FERNALD Closure Project

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Treatment Plan for the Removal of Tetrachloroethylene from Contaminated Soil Obtained from the Remediation Area 6 Fire Training Facility

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1.0 INTRODUCTION

This treatment plan describes the enhanced soil venting that will be used to remove tetrachloroethylene (PCE) from contaminated soil initially excavated from the Fire Training Facility (FTF), staged at AR3-007 and later moved to Quonset Hut #1, which is located in Remediation Area 6, north of Remediation Area 3B, in the former production area of the Fernald site (Figure 1-1). It also describes the sampling and analysis that will be performed to demonstrate successful treatment of the soil. The Department of Energy (DOE) owns the Fernald site, and its Fernald Closure Project (FCP) is scheduled to complete all restoration activities in 2006. Successful treatment of the PCE-contaminated soil will allow the treated soil to be placed in the On-Site Disposal Facility (OSDF).

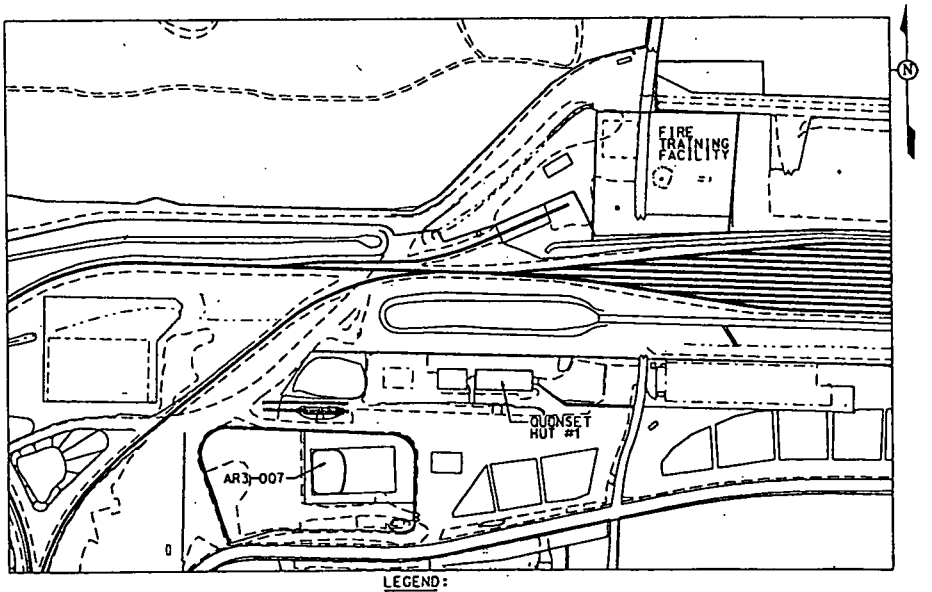

FIGURE 1-1. Location of Quonset Hut No. 1, the Fire Training Facility and Stockpile AR3-007

1.1 Background Information

Subsurface sediment deposits below the Fernald site have been described in detail in the OU5 RI/FS documents (DOE 1995) and a geotechnical investigation report (DOE 1998). Briefly, the stratigraphic column under the site is generally fill, till deposits, sand and gravel deposits of the Great Miami Aquifer, and carbonate bedrock. The emphasis here is on the glacial deposits, as these are the impacted materials being addressed by the soil treatment plan.

The till deposits are comprised primarily of a carbonate clay matrix enclosing muddy stream deposits. The stream deposits are primarily silt and sand with minor gravel and are continuous along the channel traces (primarily northeast to southwest), but discontinuous over broad lateral areas. When present, most of the channel deposits lie between a basal gray clay and overlying brown clay. The brown clay directly overlies the gray clay where the stream deposits are absent.

Soil staged at Quonset Hut #1 is comprised of the brown and gray glacial deposits that were removed during the excavation of the FTF and initially staged at AR3-007 (Figure 1-1). During the predesign investigation for the FTF, the soil was shown to contain PCE at levels above the waste acceptance criteria (WAC) for the OSDF. Detailed information on the sampling history of the soil can be found in the Implementation Plan for Area 6, Solid Waste Landfill and Fire Training Facility (DOE 2003a) and Variances 131 and 144 to the Project Specific Plan for Area 3A/4A Excavation Characterization and Precertification (DOE 2002).

