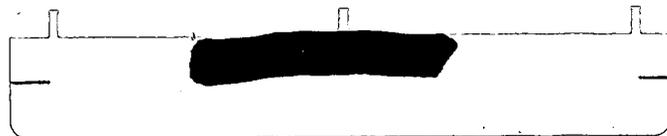


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**SCRAP METAL PILES REMOVAL ACTION
NUMBER 15 WORK PLAN FERNALD SITE
OFFICE FERNALD, OHIO JANUARY 1992**

01-01-92

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ENCLOSURE



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SCRAP METAL PILES

REMOVAL ACTION NUMBER 15
WORK PLAN

FERNALD SITE OFFICE
FERNALD, OHIO

JANUARY 1992

U.S. DEPARTMENT OF ENERGY

CONSENT AGREEMENT REMOVAL ACTION #15

SCRAP METAL PILES

WORK PLAN

FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

January 1992

Prepared by:

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1.0 INTRODUCTION

On September 20, 1991, the U.S. Department of Energy (DOE) and the U.S. Environmental Protection Agency (EPA) jointly signed an Amended Consent Agreement establishing milestones for the implementation of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) response actions at the Fernald Environmental Management Project (FEMP). One such milestone provided that the DOE submit a work plan to U.S. EPA by January 31, 1992 addressing Removal Action No. 15, Scrap Metal Piles. This document provides the referenced work plan for Removal Action No. 15. Once the work plan has been approved by the U. S. EPA, work specific to the Scrap Metal Piles shall commence.

The objective of this removal action is to remove the immediate threat to human health and the environment from the radioactively contaminated scrap metal piles, until final remediation of these areas can be accomplished. To date, a Removal Site Evaluation (RSE) has been initiated and will be completed prior to field activities. Open storage of the radioactively contaminated scrap metal has the potential for contaminant releases to the environment. This removal action will eliminate exposures to human or environmental receptors by eliminating the source term, the scrap metal piles.

The FEMP Scrap Metal Management Program has been intertwined with the Oak Ridge Operations (ORO) Metals Management Program since the time period when the FEMP was a component of the Oak Ridge Complex under the Defense Programs. The scrap metal piles addressed in this removal action represent less than one percent of the total metal included in the Oak Ridge Metals Management (ORMM) Program. Negotiations are underway with DOE-ORO to remove subject scrap metal piles from the ORMM Program.

