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CLOSURE PLAN INFORMATION AND DATA FOR THE WASTE OIL STORAGE IN GARAGE JULY 1992

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CLOSURE PLAN INFORMATION AND DATA FOR THE WASTE OIL STORAGE IN GARAGE

Revision 0
July 1992

Fernald Office
U. S. Department of Energy
Fernald Environmental Management Project
7400 Willey Road
Fernald, Ohio 45030

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U. S. Department of Energy, Fernald Office
Fernald Environmental Management Project
Fernald, Ohio

1.0 INTRODUCTION

1.1 Purpose

This Closure Plan Information and Data for the Waste Oil Storage in Garage Hazardous Waste Management Unit (HWMU) is being submitted to close the inactive unit under the Resource Conservation and Recovery Act (RCRA) as a partial facility closure of the Fernald Environmental Management Project (FEMP). Consistent with OAC 3745-66 (40 CFR 265 Subpart G) and the State of Ohio Proposed Amended Consent Decree, CIVIL NO. 81-86-0217 (PACD), this document describes the activities that will be conducted to complete RCRA closure of the Waste Oil Storage in Garage. It is the intention of FEMP management to implement this Closure Plan Information and Data to demonstrate RCRA clean closure of the Waste Oil Storage in Garage.

The FEMP management must ensure integration of all RCRA closure activities with required Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) response actions at the FEMP. This Closure Plan Information and Data has been prepared to ensure RCRA closure actions, conducted pursuant to requirements imposed by the Ohio Environmental Protection Agency (OEPA), are consistent with the terms of the July 18, 1986 U.S. Department of Energy (DOE) and U.S. Environmental Protection Agency (USEPA) Federal Facilities Compliance Agreement, as amended on June 29, 1990, and September 20, 1991 (hereinafter referred to as the Consent Agreements).

A copy of this Closure Plan Information and Data, along with any subsequent revisions, will be maintained at the site until final FEMP facility closure.

1.2 Background

The FEMP is a DOE owned facility located on 1,050 acres in a rural area approximately 18 miles northwest of Cincinnati, Ohio. The property is located in Ohio, mostly in Hamilton County with the northern section extending into Butler County. The villages of Fernald, New Baltimore, Ross, New Haven, and Shandon are all located within a 5 mile radius of the plant (Figure 1).

The FEMP was formerly operated as the Feed Materials Production Center (FMPC) for the purpose of producing metallic uranium fuel elements, target cores, and other uranium compounds in support of the U.S. defense program. The former production area was limited to an approximate 136 acre tract near the center of the site. The facility was in operation at this site from the early 1950s until production ceased in July 1989. In February 1991, the DOE formally notified the U. S. Congress that all production missions at the FEMP had ceased and the facility is being closed.

In 1986, the DOE initiated the ongoing Remedial Investigation/Feasibility Study (RI/FS) to evaluate and determine remediation requirements pursuant to CERCLA. In November 1989, the USEPA added the FEMP site to the National Priorities List (NPL) of hazardous waste sites. Consistent with the scope of NPL and the Consent Agreements, RCRA closure activities and any resulting changes to facility schedules must be coordinated and integrated with the RI/FS and CERCLA removal and remedial response actions.

1.3 Regulatory Impacts and Exemptions

RCRA closure activities at the FEMP are impacted by other regulatory requirements and negotiated legal agreements between the DOE and other Federal and State agencies. The following sections discuss regulatory and legal constraints and exemptions applicable to the FEMP that may affect the conduct of RCRA closure activities.

1.3.1 Mixed Radioactive and RCRA Wastes

Most FEMP wastes that are listed or characteristic hazardous wastes are handled on-site as mixed radioactive and hazardous wastes. The radioactive portion of mixed (hazardous combined with radioactive) waste is not regulated under RCRA. Determination of the radionuclide component of most material on-site is based upon analysis to assay the uranium content of the material. For some materials, assay values are based on prior sampling of the same or similar materials, or upon process knowledge. In cases where assay values have not been established, the FEMP considers materials generated in the uranium processing area to be radioactively contaminated. This determination is based upon process knowledge, experience in uranium production operations, and the fact that de minimis concentrations or below-regulatory-concern (BRC) levels for radionuclides have not been established for the residues or wastes in question.

DOE will inform OEPA of the results of radiological sample analyses obtained during the closure of the Waste Oil Storage in Garage. Sampling and analyses to support closure activities will be performed in accordance with the Waste Oil Storage in Garage RCRA Closure Sampling and Analysis Plan (SAP) provided in Attachment A, and with existing FEMP/FMPC Standard Operating Procedures for management of activities and materials involving radiation hazards.

Recognizing the dual nature of these wastes, the FEMP stores mixed wastes in accordance with RCRA regulations as well as DOE orders concerning low-level radioactive waste. DOE orders are requirements that govern the conduct of operations at DOE sites. DOE orders apply both to DOE personnel and contractors employed at DOE sites. Based on the current lack of national capacity for LDR treatment and disposal, mixed wastes are being stored on site pending the availability of acceptable mixed waste treatment or disposal facilities.