In the spring of 2003, approximately 400 cubic yards (yd^3) of soil were excavated from the PCE-impacted soil area at the FTF (Figures 3-11 and 3-13 in DOE 2003a) and staged at AR3-007. The soil staged at AR3-007 will be moved into Quonset Hut #1 in late September of 2003 and stockpiled inside concrete "jersey" barriers that allow pedestrian access around the entire perimeter of the pile. The footprint of the pile will be approximately 15 by 80 feet, with a maximum height of 8 to 10 feet.

1.2 Contamination Levels

Prior to excavating the soil, over 60 samples were collected and submitted for PCE analysis to bound the vertical and lateral extent of the contamination (Appendix D in DOE 2003a), and three PCE results exceeded the OSDF WAC limit of 128 mg/kg (Table 3-4 in DOE 2003a). On June 30, 2003, approximately two months after the soil was excavated and placed in AR3-007, 24 soil samples were collected from 8 locations under Variance 131 to the Project Specific Plan for Area 3A/4A Excavation Characterization and Precertification (DOE 2002) and analyzed for total PCE. PCE results (Table 1-1) were all below the OSDF WAC, although the northeast (NE) and southwest (SW) quadrants of the stockpile had values well above the Resource Conservation and Recovery Act (RCRA) 20-times rule. Therefore, 5 samples were collected from the NE and SW quadrants on July 9, 2003 under Variance 144 to the Project Specific Plan for Area 3A/4A Excavation Characterization and Precertification (DOE 2002) and submitted for analysis by the toxicity characteristic leaching procedure (TCLP). The TCLP results in Table 1-2 indicate that a single sample exceeded the PCE TCLP limit of 0.7 mg/L.

Using the average value for the PCE concentrations in Table 1-1 (6.24 mg/kg), the total mass of PCE that is likely to be released in the off gas during treatment of the 400 yd^3 of soil is estimated to be 3 kg (or approximately 6.6 pounds). This estimate is based on a soil density of 1,227 kg/yd^3 (e.g., 6.24 mg/kg* 1,227 kg/yd^3 * 400 yd^3 = 3,062,592 mg = 3.01 kg of PCE).

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Table 1-1

Analytical Results For Soil Samples Collected On June 30, 2003

Sample ID	Depth (fbgs)	PCE (mg/kg)
AR3-007-NE1	1.25	0.550
AR3-007-NE1	2.25	6.60
AR3-007-NE1	3.25	2.36
AR3-007-NE2	1.25	16.9
AR3-007-NE2	2.25	28.7
AR3-007-NE2	3.25	16.7
AR3-007-NW1	1.25	1.32
AR3-007-NW1	2.25	1.54
AR3-007-NW1	3.25	4.02
AR3-007-NW2	1.25	1.06
AR3-007-NW2	2.40	0.425
AR3-007-NW2	3.25	1.30
AR3-007-SE1	1.25	<0.250
AR3-007-SE1	2.40	6.84
AR3-007-NE1	3.25	2.26
AR3-007-SE2	0.95	4.20
AR3-007-SE2	1.35	5.15
AR3-007-SE2	1.75	1.43
AR3-007-SW1	1.25	15.3
AR3-007-SW1	2.40	6.38
AR3-007-SW1	3.25	14.0
AR3-007-SW2	1.25	0.600
AR3-007-SW2	2.25	3.02
AR3-007-SW2	3.25	8.83

Table 1-2

TCLP Results For Soil Samples Collected On July 9, 2003

Sample ID	Depth (fbgs)	PCE (mg/L)
AR3-007-NE2	1.25	0.597
AR3-007-NE2	2.25	1.27
AR3-007-NE2	3.25	0.428
AR3-007-SW1	1.25	0.383
AR3-007-SW1	3.75	0.297

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1.3 Evaluation of Treatment Technologies

As discussed in the Treatment Plan for the Removal of Trichloroethylene from Contaminated Soil Obtained from Remediation Area 3A and Staged in Quonset Hut No. 1 (DOE 2003b), enhanced soil venting is the best option for treating the PCE-contaminated soil. Enhanced soil venting removes PCE from soil by pulling the pore air and water out of the soil, via perforated pipe in the soil by attaching the pipes to a vacuum blower (Figure 1-2). This simple technology is well suited for the soil pile in Quonset Hut No.1, because access to the pile is good and minimal energy needs are required to run the blower. By installing a sufficient number of pipes and a large vacuum blower, large air volumes can be removed from the soil pile and VOC air concentrations can be maintained below regulatory limits. The simplicity of the system allows for monitoring of air samples prior to and after they pass through the blower. Air samples will be collected to monitor the decreasing levels of PCE in the soil pile and ensure that the off gas complies with regulatory requirements.

