with the thorium contamination? Why is known VOC contamination (above the clean up objective) being left behind in this PRS when in other similar PRSs (76 and 87), similar if not lower concentrations of VOCs were required to be removed? The Contaminant of Concern list for PRS 11 should clearly include the VOCs known to be present in the PRS 11 area.

**Response 6.**

Additional characterization for VOCs would not result in a change to the OU1 remedy. The PRS 11 Removal Action will result in any VOC soil contamination commingled with the thorium soil contamination being removed, but there are no plans to "chase" VOC contaminated soil. This is allowable because deed restrictions will be placed on the OU1 landfill area as part of the OU1 remedy, preventing exposure to residual VOC contamination.

**Comment 7.** The Department of Energy's approach to the PRS 11 Removal Action is not comprehensive, nor does it take into consideration the long term legacy tasks and associated costs with performing a partial removal action. Please clearly define the volumes, concentrations and locations of all known contamination (radioactive and VOCs) that the DOE intends to remove and conversely, leave in place. Please thoroughly describe all of the legacy management engineering controls, institutional controls and long term stewardship tasks anticipated for the OU-1 area and the associated life cycle costs.

**Response 7.**

The comprehensive approach for addressing the area encompassing PRS 11 will be documented in the ESD and O&M Plan for the OU1 remedy. The Core Team has considered the long term costs and requirements associated with this approach. The issue of whether or not any PRS 11 contamination is left behind after the removal action has little or no bearing on these long term costs and requirements. The Core Team acknowledges that we do not know the exact volumes, concentrations, and locations of all contamination that will be left in OU1. Due to the fact that the OU1 remedy will effectively manage the risk associated with any remaining contamination in OU1, it is not necessary to know the specific volumes, concentrations, and locations of all contamination.

**Comment 8.** It is our understanding that some of the air sparge and soil vapor extraction system (possibly including monitoring and extraction wells) may be removed. We also understand that replacement of these systems will include analysis of the current groundwater contamination so that the replacement systems will be configured for maximum efficiency. Because the pump and treat system was implemented in accordance with the OU-1 ROD, decisions to modify that system must be made in accordance with the post-ROD change procedures set forth in 40 C.F.R. Section 300.435(c)(2). Because the Soil Vapor Extraction (SVE) system was not a remedy selected in the OU-1 ROD, and because that system represents a fundamental change in the scope, performance, and cost of the OU-1 remedy, the OU-1 ROD must be amended to address the need for soil treatment as a portion of the OU-1 remedy. The ROD amendment must not simply be an after-the-fact adoption of the SVE system, but must address and evaluate the full range of feasible alternatives in accordance with 40 C.F.R. Sections 300.430-435. The City and the public are entitled to notice of, and opportunity to comment on, the Core Team's deliberations and decisions concerning soil treatment and modifications to the selected groundwater remedy.

**Response 8.**

The PRS 11 removal as described in the Work Plan is expected to temporarily affect the OU1 ROD remedy (pump-and-treat) for two short periods. These short outages in operation are to change to temporary utilities to be used during the remediation and

then to change back to the designed installation utilities. Monitoring Well 415 will need to be abandoned due to the PRS 11 remedial action. Replacement of this monitoring well will be determined by the Core Team. This is not a fundamental change in the scope, performance or cost of the OU1 remedy. The City participated in the OU1 Technical Working Group from August to December 2003 and in the status briefings that have been held since then. The City and other participants on the OU1 Technical Working Group were provided copies of the Core Team recommendation in the OU1 Tech Memo. There will be opportunities for public participation in the Explanation of Significant Differences process.

The Core Team disagrees that the documentation of the existing SVE system as part of the OU1 remedy constitutes a fundamental change in the OU1 remedy. Therefore, a ROD amendment is not required. In any event, a ROD amendment or ESD does not require a full range of alternatives to be evaluated as was completed during selection of the OU1 remedy in the 1995 ROD.

**Comment 9.** The Fact Sheet includes action levels for three constituents—Thorium 232 (2.1 pCi/g), Lead 210 (7.4 pCi/g), and Bismuth 210m (8.3 pCi/g). The first two are consistent with the cleanup objectives in the CRA Action Memo. However, the CRA Action Memo doesn't include any value for Bismuth 210m. Therefore, the City suggests that we include a new Paragraph 3 in the PRS 11 Fact Sheet comments that reads as follows:

The PRS 11 Fact Sheet includes a concentration-based cleanup objective for Bismuth 210 (8.3 pCi/g). The Mound CRA Action Memorandum contains no cleanup objective for Bismuth 210. The Core Team cannot establish and apply additional cleanup objectives in the absence of an EE/CA presented to the public for comment. Simply announcing new cleanup objectives in Mound Reuse Committee (MRC) meetings does not satisfy the Core Team's obligation to develop removal action cleanup goals consistent with the NCP, particularly 40 CFR Section 300.415. Because the Core Team has identified Bismuth 210 as a COC, and because the CRA Action Memorandum lacks any cleanup objective for Bismuth 210, the CRA process is inadequate to satisfy the Core Team's NCP obligations regarding the PRS 11 cleanup.

**Response 9.**

The purpose of the last sentence of the first paragraph of Comment 9 is not clear.

The CRA Action Memo EE/CA identified in Table 5.1 the Cleanup objectives for the most common COCs for the PRSs specifically listed in the Action Memo. The process for identifying Cleanup Objectives for additional COCs was included in the CRA Action Memo/EE/CA: "An Ohio EPA and USEPA approved VSAP, as detailed in the approved work plan, will further define the verification sampling and analysis process, which will include COCs and cleanup objectives. The most common COCs and accompanying cleanup objectives for the PRSs targeted by this document are listed in Table 5.1 (Calculations of the Risk-Based Guideline Values listed in Table 5.1 are included in Appendix C). The list of COCs may be expanded for each PRS and added PRSs, based upon additional information and characterization. The cleanup objectives will be based upon the established background levels and the most recent  $10^{-5}$  risk-based guideline value for the more conservative scenario (construction or office worker). New or modified toxicological factors will also be taken into account for any PRSs that have not

been cleaned up. Dependent on the contaminants, leaching to groundwater may need to be addressed.

Additional cleanup objectives for non-radioactive COCs in soil will also take into consideration leaching to groundwater, as well as the risk from contaminated soil. Additional characterization could identify additional COCs or could indicate that one or more of the primary COCs are not present. This will be addressed and documented in the VSAP. The VSAP may also include isolated hot spot criteria; i.e., a verification result that exceeds the cleanup objective by a factor of three indicates a hot spot and the need for further excavation at that location. For PRSs with small areas of contamination (for example less than 1000 ft<sup>2</sup>), hot spot criteria will not be applied. In that case, all samples shall not exceed the agreed upon cleanup objective. If exceedances occur, additional cleanup will occur. Exceptions to the above would require review and approval by the Core Team.

The complete list of COCs for each PRS and any additional PRSs addressed under this action memorandum EE/CA will be documented in the VSAP and approved by the Core Team. To avoid the potential for elevated risk (greater than  $1 \times 10^{-4}$ ) due to multiple contaminants, cumulative risk within a parcel will be considered by the Core Team in establishing the list of COCs and associated cleanup objectives. Additional information to be used in developing the VSAP may become available through additional data, historical review, PRS characterization before or during excavation, etc. Any changes will be presented to the public at the monthly Mound Action Committee and Mound Reuse Committee meetings by DOE/MEMP and BWXTO. "

The Bi-210m cleanup objective included in the Fact sheet is consistent with the process described above.