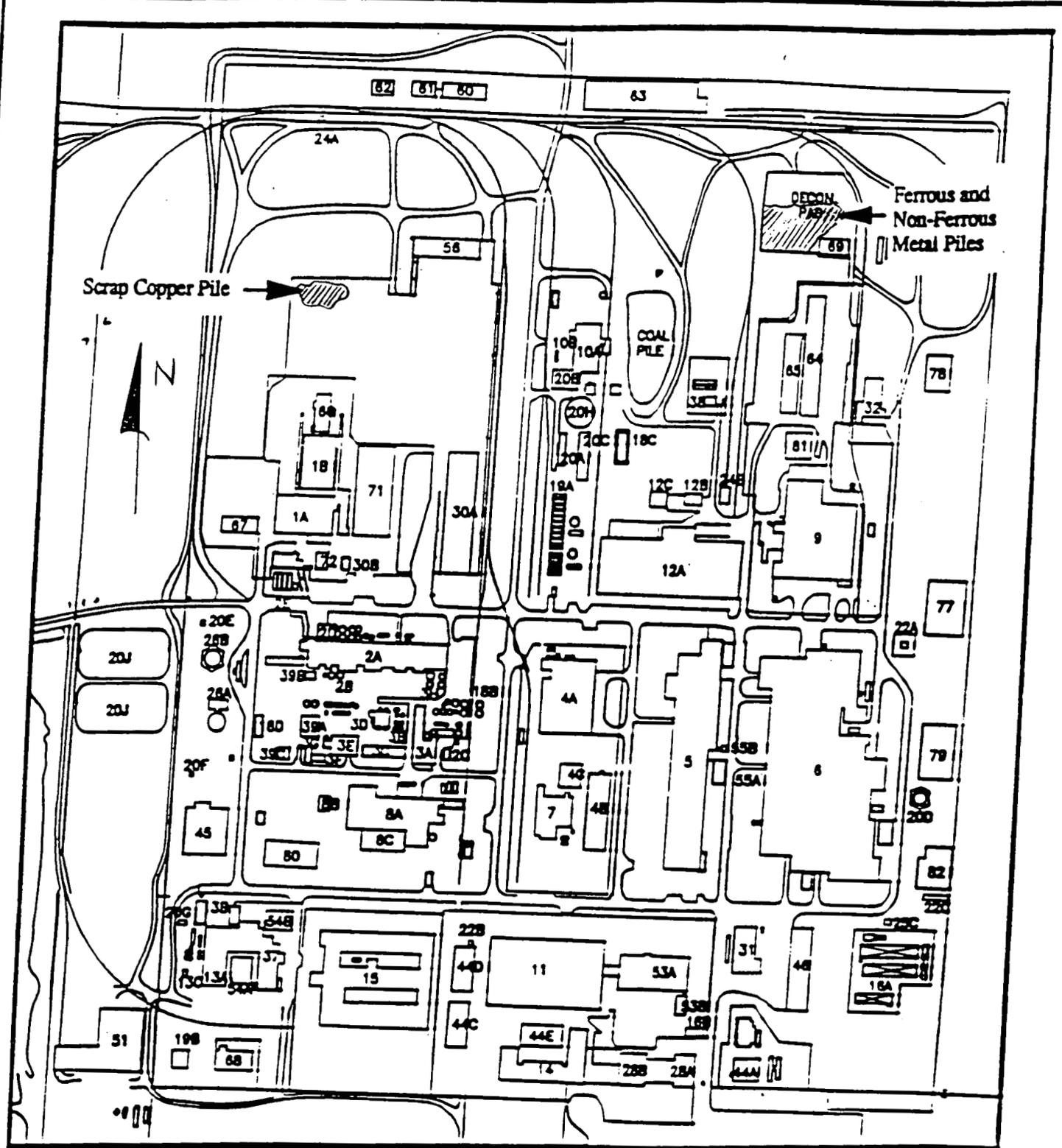
The FEMP scrap metal inventory is classified into two major categories based on material thickness and potential recovery. In May of 1987, the scrap metals on the Decontamination Building (B69) Pad were segregated into recoverable and refuse as part of the Radioactively Contaminated Metal Segregation Project (further information regarding material segregation follows in Section 1.2). The recoverable scrap metals make up the scope of this removal action, whereas the refuse metal is being handled under Removal Action No. 9 - Removal of Waste Inventories, Part I - Current Low-Level Waste Management. The recoverable scrap metal is made up of ferrous and non-ferrous metal on the B69 Pad (in the northeast section of the Production Area), and scrap copper (on the north end of the Plant 1 Pad), see highlighted areas on Figure 1. All scrap metal within the scope of this removal action is considered low-level radioactive material.

The scrap metal piles addressed in this work plan are within the scope of Operable Unit 3 (OU3). OU3 includes the Production area and other identified suspect areas outside the Production area. This removal action is consistent with the final remedial action considered for OU3. The Remedial Investigation/Feasibility Study (RI/FS) for OU3 is currently underway.

Figure 1 - Location of Removal Action 15 Metal Piles

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This work plan utilizes a two phase approach to execute the removal action. Phase I will address the scrap ferrous and non-ferrous metal pile and Phase II will address the scrap copper pile. Specific treatment/disposition will be determined based on the type, size and contamination level of the metal.

The field activities of this removal action will be completed by obtaining commercial support services from a qualified subcontractor with all activities being performed to protect human health and the environment. The scope of the support services will include the processing and off-site disposal or beneficial re-use of approximately 3,300 tons of low-level radioactively contaminated ferrous and non-ferrous scrap metal, and the interim containerization, and processing and beneficial re-use of approximately 1400 tons of low-level radioactively contaminated scrap copper, which together comprise all of the recoverable scrap metal stockpiled at the FEMP.