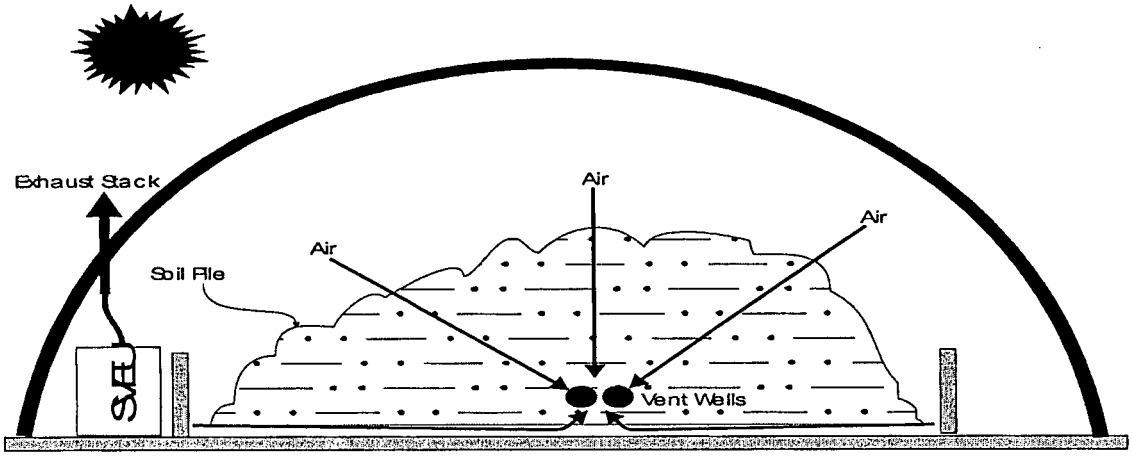

Figure 1-2. Schematic Representation of SVE Treatment System for Soil Pile in Quonset Hut No. 1

1.4 Regulatory Drivers

Applicable, relevant and appropriate requirements (ARARs) are provided in Attachment I. Successful treatment of the soil requires that post-treatment soil samples put through the TCLP test release less than 0.7 mg/L of PCE (40 CFR 261.24). By pulling large air volumes through the soil pile, organic compounds in the off-gas emissions will be maintained below the 15 pounds per day permit-exemption requirement (OAC 3745-31-03, Paragraph D). For example, the maximum estimated mass of PCE in the soil (3 kg or 6.6 pounds; Section 1.2) would not exceed the exemption requirement if it were released in a single day. (Note that the release of all solvent in a single day is not possible, based on the physicochemical mechanisms involved in the passive soil venting process.) Analytical data on gas samples collected during the identical treatment process carried out with soil contaminated with trichloroethylene indicate that maximum daily gas emissions contain less than 1 pound of organic vapors (Table 1-1 in Verification Report for the Removal of Trichloroethylene from Contaminated Soil Obtained from Remediation Area 3A; DOE 2003c).

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2.0 SYSTEM DESIGN

Implementation of enhanced soil venting for the excavated soil from the FTF could be successfully performed using any number of configurations. The selected design, configuration and treatment location is identical to that used to treat TCE-contaminated soil during the summer of 2003. Therefore, the reader is referred to the Treatment Plan for the Removal of Trichloroethylene from Contaminated Soil Obtained from Remediation Area 3A and Staged in Quonset Hut No. 1 (DOE 2003b) for details on the treatment system design and equipment configuration.

3.0 TREATMENT PROCESS

3.1 Site Preparation and Installation

The vacuum units proposed for the treatment process are small and do not have any special mounting requirements other than being level. Since the SVEU will be located inside the Quonset Hut, weather protection will not be an issue. The Roots-Dresser™ Frame 22 rotary blower is driven by a 1.5-HP 240/480 VAC 3f motor. The motor draws 2.5 amps at 480 VAC under normal operating conditions, which is 2.1KW. Power requirements will be at a maximum when the unit is initially started and should not exceed 10KW. Ample power is available at Quonset Hut No. 1 to meet these requirements.