1.3.2 RCRA/CERCLA Integration, Corrective Actions and Post-Closure Requirements

Since the FEMP has been added to the NPL on November 1989 for remediation under CERCLA, RCRA closures at the FEMP will be integrated with CERCLA response actions. In accordance with 40 CFR 300.400(g), CERCLA response actions must be consistent with all other Applicable or Relevant and Appropriate Requirements (ARARs), unless justifiably waived, including OEPA and USEPA requirements for HWMU closures, corrective actions, and post-closure. Pursuant to the Consent Agreements, the FEMP management will:

- Characterize chemical and radiological contamination at the FEMP and establish site cleanup objectives.
- Conduct necessary short-term response actions to eliminate or minimize immediate threats to human health and environment.
- Implement any necessary long-term monitoring and surveillance of the facility and surrounding environment.

The closure of the Waste Oil Storage in Garage is included within the scope of Operable Unit 3 (OU 3) which covers FEMP production areas and production-associated facilities and equipment. Consistent with the terms of the Consent Agreements, the FEMP RI/FS has divided the site into 5 Operable Units (OUs). Based on the RI/FS, a Proposed Plan (PP) will be recommended for the CERCLA Record of Decision (ROD) for each of the 5 OUs. The ROD for each Operable Unit will specify the required final remediation or removal of contaminated media, equipment and structures. Remedial Design/Remedial Action (RD/RA) plans will be prepared to implement the requirements of the RODs and accomplish final remediation for each of the Operable Units.

1.3.3 Financial and Liability Exemptions

The FEMP is a federally owned facility. According to OAC 3745-66-40 C (40 CFR 265.140(c)), the federal government is exempt from the financial requirements of OAC 3745-66-40 through OAC 3745-66-48 (40 CFR 265 Subpart H).

2.0 SUMMARY OF HWMU INFORMATION

2.1 Waste Management Unit Description

The Waste Oil Storage in Garage HWMU is a container storage area located inside the Garage (Building 31; see Figure 2). Building 31 is a garage where maintenance is performed on vehicles and equipment used at the facility.

This storage unit was used to store waste oils generated through vehicle maintenance in the Garage from 1952 through 1988. The waste oils generated in the Garage were deemed hazardous because of the presence of 1,1,1-trichloroethane solvent which was routinely used in the Garage. The EPA designation of waste solvents containing 1,1,1-trichloroethane that are used for degreasing is F001.

Building 31 is constructed of concrete block and has a poured concrete floor. The Garage is bounded on the west and north sides by D street and 1st street respectively. The Waste Oil Storage in Garage is a 10 ft. wide by 10 ft. long area along the west wall of the Garage. It is bounded on the south by a hydraulic vehicle lift, on the west by the west wall of the building, on the north by a line approximately three foot north of the previous location of a concrete block wall (i.e., a dividing wall 3 to 4 feet in height that has been removed) and on the east by a line ten foot from the west wall. These boundaries are now delineated by yellow boundary lines marked on the Garage floor. Figure 3 is a plan layout of the unit. Figure 4 is a topographic map of the Garage and the surrounding area.

Over the years, facility upgrades have altered parts of the unit and surrounding areas as follows. In 1983, an old vehicle lift (see Figure 3) which had been used to service FEMP vehicles was removed from the Garage and replaced with a new lift. When the old lift was removed, a portion of the floor (approximately a 3 foot by 10 foot section) along the southern boundary of this unit was removed along with the old lift. This section of the floor was replaced with new concrete. Near the northwest corner of the unit, two abandoned pipes (former air and hydraulic fluid supply for the removed vehicle lift) extend above the floor

(Figure 3). These pipes are cut off approximately 2 inches above the floor surface. The hydraulic oil tank was also removed in the 1983 upgrade. Near the southwest corner of the unit, an abandoned electrical conduit is cut off approximately 18 inches above the floor. After this unit was no longer used for storage of hazardous waste, the low wall on the north boundary of the unit was demolished and removed from the garage.

The Garage contains 6 floor drains and a catch basin (Figure 3). Prior to 1990, the 6 floor drains flowed to a oil/water separator. Oil from the oil/water separator was piped to underground storage tank # 5 (UST #5) and the separated water flowed to the FEMP Waste Water Treatment System. In early 1990, the floor drains, oil/water separator, and UST #5 were disconnected and capped. The catch basin collects wastewaters from cleaning the floor in the Garage and flows to a sump. Liquids are pumped from the sump to, and stored in, an above ground 500 gallon tank pending laboratory analysis prior to treatment in the FEMP Waste Water Treatment System.

The former area of the Waste Oil Storage in Garage was inspected on January 27, 1992 and was found to be in good condition with the exception of stains and a crack in the northwest corner of the floor of the unit (Figure 3). No spills or releases from this unit have been reported.

2.2 Waste Inventory

According to FEMP records, the only hazardous waste stored in this unit consisted of waste oils containing spent 1,1,1-trichloroethane solvent. During the time this unit operated, drummed waste oils containing 1,1,1-trichloroethane were stored in this area for periods in excess of 90 days. No laboratory test results of the wastes stored in the unit are available at this time.