All project activities will be completed in accordance with the requirements defined in applicable Westinghouse Environmental Management Company of Ohio (WEMCO) procedures, the National Oil and Hazardous Substance Pollution Contingency Plan (NCP), CERCLA, pertinent DOE Orders, and the FEMP Quality Assurance Plan.

1.1 FERNALD SITE BACKGROUND

The FEMP is owned by the DOE and was operated from 1952 until 1989 for the processing of high purity uranium metal. In 1989 facility production operations were placed on stand-by to focus on environmental remediation. The facility was formally shutdown in 1991 after appropriate congressional notifications. Today, remaining workforces at the facility are focused solely on the implementation of environmental restoration related initiatives.

The facility is a 1,050 acre parcel located in southwestern Ohio. In November, 1989, the FEMP was placed on the CERCLA National Priorities List (NPL) as a result of concerns related to past and potential releases of hazardous substances to the environment. Consistent with Section 120 of CERCLA, the DOE and U.S. EPA jointly signed a Consent Agreement in March, 1990 establishing a schedule for the implementation of a sitewide RI/FS and a series of removal actions at the FEMP. This agreement was amended in September, 1991. This removal action work plan has been developed consistent with the terms of the Amended Consent Agreement.

1.2 BACKGROUND OF THE SCRAP METAL PILES

Low-level radioactively contaminated scrap metal is currently stored on the B69 Pad and on the Plant 1 Pad. With the exception of the copper, all of the scrap metal was generated at the FEMP and stockpiled on site. The scrap metal was generated as a result of demolition projects, removal of abandoned equipment, and the upgrade of facilities and vehicles. The copper was generated from the

Cascade Improvements/Cascade Upgrades Project at the DOE Gaseous Diffusion plant at Paducah, Kentucky and was initially sent to the FEMP for shredding and casting. The casting operations were abandoned due to unavailable options for the disposition of the resulting copper ingots with the given uranium concentrations.

As previously mentioned, the scrap metal on the B69 Pad was segregated into recoverable and refuse scrap metal under the Radioactively Contaminated Metal Segregation Project. The recoverable scrap metal was further segregated into ferrous and non-ferrous and within each of these categories, they were again segregated into high-count and low-count. The following are the guidelines established under the Radioactively Contaminated Metal Segregation Project and will be used as definitions for reference throughout this work plan.

RECOVERABLE METAL

Recoverable metal is any metal that is greater than or equal to 1/4-inch thick and requires only minimal processing prior to being made available for beneficial re-use or unrestricted release (I-beams, plate steel, and structural components).

FERROUS METAL

Ferrous metal consists of scrap carbon steel.

NON-FERROUS METAL

Non-ferrous metal within the inventory is generally stainless steel and aluminum.

HIGH-COUNT

Recoverable scrap metal with gross fixed alpha contamination greater than 200,000 disintegrations per minute (dpm)/probe area.

LOW-COUNT

Recoverable scrap metal with gross fixed alpha contamination less than 200,000 dpm/probe area.

REFUSE METAL

Refuse metal is any metal that is less than 1/4-inch thick, is wrapped with non-metallic material (except copper), or material generally requiring extensive efforts to render it available for recovery (a field decision will be employed for this determination). Generally, refuse metal is comprised of thin gauge material, wire, conduit, and piping. Disposal of refuse metal is being addressed via Removal Action No. 9 - Removal of Waste Inventories, Part 1 - Low-Level Waste Management. It is anticipated, based on current shipping schedules, that the scrap metal refuse will be removed from the B69 Pad by June of 1992.