3.2 Startup Testing

Prior to connecting the unit to the generator, the vacuum pump will be turned over by hand to insure all components rotate freely. Once the unit is connected to the generator and prior to connection to the wellhead assemblies, the blower will be bumped a few revolutions to verify proper rotation direction. Once this verification process is complete, the unit should be operated under "no-load" conditions for a couple of minutes to check for vibrations and abnormal noises. Afterwards, the unit can be connected to the wellhead assemblies and prepared for startup. Once the valve configuration has been set to pump the desired well, the unit may be started. The unit should initially be started under "no-load" conditions with the make-up air valve open. Vacuum should then be applied slowly to the wellhead by decreasing the amount of make-up air supplied to the unit until the desired flow rate is achieved.

3.3 System Maintenance

Maintenance requirements for the rotary SVE unit will be conducted on the unit prior to initial startup. This will include changing the oil, lubricating the shaft bearings, and verifying belt tightness. The recommended oil for operating temperatures in excess of 90°F is Supplemental Accident Expense (SAE) No. 50, and the rotary unit requires 6.1 ounces of oil for proper lubrication. The manufacturer's recommendation for complete oil change is every 1000 operating hours. Shaft bearings should be greased weekly with NLGI #2 premium grade, high temperature grease.

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3.4 Proposed Monitoring Approach

PCE-contaminated soils from the FTF will be treated using enhanced venting – a form of active soil vapor extraction. Solvents are removed by placing horizontal vent wells into the soil pile and extracting air using a standard vacuum blower. A secondary, but significant, advantage of this approach is that active air extraction from the interior of the pile serves as a collection system for low cost monitoring of the progress of cleanup – the system itself provides an integrated measurement of the presence and concentration of VOCs in the pile. Because of the fixed size of the pile, the simple boundary conditions, and high degree of process control, theoretically based criteria can be developed for off-gas and rebound concentrations to indicate when the process is relatively complete. This should reduce and optimize the number of confirmatory point soil samples for TCLP analysis. A detailed description of the air monitoring approach is given in the Treatment Plan for the Removal of Trichloroethylene from Contaminated Soil Obtained from Remediation Area 3A and Staged in Quonset Hut No. 1 (DOE 2003b).

Initial air samples will be collected in tedlar bags and sent to an off-site laboratory for Analytical Support Level (ASL) B analysis of VOAs on the Method 8260B list. Eight samples will be collected on the first day of operations (first 4 at half-hour intervals second 4 at hour intervals) to ensure that the maximum VOA concentrations are captured by the samples. These analytical results will be used to support the less than 15 pounds of VOC emissions per day (OAC 3745-31-03, Paragraph D).

3.5 Waste Streams

Waste streams generated from the treatment process consist of the off gas, condensate collected in the moisture separator, and the treated soil. Off gas will be directly discharged to the atmosphere, as the organic compounds in the off-gas emissions will be maintained below the 15 pounds per day permit-exemption requirement (OAC 3745-31-03, Paragraph D). Compliance with the exemption requirement will be demonstrated through the collection of eight air samples on the first day of operations. The precise number of air samples that will be collected to monitor the decreasing gas concentrations is unknown, but this has no effect on the outcome of the treatment process, as TCLP samples must be taken to verify successful treatment.

Condensate collected in the moisture separator will be sent to Phase II treatment at the Advanced Wastewater Treatment Facility. The treated soil will be sampled for TCLP analysis when monitoring parameters indicate that PCE levels have decreased to a level that results in a high probability of the soil samples passing the TCLP test. If the soil samples should fail the TCLP test, then treatment will continue and another batch of TCLP samples will be collected to verify successful treatment. After demonstrating successful treatment of the soil, the soil will be hauled to the OSDF for disposal.

3.6 Verification Samples

The composite off-gas monitoring approach described in the Treatment Plan for the Removal of Trichloroethylene from Contaminated Soil Obtained from Remediation Area 3A and Staged in Quonset Hut No. 1 (DOE 2003b) provides a powerful tool to track cleanup. Thus, the goal of verification sampling is to confirm that the initial hot spots meet TCLP levels. When off-gas monitoring parameters indicate the soil is likely to pass TCLP, three sampling locations will be identified in each quadrant of the soil pile and 12 samples will be collected and analyzed using TCLP methods to confirm that the toxicity hazard has been removed from the soil prior to its disposition to the OSDF. If one or more samples fail TCLP, the off-gas monitoring parameters will be reevaluated and treatment will continue until the reevaluated parameters indicate another round of TCLP sampling is warranted. This iterative process will continue until all soil samples collected during a given sampling event pass the TCLP test.