Since analyses of other waste streams generated from Garage activities have identified the presence of carbon tetrachloride, 1,1-dichloroethylene, and tetrachloroethylene, these constituents have been included on the list of parameters in Table 1 for analysis. In addition, 1,1-dichloroethane and 1,2-

dichloroethane, suspected degradation by-products of 1,1,1-trichloroethane, are also included in Table 1.

Pending waste characterization and identification and selection of acceptable treatment or disposal options, wastes removed from the Waste Oil Storage in Garage will be stored on-site in an approved RCRA storage location at the FEMP.

It is estimated that the maximum capacity of this unit is twenty-five, 55-gallon drums stacked one high. There is no documentation of the actual number of drums of waste that have been generated or stored in this unit.

2.3 Current Use

At the present time, no RCRA wastes are stored in the Waste Oil Storage in Garage. In 1988, four Satellite Accumulation Areas (SAAs) were established in the Garage in accordance with OAC 3745-52-34(c)(1) (40 CFR 264.34(c)(1)) to allow accumulation of any hazardous waste generated in the Garage. These SAAs serve to temporarily store waste oil in 55-gallon drums prior to characterization.

After clean closure has been obtained for this HWMU, the FEMP management intends to return this unit to service for non-hazardous Garage activities to perform maintenance on FEMP vehicles.

2.4 Security

As with all DOE facilities, security at the FEMP is strict. The entire FEMP processing area, including Building 31, is surrounded by chain link fencing and monitored by on-site security personnel. All employees and visitors are required to enter through one of several guarded entrances into the facility. The Waste Oil Storage in Garage has been marked off and posted to restrict unauthorized entry.

3.0 CLOSURE INFORMATION

3.1 Closure Objectives and Performance Standards

It is the intention of FEMP management to implement this Closure Plan Information and Data to demonstrate RCRA clean closure of the Waste Oil Storage in Garage. Clean closure will be demonstrated by analyzing samples of the decontamination rinseate, core samples, and underlying soil within and under the boundary of the HWMU as defined in Section 2.1. The HWMU will be declared clean if the sample analyses demonstrates that residual contamination is below the Cleanup Action Levels (CALs) listed in Table 1.

To document possible contamination outside the unit boundary, additional samples will be taken from the two directed sample locations (see Figure 3) near the unit perimeter. These samples will be analyzed for Table 1 hazardous constituents. Since there are other sources of potential contamination not related to waste oil storage (e.g., oil spills during vehicle maintenance), it will be impossible to determine whether any constituents that may be detected in these two perimeter locations were due to a release from the unit, or resulted from other activities performed in the Garage. Therefore, the data gathered from areas outside the boundary of the HWMU will be used as documentation for future CERCLA activities at the Garage in accordance with the RCRA/CERCLA integration strategy, discussed in Section 1.3.2., and will not affect demonstration of clean closure.

Closure actions conducted for this unit will be in accordance with closure performance standards in OAC 3745-66-11 (40 CFR 265.111). Closure performance standards to be followed include:

- Minimizing the need for further maintenance by removing all hazardous wastes from the unit and conducting sampling of rinse waters from the floor surface, floor core samples, and underlying soil to confirm that residual contamination of the floor surface and soil is below the Cleanup Action Levels listed in Table 1.

- Controlling, minimizing or eliminating, to the extent necessary to protect human health and the environment, the escape of hazardous waste, hazardous constituents, leachate, contaminated runoff, or hazardous waste decomposition products to the groundwater, surface waters, or to the atmosphere.

- Conducting and documenting closure activities in accordance with the approved RCRA Closure Plan Information and Data.

Operations at the FEMP must comply with all applicable DOE orders and Standard Operating Procedures to control radiation and chemical hazards and ensure that potential releases and exposures meet ALARA (as low as reasonably achievable) requirements.

In addition, the FMPC Waste Minimization Plan requires minimizing waste generated during closure. This includes an evaluation of the types and volumes of wastes that may be generated during decontamination as compared to physical removal of pad materials and soils. The alternative selected will generate the lowest volume of mixed wastes that would require storage at the FEMP.

3.1.1 Cleanup Action Levels

To achieve "clean" closure, analyses of samples of the final rinse collected from the cleaned floor surface, core samples, and samples of soil underlying the floor of the unit must demonstrate that concentrations of hazardous constituents and degradation by-products are less than the Cleanup Action Levels for the parameters listed in Table 1. The Cleanup Action Levels are consistent with the criteria defined by the OEPA Closure Plan Review Guidance, dated May 1, 1991. The Cleanup Action Levels are based on the following:

1) Cleanup Action Levels for rinseate samples used to verify decontamination of the floor of the unit are based on the following criteria:

   - Fifteen times the public drinking water maximum contaminant level

(MCL) for hazardous waste constituents as promulgated in OAC 3745-81-11 (40 CFR 141.11) for inorganics, and OAC 3745-81-12 (40 CFR 141.12) for organics;

- Where an MCL is not available for a particular contaminant, then fifteen times the maximum contaminant level goal (MCLG) as promulgated in OAC 3745-81-50 (40 CFR 141.50) will be used as the clean standard; or

- When the product of fifteen times the MCL or MCLG exceeds 1 mg/l, or if neither an MCL nor an MCLG is available for a particular contaminant, 1 mg/l will be used as the Cleanup Action Level.