The inventory of scrap metal within the scope of this work plan consists of:

- 238 tons of high-count recoverable ferrous metal
- 2843 tons of low-count recoverable ferrous metal
- 54 tons of high-count recoverable non-ferrous metal
- 139 tons of low-count recoverable non-ferrous metal
- 1370 tons of copper

Even though the refuse was segregated from these scrap metal piles in 1987, with approximately 2400 tons of refuse segregated, the possibility of discovering more refuse metal during the removal action exists. The estimated percentage of non-recoverable metals and other materials anticipated to be encountered during this removal action is less than 10% by volume. Refuse metal segregated during the processing of the scrap metal within the scope of this removal action will be managed in accordance with guidelines established for Removal Action No. 9.

Newly generated scrap metal will be handled under Removal Action No. 17 - Improved Storage. Therefore, no additional scrap metal will be added to the recoverable scrap metal piles within the scope of this removal action.

1.3 SUMMARY OF EXISTING DATA

This removal action was developed as a result of indications that the open storage of the contaminated scrap metal has resulted in contaminant releases to the environment. Elevated uranium concentrations in fugitive airborne releases have been detected near the scrap metal piles. Removable contamination levels on the recoverable, low-count scrap metal are generally less than 1,000 dpm/100cm² beta/gamma, with some total (removable and fixed) contamination exceeding 100,000 dpm/probe area.

Routine air monitoring is performed at defined air monitoring locations to determine radiological emission at the boundary of the FEMP (see Figure 2). The nine perimeter air monitoring locations can be logically grouped into two sections, the northeast cluster -- Numbers 1,2,3,8, and 9 and the south and west sectors -- Numbers 4,5,6, and 7.

Table 1 shows air monitoring data from August of 1989 through July of 1990. For Air Monitoring Location No. 9 (which is closest to the B69 Pad) the airborne uranium readings are about four times higher than the next highest station. This reading (#9) indicates that the scrap metal piles on the B69 Pad are a contributor to airborne releases.