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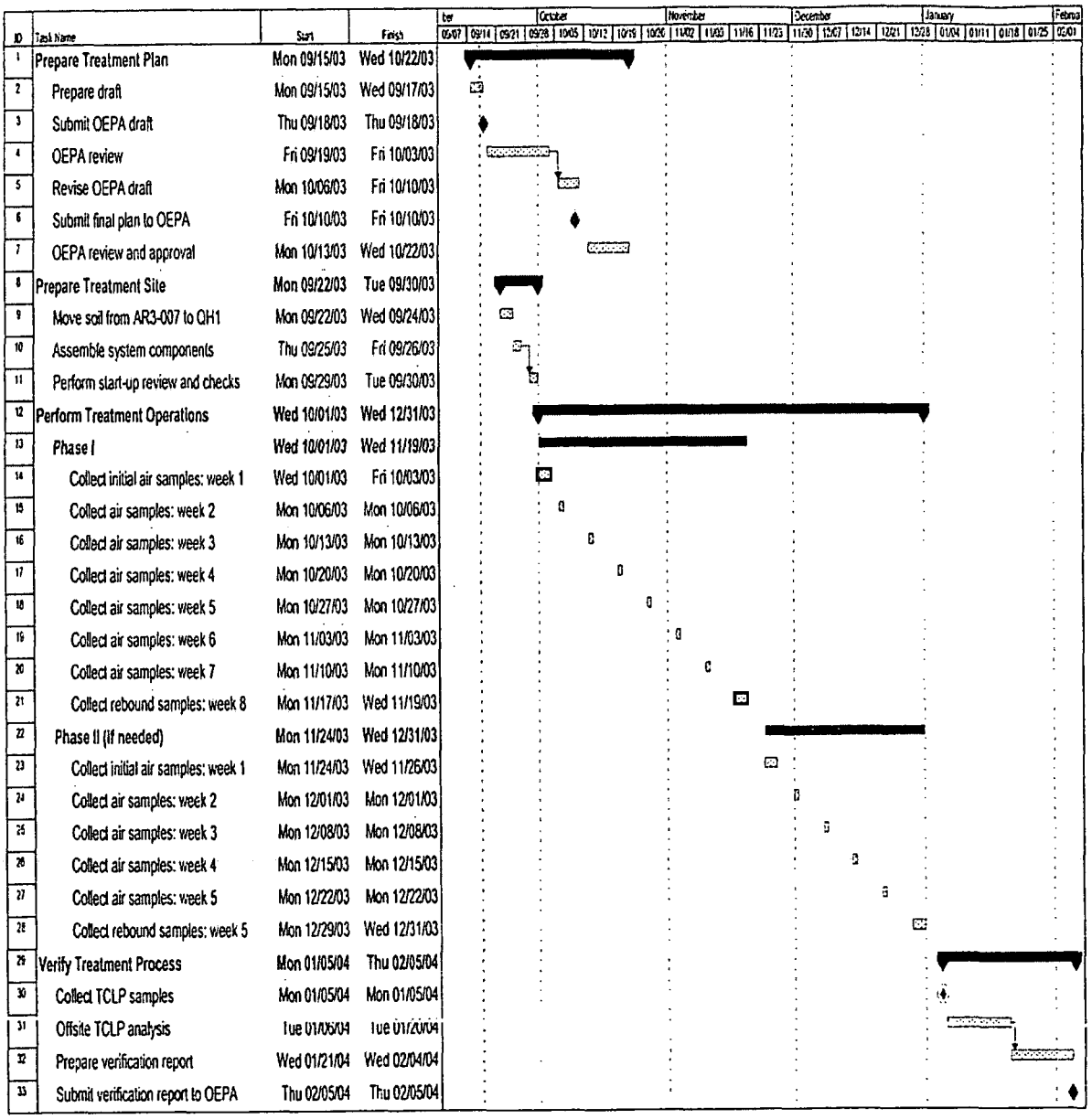
4.0 SCHEDULE