2) Cleanup Action Levels for soils are based on following criteria:

- Soils being analyzed for organic contaminants will be considered "clean" when concentrations of targeted organic constituents are less than the practical quantitation limit (PQL) for that parameter as achieved by the analytical laboratory using SW-846 methods.

If additional remediation is required to address contamination that cannot be reduced to Cleanup Action Levels following procedures in this document, the FEMP management reserves the right to establish and substitute risk-based cleanup levels for final remediation and closure.

If, soil contamination or possible impacts on groundwater quality are suspected or indicated while conducting closure actions, or it is determined that clean closure cannot be achieved, revised Closure Plan Information and Data will be submitted to the agency. The Closure Plan Information and Data will include a revised schedule of activities and describe how the RCRA closure activities, including any necessary corrective actions and post-closure activities, will be integrated with CERCLA response actions required to mitigate existing or potential threats to human health and the environment, and ongoing CERCLA response activities and requirements pursuant to the Consent Agreements.

3.2 Closure Methodology

This section addresses the procedures that will be followed to accomplish "clean" closure of the Waste Oil Storage in Garage. Closure of the unit involves the following general activities:

- Removal of all hazardous wastes and residues.
- Decontamination of the unit's floor surface.
- Analysis of decontamination rinseate, core samples, and underlying soil samples.

Sampling procedures are described in detail in the SAP (Attachment A) and Section 3.3 of this plan. The proposed closure schedule and activities are discussed in Section 5.0.

To evaluate possible contamination of adjoining areas, samples will be collected from the hydraulic lift pit and catch basin which are located outside the boundaries of the unit. Samples will include liquids, sludges, core samples, and soil samples from each of the two locations. Analytical data from sampling outside the unit boundaries will be used to document existing contamination in the Garage for future remediation under CERCLA, but will not affect the closure of the Waste Oil Storage in Garage.

3.2.1 HWMU Decontamination/Cleaning

To accomplish closure and ensure the closure performance standards are met, the following specific RCRA closure activities will be implemented:

1) The FEMP will notify the OEPA and registered Professional Engineer (PE) at least five (5) working days prior to the initiation of closure activities such as floor cleaning, rinseate sampling, core sampling, and soil sample collection as discussed in the Closure Schedule (Section 5.0).

2) The floor area of the unit will be cleared, and any loose debris vacuumed from the floor and expansion joints. The vacuum device will be fitted with a High Efficiency Particulate Air (HEPA) filter to control the release of particulates. All residue removed from the unit will be drummed and managed as hazardous waste pending waste characterization.

3) Prior to washing the floor, all cracks and expansion joints with loose sealing material, or greater than 1/8 inch wide in the floor of the unit will be filled with expanding Portland cement grout. Sealing of the joints and cracks will prevent any water and/or potential contamination from the surface washing from migrating into the cracks and into the underlying soil. The grout will be allowed to set at least 96 hours to cure and harden prior to washing.

4) Once the cracks have been filled with grout, an impervious temporary dike will be constructed around the boundaries of the unit to control and collect wash water created during the cleaning of the floor. The temporary dikes will be faced with polyethylene or other suitable sheeting and secured with weighted blocks or sand bags.

5) The floor surface of the unit will be washed with a non-phosphate laboratory grade detergent and tap water solution. A single washing of the floor constitutes a wash cycle.

6) A peristaltic pump (or other approved pump) will be used to transfer the waste water generated during washing into a container. Each cycle for washing of the entire unit is expected to take approximately 1 hour to complete. The volume of wash water is expected to generate approximately 120 gallons per cycle.

7) Following each wash cycle, the Project Engineer will decide whether to attempt another wash cycle or collect a rinseate sample from the floor. If a rinseate sample is desired, a separate decontamination verification rinse will be conducted, and the rinse water collected in a separate container. The equipment used to collect the verification rinse waters shall be cleaned or decontaminated. A representative sample of the decontamination verification rinseate will be collected in accordance with the SAP (Attachment A). The sample will be analyzed for the parameters listed in Table 1. Decontamination of the floor surface will be determined in accordance with Section 3.1.1. If decontamination has not been achieved, the wash cycle followed by a verification rinse will be repeated (up to 3 cycles).

8) After surface decontamination has been completed, floor core samples will be taken at the directed locations shown on Figure 3. These samples will be taken in accordance with the SAP and analyzed for the parameters listed in Table 1. The number of core samples will be five (5) plus one (1) duplicate.