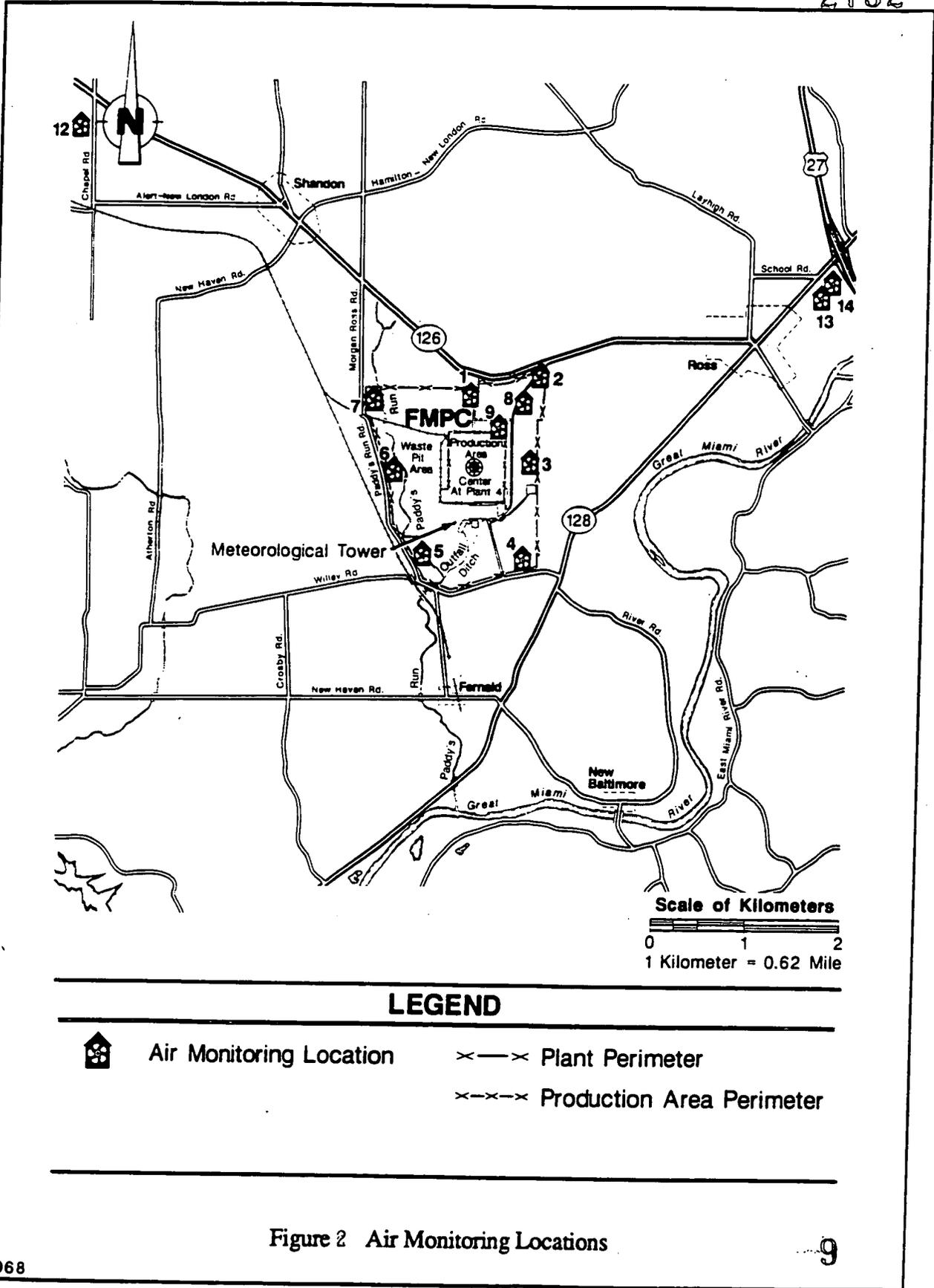


Figure 2 Air Monitoring Locations

TABLE 1 X10 ⁶ Pci/m ³ Total U	
<u>Air Monitoring Locations-Fig.2</u>	<u>8/89 - 7/90</u>
NORTHEAST	
1	180
2	210
3	350
8	380
9	1,420
SOUTH AND WEST	
4	110
5	120
6	190
7	100

1.4 NEED FOR REMOVAL ACTION

The Scrap Metal Piles were established as a removal action in the Amended Consent Agreement signed in September of 1991. In addition, if the eight factors listed in 40 CFR 300.415(b)(2) are examined, the following apply to the Scrap Metal Piles Removal Action.

40 CFR 300.415 (b)(2)(i)

Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants.

This removal action was deemed appropriate due to potential airborne contaminants being carried from the scrap metal piles off-site.

40 CFR 300.415 (b)(2)(v)

Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released.

This removal action was deemed appropriate based on radiological concentrations found on the surfaces of the scrap metal and the possibility of significant weather events causing the contaminants to migrate out of the area.

Based on these two factors and the existing data examined in Section 1.3, it is evident that there is a need to mitigate the potential threat posed by the current conditions found at the scrap metal piles.

1.5 OBJECTIVES OF THE REMOVAL ACTION

The objectives of the removal action are to reduce the potential for contaminant migration to previously uncontaminated areas, and minimize the potential for unacceptable exposures to human or environmental receptors by eliminating the source term, the scrap metal piles, and maximizing off-site beneficial re-use of the scrap metal.

Consistent with the NCP, the removal action shall contribute to the efficient performance of projected final remedial actions. The removal action shall be performed to minimize the potential releases of hazardous substances incidental to removal field operations and in a cost efficient and safe manner consistent with site Standard Operating Procedures and worker health and safety requirements.

2.0 REMOVAL ACTION

The purpose of this work plan is to describe the proposed activities to implement the removal action for the Scrap Metal Piles (Removal Action #15) at the FEMP. The disposition of the recoverable scrap metals (ferrous, non-ferrous and copper) constitute this removal action. This removal action will be accomplished in two phases. Phase I will involve the ferrous and non-ferrous scrap metal piles located on the B69 Pad. Phase II will involve the scrap copper pile located on the north end of the Plant 1 Pad.