Figure 4-1 summarizes the schedule for the treatment process. Review and approval of the plan will be completed by September 30, 2003. Site preparation activities will commence with the placement of the soil into the quonset hut during the week of September 22, 2003. Phase I of the treatment process is scheduled to begin on October 1, 2003 with the collection of initial samples to establish the off-gas concentrations for the 15 pounds-per-day requirement and the initial off-gas monitoring parameters. If the PCE concentration in the static gas samples collected during the rebound test do not fall below the hot spot goal (DOE 2003b), then Phase II of the treatment will commence and the verification process will be pushed out until Phase II is completed. When air samples collected during the rebound test show that the PCE concentration in the gas is below the hot spot goal, soil samples will be collected and analyzed by the TCLP test to verify the success of the treatment. In the event that the soil samples fail the TCLP test, another phase of treatment will be initiated and followed by the collection of additional soil samples and further TCLP tests until the treatment is successful; at which time a verification report will be prepared and issued to the regulatory agencies.



ID	Task Name	Start	Finish
1	Prepare Treatment Plan	Mon 09/15/03	Wed 10/22/03
2	Prepare draft	Mon 09/15/03	Wed 09/17/03
3	Submit OEPA draft	Thu 09/18/03	Thu 09/18/03
4	OEPA review	Fri 09/19/03	Fri 10/03/03
5	Revise OEPA draft	Mon 10/06/03	Fri 10/10/03
6	Submit final plan to OEPA	Fri 10/10/03	Fri 10/10/03
7	OEPA review and approval	Mon 10/13/03	Wed 10/22/03
8	Prepare Treatment Site	Mon 09/22/03	Tue 09/30/03
9	Move soil from AR3-007 to QH1	Mon 09/22/03	Wed 09/24/03
10	Assemble system components	Thu 09/25/03	Fri 09/26/03
11	Perform start-up review and checks	Mon 09/29/03	Tue 09/30/03
12	Perform Treatment Operations	Wed 10/01/03	Wed 12/31/03
13	Phase I	Wed 10/01/03	Wed 11/19/03
14	Collect initial air samples: week 1	Wed 10/01/03	Fri 10/03/03
15	Collect air samples: week 2	Mon 10/06/03	Mon 10/06/03
16	Collect air samples: week 3	Mon 10/13/03	Mon 10/13/03
17	Collect air samples: week 4	Mon 10/20/03	Mon 10/20/03
18	Collect air samples: week 5	Mon 10/27/03	Mon 10/27/03
19	Collect air samples: week 6	Mon 11/03/03	Mon 11/03/03
20	Collect air samples: week 7	Mon 11/10/03	Mon 11/10/03
21	Collect rebound samples: week 8	Mon 11/17/03	Wed 11/19/03
22	Phase II (if needed)	Mon 11/24/03	Wed 12/31/03
23	Collect initial air samples: week 1	Mon 11/24/03	Wed 11/26/03
24	Collect air samples: week 2	Mon 12/01/03	Mon 12/01/03
25	Collect air samples: week 3	Mon 12/08/03	Mon 12/08/03
26	Collect air samples: week 4	Mon 12/15/03	Mon 12/15/03
27	Collect air samples: week 5	Mon 12/22/03	Mon 12/22/03
28	Collect rebound samples: week 5	Mon 12/29/03	Wed 12/31/03
29	Verify Treatment Process	Mon 01/05/04	Thu 02/05/04
30	Collect TCLP samples	Mon 01/05/04	Mon 01/05/04
31	Offsite TCLP analysis	Tue 01/06/04	Tue 01/20/04
32	Prepare verification report	Wed 01/21/04	Wed 02/04/04
33	Submit verification report to OEPA	Thu 02/05/04	Thu 02/05/04

Figure 4-1. Schedule for the Treatment of PCE-Contaminated Soil in Quonset Hut No. 1

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5.0 REFERENCES

U.S. Department of Energy, 1995, "Operable Unit 5 Remedial Investigation and Feasibility Study," Final, Fernald Environmental Management Project, DOE, Fernald Area Office, Cincinnati, Ohio.

U.S. Department of Energy, 1998, "Geotechnical Engineering Report for Project Order 177, A□E Support Services for Geotechnical Investigation of the Former Plant Area," Draft, Fernald Environmental Management Project, DOE, Fernald Area Office, Cincinnati, Ohio.