9) Soil samples from beneath the floor in the unit will be collected through holes cored into the concrete floor, exposing the sub-base and soil underlying the floor. Detailed procedures for the concrete coring and soil sampling are discussed in Section 3.3.1. Soil

samples will consist of five (5) sets of soil samples taken within the storage unit at five (5) directed locations (see Figure 3). Sampling will be conducted at four (4) locations along the expansion joints and one (1) location to sample beneath the crack in the northwest corner of the unit. Each set of soil samples at a location will consist of two (2) soil samples, each taken as a grab composite sample at two distinct depths. The sampling depths are 0 - 6 inches and 6 - 18 inches. A total of ten (10) soil samples and one (1) duplicate will be collected from beneath the concrete floor of the unit.

10) All reusable equipment used during the sampling effort will be properly decontaminated, to prevent cross-contamination. Sample equipment decontamination procedures are described in Section 3.2.2 and the SAP (Attachment A).

To evaluate possible contamination outside the unit boundaries, additional samples will be taken from two directed sample locations (see Figure 3) near the unit perimeter. These samples will be analyzed for Table 1 hazardous constituents. The two directed sample locations are the hydraulic lift pit adjacent to the southeast corner of the unit, and the catch basin near the northeast corner of the unit. The following samples will be collected from each location:

- A sample of standing liquid (if any).
- A sample of sludge (if any).
- A core sample of the concrete floor of the structure.
- A soil sample at the 0 - 6 inch depth.
- A soil sample at the 6 - 18 inch depth.

A total of ten (10) samples are expected to be collected outside the unit boundaries. Quality control samples will also be collected. Sampling will be conducted in accordance with procedures in the SAP (Attachment A).

Since there are other sources of contamination not related to the waste oil storage activities (e.g., oil spills during vehicle maintenance), the data from sampling outside the unit boundaries will be used to document existing contamination in the Garage for future remediation under CERCLA, and will not affect the closure of the Waste Oil Storage in Garage.

All wastes will be containerized and managed in an approved RCRA hazardous waste storage location pending waste characterization and determinations in accordance with the approved FMPC Waste Analysis and Waste Determination Plans.

3.2.2 Decontamination of Equipment Used During Closure

Only clean or decontaminated equipment will be used during closure of the Waste Oil Storage in Garage. Decontamination of sampling equipment is addressed in the SAP (Attachment A). Equipment used for the cleaning of the floor will be decontaminated in designated decontamination areas after the activity is completed, in accordance with the following procedures:

1) All reusable equipment used during the sampling effort will be properly decontaminated to remove possible contamination. Two decontamination stations will be established on clean plastic sheeting near the unit (to prevent the spread of contamination). The stations shall consist of two stages: a dirty stage and a clean side stage spaced approximately 3 feet apart.

2) As necessary, use brushes and scrapers to remove visible contamination and stains. Rinse with potable water to remove loose contamination, wash with non-phosphate laboratory grade detergent, then rinse again with potable water. Steam cleaning or high pressure potable water may be used as alternate decontamination methods.

3) Double rinse with deionized water. All wash water and rinseate will be collected and managed in accordance with approved procedures.

4) At least once per day, collect a quality control sample of the final equipment rinse.

5) After the equipment has been properly decontaminated, place it on a clean sheet of plastic or other suitable material to air dry. While air drying, loosely cover the equipment with another clean piece of sheeting to protect from contamination.

6) Wash/rinse wastes from equipment decontamination will be placed into the appropriate containers and managed as described in Section 3.4.

3.3 Sampling and Analysis

All sampling and analyses for hazardous constituents will be conducted in accordance with the SAP (Attachment A).

In order to demonstrate clean closure, the following samples will be collected within the boundaries of the unit:

- One (1) sample of each cleanup verification rinse to evaluate effectiveness of cleaning being conducted to close the unit as discussed in Section 3.2 of this plan.

- Six concrete core samples will be collected from the concrete floor for laboratory analysis of selected parameters listed in Table 1 to demonstrate Cleanup Action Levels have not been exceeded.

- Eleven soil samples will be collected from beneath the concrete floor for laboratory analysis of selected parameters listed in Table 1 to demonstrate Cleanup Action Levels have not been exceeded.

- Equipment decontamination rinseate samples as specified in Section 3.2.2 of this plan and the SAP (Attachment A).

- Quality Control and Quality Assurance (QA/QC) samples as specified in the SAP (Attachment A).

3.3.1 Soil Sampling Of The Waste Oil Storage In Garage

To be able to sample the soils below the reinforced concrete floor, the FEMP management proposes to core through the concrete. The selection of proper methods, or combination of methods will be made by the Project Engineer.

Prior to the concrete coring operations, site blueprints will be reviewed to determine if there are any known underground utilities, pipes, wires or other similar structures which could indirectly be breached. These underground structures (if any) will be marked at the unit. (If required, new sampling locations will be selected as close as possible to the original location.)

The following steps will be followed to collect concrete core and soil samples:

1) A core hole will be advanced through the concrete, cutting through reinforcement bars and other obstructions in the concrete. Coring will continue until the top of the base gravel (the gravel below the concrete but above the native soil) is reached.