The scrap metals under consideration within this removal action are considered to possess the properties that make it attractive for resource recovery. Disposition of the scrap metals will emphasize recycling or beneficial re-use of the materials. Recycling or beneficial re-use will include both unrestricted release of the materials as allowed by DOE Order 5400.1 and 5480.11, or controlled re-use in place of virgin resources that may eventually become radioactively contaminated and thus classified as low-level waste. If additional refuse metal is discovered throughout the progression of the removal action, it will be managed by the Subcontractor in accordance with guidelines established for Removal Action No. 9.

To accomplish the objectives of this removal action, the DOE is issuing two separate requests for solicitation of commercial services via a Request For Proposal (RFP) - one for the ferrous and non-ferrous scrap metal pile (Phase I), and another for the scrap copper pile (Phase II). The RFP for Phase I has been issued and proposals were received from interested bidders on December 20, 1991. The proposals are presently being reviewed by a Source Evaluation Board.

The scope of work for the services potentially involves the receipt, transportation, necessary interim storage, processing, packaging, and disposition or beneficial re-use of the low-level radioactive scrap metal piles described above. The Subcontractor shall have the capability and experience to perform services relating to the removal action work plan which may include but are not limited to on-site (or off-site) processing

such as: reduction, precipitation, carbon filtration, oxidation, oil/water separation, ion exchange, compacting, transportation, processing, smelting, and disposition at DOE-approved facilities. The Subcontractor will also perform all activities with an emphasis on protection of human health and the environment.

Based on the existing data, it is evident that elevated levels of airborne uranium have been found in the immediate vicinity of the scrap metal piles on B69 Pad. Based on a review of the time required to design, procure and install a tension support structure, or similar protective covering over these scrap metal piles, the implementation of the RFP for Phase I will better facilitate their disposition. The potential threat from the scrap copper pile, on the north end of the Plant 1 Pad, will be mitigated by the containerization of the material by September 30, 1992.

If the award of the RFP for Phase I does not occur, due to contractual difficulties, prior to the implementation of improved storage for future scrap metal under Removal Action No. 17 - Improved Storage of Soil and Debris, the disposition of the recoverable scrap metal piles on the B69 Pad will be handled under Removal Action No. 17.

2.1 PHASE I

As mentioned above, the solicitation for the Phase I work is in progress. The scope of work for the solicitation provides final disposition with an emphasis on beneficial re-use of the recoverable scrap metal inventory. The specific content of the successful proposal will not be available until the contract is awarded. Per the requirements of the RFP, the Subcontractor must be fully operational within 45 days after the contract is awarded. The DOE cannot presume all aspects of the proposal but it is conceptualized to consist of further segregation, decontamination, treatment/processing, unrestricted material release, restricted re-use, and/or low level waste disposal.

It is anticipated that the scrap ferrous and non-ferrous metal on the decontamination facility pad (B69) will be further sorted by the successful bidder by material type and contamination levels. Materials found to be salvageable will be decontaminated utilizing existing FEMP Standard Operating Procedures as a guideline for the Subcontractor. Any waste materials generated incidental to performing the operations of bulk packaging and decontamination will be treated/containerized. Any scrap metal processed for beneficial re-use will be packaged and transported by the Subcontractor. The following tasks are called out in the RFP for Phase I:

Refuse materials segregated during the processing of the scrap metal within the scope of this removal action will be managed by the Subcontractor in accordance with guidelines established for Removal Action No. 9. The Subcontractor shall be responsible for shipping of the refuse materials.

All activities performed under this removal action will be coordinated with surrounding FEMP activities to minimize the potential for any interference and to protect human health and the environment. Prior to beginning work on the FEMP site, the Subcontractor shall generate, for DOE approval, a task specific work plan, including a detailed description of the planned implementation activities, a time schedule for those actions, personnel, equipment requirements and site restoration.

All processing sites, equipment, and interim storage facilities must be wholly owned and operated by the Subcontractor. No waste will be transported from the FEMP for storage or processing at a lower-tier subcontractor's facility.

If the processing of the recoverable scrap metal is to be performed on the FEMP site, the scrap processing site will be in the general vicinity of the metal piles, thus minimizing major material movement.