U.S. Department of Energy, 2002, "Project Specific Plan for Area 3A/4A Excavation Characterization and Precertification," Revision 0, Fernald Environmental Management Project, DOE, Fernald Area Office, Cincinnati, Ohio.

U.S. Department of Energy, 2003a, "Implementation Plan for Solid Waste Landfill and Fire Training Area," Revision 0, Final, Fernald Environmental Management Project, DOE, Fernald Area Office, Cincinnati, Ohio.

U.S. Department of Energy, 2003b, "Treatment Plan for the Removal of Trichloroethylene from Contaminated Soil Obtained from Remediation Area 3A and Staged in Quonset Hut No. 1," Revision 0, Fernald Closure Project, DOE, Fernald Area Office, Cincinnati, Ohio.

U.S. Department of Energy, 2003c, "Verification Report for the Removal of Trichloroethylene from Contaminated Soil Obtained from Remediation Area 3A," Revision 0, Fernald Closure Project, DOE, Fernald Area Office, Cincinnati, Ohio.

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ATTACHMENT I

ARARs for Stockpiling and Treatment of Soil Contaminated with Organic Solvents

Attachment I
ARARs for Stockpiling and Treatment of Soil Contaminated with Organic Solvents

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Design & Operation

Citation	Relevant Protective Requirement	Proposed Design/Implementation
10CFR835	Radiation doses, levels, and concentrations in restricted and unrestricted areas	Emissions from the treatment process will not exceed the radiation limits in restricted and unrestricted areas.
29CFR1904&1910	All facility personnel will be trained. Employers will develop and implement a written safety and health program for employees involved in hazardous waste operations	The soil treatment will be conducted in accordance with the provisions of the Project Specific Health and Safety Plans
40CFR61.92	Radiological emissions (except radon) to the ambient air from DOE facilities shall not exceed those amounts that would cause any member of the public to receive an effective dose equivalent of 10 mrem/year	The FCP has strategically placed air monitors at the site boundary to demonstrate that radiological emissions from the FCP are below the effective dose equivalent of 10 mrem/year.
40CFR61.93(b)	Continuous emission monitoring is required for stacks and vents that have the potential, under normal operating conditions but without emission control, to release radionuclides in sufficient quantities to cause any member of the general public to receive an effective dose equivalent of 0.1 mrem/yr or greater.	Potential uncontrolled radionuclide emissions from the stack will be modeled to the site boundary to determine if continuous stack monitoring is required.
40CFR61.96(b)	An application for approval does not have to be filed for radionuclide sources if the effective dose equivalent caused by radionuclide emissions from the new construction or modification is less than 0.1 mrem/yr.	Potential uncontrolled radionuclide emissions from the stack will be modeled to the site boundary to determine if an application for approval has to be filed for this radionuclide source.
40CFR265.13 through 265.16 OAC3745-65-13 Through 65-16	Interim Status: Treatment, Storage and Disposal – General Facility Standards	Site security measures will be conducted in accordance with site procedures. Personnel will be trained in accordance with FCP requirements. Characterization data for the soil is available.
40CFR265.31 through 265.34 OAC3745-65-31 Through 65-34	Interim Status: Treatment, Storage and Disposal – Facility Preparedness and Prevention	Preparedness and prevention equipment, as specified in the regulations, will be on-site, available, and in operating condition. The FCP site-wide internal communications and alarm systems will be used.
40CFR265.56 OAC3745-65-56	Interim Status: Treatment, Storage and Disposal – Facility Contingency Plan and Emergency Procedures	The existing FCP Emergency procedures will be followed for any hazardous waste emergency associated with the treatment process.

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ARARs for Stockpiling and Treatment of Soil Contaminated with Organic Solvents