2) The concrete core will be placed in a suitable sample container for analysis for Table 1 parameters.

3) Once the base gravel is reached, all concrete chips will be removed from the hole by hand, wearing clean chemical resistant work gloves. All of the concrete chips and other materials produced as a result of the coring operation will be collected at the site, placed in properly labeled containers, and temporarily stored in an approved RCRA storage location at the FEMP until an analysis can be made for a final RCRA determination.

4) A clean or decontaminated stainless steel bucket auger (or other suitable soil sampling device) will be advanced through the base gravel and the native soil by hand. Penetration will begin near the top of the base gravel and continue through to the native soil. If the base gravel is too large to allow auguring, the gravel may be removed by hand, using clean chemical resistant gloves. Once the top of the native soil is reached, augering will continue using the bucket auger.

5) Two samples will be taken at each location specified in Section 3.2.1 and as shown on Figure 3 using the bucket auger. The samples will be taken from the depth interval of soil surface to a depth of 6 inches, and from the depth interval of 6 inches to 18 inches. The soil samples will be taken from the auger material in accordance with the SAP (Attachment A), and placed into appropriate containers. After the sampling is complete, the borings will be filled with expanding Portland cement grout flush with floor surface.

3.3.2 Quality Assurance/Quality Control

Duplicate samples will be taken from the unit to confirm the laboratory's QA/QC program and document analytical precision. One duplicate sample will be taken for every twenty (20) samples collected.

To reduce laboratory bias, the duplicate sample will be labeled and numbered in such a way that will not indicate that the sample is a duplicate. This analysis shall follow SW-846 methods and the SAP (Attachment A).

3.4 Management of Wastes Generated During Closure

All wastes generated during closure of the unit will be evaluated in accordance with the approved FMPC Waste Analysis and Waste Determination Plans. Wastes generated during closure will be placed in appropriate containers, properly labeled, and managed as follows:

- Wastes that are awaiting characterization, or are determined to be RCRA hazardous wastes will be stored on-site in an approved RCRA storage location until an acceptable treatment or disposal option is identified.

- Waste waters from decontamination of the unit that are determined to be below the CALs listed in Table 1 will be discharged to the FEMP waste water treatment system. If the concentrations of constituents in the waste waters do not exceed the Cleanup Action Levels listed in Table 1, the waste waters will be declared exempt from hazardous waste regulation pursuant to OAC 3745-51-03(A)(2)(f) (40 CFR 261.3(a)(2)(iv)) and will be discharged in the FEMP waste water treatment system.

- Radioactive non-hazardous wastes will be managed in accordance with applicable DOE orders.

3.5 Health and Safety

Prior to conducting any field activities at the FEMP, a health and safety assessment must be conducted to characterize existing hazards and conditions. Based on the findings of the health and safety assessment, the Project/Task Specific Health and Safety Plan will specify required health and safety procedures, including personnel protection equipment, entry and exit requirements, and decontamination procedures. Guidelines for the Preparation of FMPC Project/Task Specific Health and Safety Plan are included in Attachment B.

As part of the safety assessment, radioactivity screening will be done over the area to determine radiation protection requirements. Additional screening, including on-site laboratory analyses for radionuclides, may be required to further categorize radiation levels and hazards before the samples can be shipped to an off-site laboratory. Radiation survey procedures and requirements for shipping samples to off-site laboratories for analysis will be in accordance with approved FEMP/FMPC procedures.

4.0 CLOSURE CERTIFICATION

The samples collected within the unit boundary (see Section 3.3) will be used to demonstrate clean closure of the Waste Oil Storage in the Garage. If the concentrations of hazardous constituent contamination or their degradation products in these samples cannot be reduced below the Cleanup Action Levels listed in Table 1, revised Closure Plan Information and Data will be submitted. The revision will specify what actions are required to complete RCRA closure of the unit and define the relationship between additional closure activities, CERCLA response activities to mitigate threats to human health and the environment, and the final remediation pursuant to the CERCLA ROD for Operable Unit 3 and Operable Unit 5 (if remediation of soils is required).

4.1 Certification Inspections and Documentation

The certifying Professional Engineer or his/her designated representative will be required to be present to inspect all significant closure activities, including, floor grouting, washing and rinsing of the floor, sampling of rinseates, core and soil sampling, and other sampling activities to verify cleanup. The purpose of the inspections is to ensure that the closure actions and procedures are conducted in accordance with the approved Closure Plan Information and Data.

All RCRA closure certification documentation will be compiled and retained at the FEMP for access and inspection by OEPA. RCRA closure certification documentation shall include a daily log of activities, field notes recorded by the owner and the owner's representatives during closure activities, reports of laboratory analyses, copies of any hazardous waste manifests, chain-of-custody records for sample handling and tracking, and certification statements by both the owner and the registered Professional Engineer.