If the processing of the recoverable scrap metal is to be performed off the FEMP site, the Subcontractor will package, identify, label, and document the waste for transport according to all applicable regulations. The Subcontractor will maintain a complete inventory of all metals processed and removed from the FEMP.

Upon completion of the work, the Subcontractor will be responsible for restoring the site, where its equipment was installed, to its original condition. All restoration work shall be completed in full accordance with current FEMP standard site engineering specifications, including general conditions, seeding, concrete, and asphalt work, if required.

2.2 PHASE II

Phase II will consist of two activities, the first activity will be the containerization of the scrap copper pile, on the north end of the Plant 1 Pad, and the second activity will consist of issuing a RFP for the processing and beneficial re-use of the scrap copper.

The containerization of the scrap copper pile will be completed by DOE by September 30, 1992. It is anticipated that the scrap copper will be placed into sea-land containers and will be stored on-site pending disposition under the RFP for Phase II.

The successful bidder's work proposal for the second activity in Phase II is conceptualized to consist of segregating the containerized copper and then melting the segregated copper into ingots. The specific content of the successful proposal will not be available until the contract is awarded. The following tasks are called out in the RFP for Phase II:

Any waste materials generated incidental to performing the activities under Phase II of this removal action will be treated/ containerized.

Refuse materials segregated during the processing of the scrap copper within the scope of this removal action will be managed by the Subcontractor in accordance with guidelines established for Removal Action No. 9. The Subcontractor shall be responsible for shipping of the refuse materials.

All activities performed under this removal action will be coordinated with surrounding FEMP activities to minimize the potential for any interference and to protect human health and the environment. Prior to beginning work on the FEMP site, the Subcontractor shall generate, for DOE approval, a task specific work plan including a detailed description of the planned implementation activities, a time schedule for those actions, personnel, equipment requirements and site restoration.

All processing sites, equipment, and interim storage facilities must be wholly owned and operated by the Subcontractor. No waste will be transported from the FEMP for storage or processing at a lower-tier subcontractor's facility.

If the processing of the recoverable scrap copper is to be performed on the FEMP site, the scrap processing site will be in the general vicinity of the copper pile, thus minimizing major material movement.

If the processing of the recoverable scrap copper is to be performed off the FEMP site, the Subcontractor will package, identify, label, and document the waste for transport according to all applicable regulations. The Subcontractor will maintain a complete inventory of all metals processed and removed from the FEMP.

Upon completion of the work, the Subcontractor will be responsible for restoring the site, where its equipment was installed, to its original condition. All restoration work shall be completed in full accordance with current FEMP standard site engineering specifications, including general conditions, seeding, concrete, and asphalt work, if required.

3.0 PROGRAM MANAGEMENT

The following activities will be undertaken to provide planning and management for the removal action.

3.1 RESPONSIBILITIES

The DOE is the lead agency for this removal action and will coordinate the execution of this removal action. As stated in the Amended Consent Agreement under CERCLA 120 and 106(a), if the DOE determines under Section 104 that any activities or work being implemented under this Amended Consent Agreement may create an imminent threat to human health or the environment from the release or threat of release of hazardous substance, pollutant, contaminant, or hazardous constituent, it may stop any work or activities for such period of time as needed to respond and take whatever action is necessary to abate the danger. Reporting to the U.S. EPA will be in accordance with Section XXIII of the Amended Consent Agreement.

U.S. EPA shall review, comment and approve the work plan and follow progress through meetings/site visits and the Amended Consent Agreement progress reports.

WEMCO, the Maintenance and Operations Contractor at the FEMP, will coordinate, manage, implement, monitor activities and prepare all reports associated with the removal action in a manner consistent with the DOE and regulatory requirements and guidance.

This removal action shall be managed by the WEMCO/DOE OU3 team to ensure compatibility with the final remedial action(s) selected for OU3.