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Design & Operation

Citation	Relevant Protective Requirement	Proposed Design/Implementation
40CFR264.552(e) OAC 3745-57-72(E)	Corrective Action Management Units Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities The Director must specify, in the permit or order, requirements for CAMUs, to include the following: (2) Requirements for remediation waste management to include the specification of applicable design, operation, and closure requirements.	The FEMP property (bounded by its property boundaries) is designated as a CAMU. Relevant design, operating, and closure requirements/specifications were incorporated from OAC 3745-56-51, OAC 3745-56-54 and OAC 3745-57-72.
OAC3745-56-50	(C) The owner or operator of any waste pile that is inside a structure that provides protection from precipitation so that neither run-off nor leachate is generated is not subject to regulation under rules 3745-56-51, 3745-54-90 to 3745-54-99 and 3745-55-01 to 3745-55-02 of the Administrative Code provided that: (D) Liquids or materials containing free liquids are not placed in the pile; and (E) The pile is protected from surface water run-on by the structure or in some other manner; and (F) The pile is designed and operated to control dispersal of the waste by wind, where necessary, by means other than wetting; and (G) The pile will not generate leachate through decomposition or reactions	An indoor soil pile will be created in Building 60 (Quonset Hut #1). The shell of the building is semi-circular and surrounds the floor, which is a concrete slab. There will be Jersey Barriers placed along the inside perimeter of the building to contain the soil. This building provides protection from precipitation to the extent that run-off and leachate are not generated.
OAC3745-56-54	(A) While a waste pile is in operation, it must be inspected weekly and after storms to detect evidence of any of the following: (1) Deterioration, malfunctions, or improper operation of run-on and run-off control systems; and, (2) Proper functioning of wind dispersal controls, where present.	Weekly inspections of the soil pile will be conducted.

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Attachment I
ARARs for Stockpiling and Treatment of Soil Contaminated with Organic Solvents

Design & Operation

Citation	Relevant Protective Requirement	Proposed Design/Implementation
OAC3745-57-72(E)	(1) Requirements for ground water monitoring that are sufficient to: (a) Continue to detect and to characterize the nature, extent, concentration, direction, and movement of existing releases of hazardous constituents in ground water from sources located within the CAMU (4) Closure and Post-Closure Requirements (b) Requirements for closure of CAMUs shall include the following, as appropriate and as deemed necessary by the director for a given CAMU: (i) Requirements for excavation, removal, treatment, or containment of wastes; (iii) Requirements for removal and decontamination of equipment, devices, and structures used in remediation waste management activities within the CAMU.	The FEMP property (bounded by its property boundaries) is designated as a CAMU. The site Integrated Environmental Monitoring Plan (IEMP) in support of the site CAMU covers the areas where the new stockpile will be located. Building 60 and the underlying media will be fully remediated in accordance with the requirements of the OU3 ROD. and OU5 RODs.
OAC3745-31-01	(N) BAT means any combination of work practices, raw material specifications, throughput limitations, source design characteristics, an evaluation of the annualized cost per ton of air pollutant removed, and air pollution control devices that have been previously demonstrated to the director of environmental protection to operate satisfactorily in this state or other states with similar air quality on substantially similar air pollution sources	Based on the amount of pollutant being released from the stack for the soil venting process, the cost per ton of air pollutant removed was great enough that installing air pollution control equipment for this project would not make good economical sense. Therefore, BAT is met even though air pollution control equipment will not be installed for this project.
OAC3745-31-02	A permit to install must be obtained for the installation or modification of a new air contaminant source unless exempted from the requirements.	The treatment process is exempted from the permit, pursuant to OAC 3745-31-03

Design & Operation

Citation	Relevant Protective Requirement	Proposed Design/Implementation
OAC3745-31-03	(A)(2)(a) Cleanup activities associated with the removal or remedial action conducted entirely on site, where such remedial action is selected and carried out in compliance with the CERCLA Section 121(e) and where such action meets all applicable air pollution emission limits and policies are hereby exempted from the permit to install requirement	Remedial action is being carried out pursuant to CERCLA Section 121(e)
	(A)(2)(d) Soil-vapor extraction remediation activity located at a facility that has a total combined emission rate of less than 15 pounds of organic compounds per day is hereby exempted from the permit to install requirement for a period of 18 months from the beginning of vapor extraction activity. The exemption is valid so long as the owner or operator provides the director with the information listed in OAC 3745-31-03(A)(4)(d) prior to beginning actual construction.	Emissions will not exceed 15 pounds of organic compounds per day
OAC3745-31-05	All new sources must employ Best Available Technology (BAT) for controlling emissions	For air emissions that have a "threshold limit value" (TLV), the OEPA Air Toxic Policy is used as a guide to determine if BAT is met. Since TCE and PCE have a TLV, the Ohio Air Toxic Policy must be followed. However, any source that emits less than one ton per year of an air toxic substance already meets the Ohio Air Toxic Policy and therefore meets BAT. Based on the Treatment Plan for this project, there is no air toxic substance that will emit more than one ton per year from this process, therefore, BAT is met for this air source