4.2 Statement of Certification

The DOE and an independent, qualified, registered, Professional Engineer, will submit certification of closure within 60 days after unit closure is complete. The Certification will meet the requirements of OAC 3745-50-42(D) and OAC 3745-66-15 and 40 CFR 270.11(d) and 40 CFR 265.115, respectively. The certification statements will be worded as follows:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

_____

U. S. Department of Energy

I hereby certify that the hazardous waste management unit has been closed in accordance with the specifications in the approved closure plan.

_____

Ohio Registered Professional Engineer

5.0 CLOSURE SCHEDULE

Prior to initiating a project at the FEMP, documentation required for compliance with the National Environmental Policy Act (NEPA) must be completed and approved. In addition, to comply with DOE orders, several internal FEMP procedures must be prepared, reviewed, approved, and implemented. Examples of the DOE project-specific requirements are:

- Operational Readiness Reviews
- Site Work Plans
- Radiological and Chemical Health and Safety Risk Assessments
- Health and Safety Plans
- Worker Training Plans and Instruction

Internal FEMP NEPA and DOE compliance activities require up to 180 days to complete and are initiated concurrently with the submittal of the Closure Plan Information and Data. However, before NEPA and DOE compliance requirements can be completed, the final requirements and specifications of the OEPA approved Closure Plan Information and Data must be defined and incorporated.

Upon receipt of approval of the Closure Plan Information and Data for the Waste Oil Storage in Garage, the FEMP will complete the remaining NEPA and DOE compliance requirements. Assuming no modifications to the plan are required, closure activities will be completed within 240 days from the start of closure activities. The FEMP will notify the OEPA at least 45 days prior to the date on which closure activities will begin. It is anticipated that the 45 day notice can be provided when OEPA approval is received. If more time is required to complete NEPA and DOE compliance documentation and activities, a revised schedule will be submitted to the OEPA. Figure 5 shows the anticipated schedule for closure of the Waste Oil Storage in Garage.

The OEPA and the registered PE will be notified at least five (5) business days in advance of significant activities conducted pursuant to closure of the unit. Significant activities include cleaning, sampling, and related activities.

TABLE 1: CLEANUP ACTION LEVELS

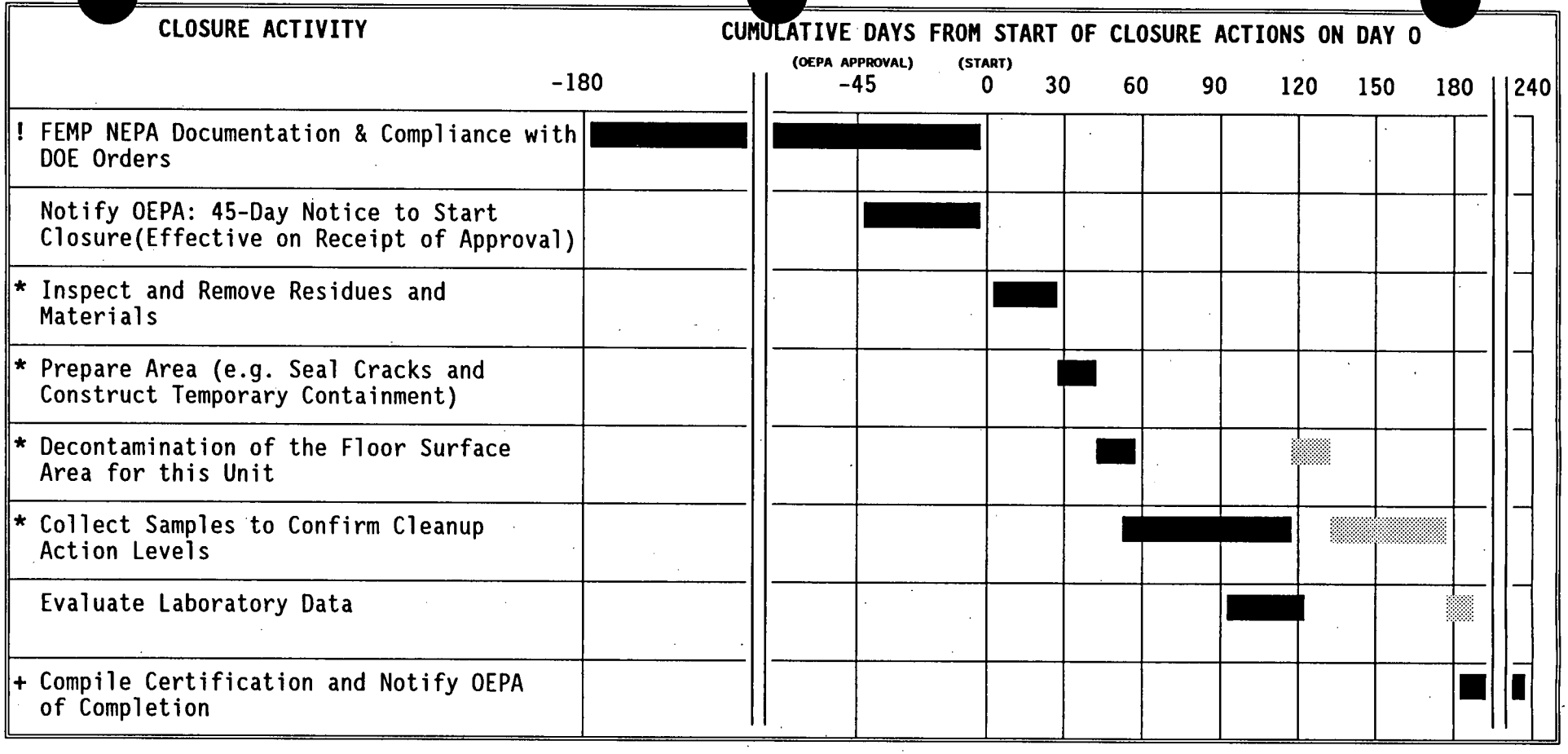
Targeted Hazardous Constituents	CAS No.	Cleanup Action Levels [1] Rinse Samples [2] (mg/l)	Soil Samples [3] (mg/kg)
Carbon Tetrachloride	56-23-5	0.075	Practical Quantitation Limit (PQL)
1,1-Dichloroethylene	75-35-4	0.105	PQL
Tetrachloroethylene	127-18-4	1.0	PQL
1,1,1-Trichloroethane	71-55-6	1.0	PQL
Potential 1,1,1-Trichloroethane Degradation Products:			
1,1-Dichloroethane	75-34-3	1.0	PQL
1,2-Dichloroethane	107-06-2	0.075	PQL