Ohio EPA, while not a signature party to the Amended Consent Agreement, maintains a significant role in the successful implementation of removal actions at the FEMP. Ohio EPA shall review and comment on the work plan and follow progress through meetings/site visits and the Amended Consent Agreement progress reports.

3.2 TRAINING

All personnel directly involved in the planning and implementation of this removal action will be trained in accordance with 29 CFR 1910.120, the standard operating procedures for the work involved, and with the requirements of the approved work plan. In addition, all personnel will successfully complete the required safety training sessions set forth by WEMCO including, but not limited to, radiation worker training, nuclear criticality training, respirator training and fit testing, and FEMP procedures developed and approved to implement this removal action.

3.3 SCHEDULE

Due to the fact that this removal action involves on-going procurement via RFPs, with proposals currently in review, schedules are proprietary at this time and cannot be finalized until the contracts for each phase are awarded. It is anticipated that the contract for Phase I will be awarded by June of 1992.

Table 2 - Key Milestones of Proposed Project Schedule

	Due Date ^(a)
Anticipated Schedule Submittal, Phase I ^(b)	6/92
Initiate Phase IIA, Containerization	9/92
Anticipated Notification of RFP for Phase IIB, Final Disposition	12/92
Initiate Phase IIB, Final Disposition	^(c)

^(a) Assuming EPA approval by April 1, 1992

^(b) Assuming award of contract

^(c) Schedule will be determined after the Phase II RFP is awarded

Phase I will be considered complete when the recoverable scrap metal piles, designated for Phase I of this removal action, are containerized, processed, decontaminated, and shipped off-site, as required. Phase IIA will be considered complete when scrap copper designated for this removal action is containerized. Phase IIB will be considered complete when the containerized copper is processed, decontaminated, and shipped off-site, as required. The schedules for completing Phases I and IIB will be provided to EPA, for review, after award of the respective contracts.

4.0 SAMPLING AND ANALYSIS PLAN

Sampling efforts performed in conjunction with the packaging and disposal of scrap metal on the B69 Pad will be performed to characterize waste residues collected from the pad and/or generated during processing and decontamination for disposal consistent with both on-site procedures and regulatory compliance. A project specific Sampling and Analysis Plan will be provided by the Subcontractor prior to initiating field activities, to be reviewed and approved by the DOE. It is anticipated that the Sampling and Analysis Plan will include TCLP analysis, full HSL analysis, and full radiological analysis.

5.0 QUALITY ASSURANCE PLAN

This removal action will be conducted in accordance with the overall quality assurance program at the FEMP as described in the site Quality

Assurance Plan. The Quality Assurance Plan is based on the criteria specified in ASME NQA-1, Federal EPA Guidelines QAMS-005/80 and DOE Orders 5700.1 and 5400.1. Detailed requirements are implemented by the WEMCO Site Policies and Procedures Manual, FMPC-2054, by WEMCO Departmental Procedures, and Topical Manuals. Sample and analysis activities will be conducted consistent with the RI/FS QAPP. The U.S. EPA is in the process of reviewing a draft Sitewide Quality Assurance Project Plan (QAPP) covering all sitewide sampling and analysis activities. Upon approval, remaining sampling and analysis activities will be conducted consistent with the Sitewide QAPP. A project specific Quality Assurance Plan will be provided by the Subcontractor prior to initiating field activities.

6.0 HEALTH AND SAFETY PLAN

This removal action will be conducted in accordance with the provisions of the FEMP site-wide health and safety program (WEMCO June 1990). Consistent with this program and 29 CFR 1910.120, a task specific health and safety plan will be prepared addressing the proposed work activities. The task specific health and safety plan will incorporate any changes resulting from the final approval of the work plan. A copy of the Health and Safety Plan will be finalized prior to field mobilization and will be made available to EPA upon request at that time. The Health and Safety Plan identifies, evaluates, and controls all safety and health hazards associated with this removal action. In addition, it provides for emergency response for hazardous operations. A draft Health and Safety Plan is available upon request. A project specific Health and Safety Plan will be provided by the Subcontractor prior to initiating field activities.



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