---

1 FEMP Management reserves the right to establish and substitute risk-based cleanup levels if the listed Cleanup Action Levels cannot be met following the procedures set forth in this Closure Plan Information and Data.

2 Values listed are 15 times the Maximum Contaminant Levels or Maximum Contaminant Level Goals as listed in 40 CFR 141.11 and OAC 3745-81-11, 40 CFR 141.12 and OAC 3745-81-12, and 40 CFR 141.50. Where no MCL or MCLG has been established for the constituent or 15 times the MCL or MCLG exceed 1 mg/l, 1 mg/l is used as the decontamination action level (see discussions in Section 3.1.1 of this closure plan information and data).

3 Clean levels for metals in soils are based on the mean concentration of metals measured in background soil samples plus 2 standard deviations. Action levels for organic compounds are the analytical practical quantitation limits developed by the analytical laboratory at the time of analysis using SW-846 methods (see discussions in Section 3.1.1 of this closure plan information and data).



! - Requirements set by NEPA and DOE Orders must be met before field closure activities can begin. These activities were initiated concurrent with preparation of this Closure Plan Information and Data. The time required to complete this activity will be dependent upon the changes that may be required to address modifications made by Ohio EPA.

* - Indicates critical field activities requiring 5-day advanced notice to the Ohio EPA and inspection/review by the independent, qualified, registered, Professional Engineer or his/her representative. Includes all sampling conducted to confirm cleanup.

+ - Requests for an extension of the time required for completion of closure, if necessary, will be submitted to the agency in accordance with OAC 3745-66-13(A) and OAC 3745-66-13(B), [40 CFR 265.113(a) and 40 CFR 265.113(b)].

▒ - Indicates conditional activities that are dependent on an evaluation of previous analytical results.

FIGURE 5: RCRA CLOSURE SCHEDULE FOR WASTE OIL STORAGE IN GARAGE

ATTACHMENT A

WASTE OIL STORAGE IN GARAGE
RCRA CLOSURE SAMPLING AND ANALYSIS PLAN (SAP)

Revision 0
July 1992

U.S. Department of Energy
Fernald Environmental Management Project
7400 Willey Road
Fernald, Ohio 45030

TABLE OF CONTENTS

WASTE OIL STORAGE IN GARAGE
RCRA CLOSURE SAMPLING AND ANALYSIS PLAN (SAP)
(EM-SMPLPLN-92-163, REV - 0)

1.0 INTRODUCTION

Building 31 (the Garage) which includes the Waste Oil Storage area is an vehicle and equipment maintenance and repair facility at the Fernald Environmental Management Project (FEMP). The Waste Oil Storage area within Building 31 has been determined to be a Hazardous Waste Management Unit (HWMU). Closure of this HWMU will be accomplished through cleanup of the Waste Oil Storage in Garage in accordance with the RCRA Closure Plan Information and Data for the Waste Oil Storage in the Garage.

2.0 PURPOSE OF SAMPLING

Decontamination of the Waste Oil Storage in Garage will be accomplished through the washing and rinsing of the surface of the concrete floor within the unit boundaries. The Project Engineer shall determine the number of wash - rinse cycles to be employed prior to a verification rinse of the concrete. Site Media Sampling (SMS) shall sample the container of verification rinse water once verification rinsing is complete. This verification rinse sample will confirm or deny the concrete decontamination effort within the unit boundaries.

The concrete floor, and soils beneath the concrete floor of the Waste Oil Storage in Garage (Building 31) will be sampled to determine if the floor or soils beneath the floor within the unit are contaminated with the hazardous constituents of concern (see Section 3.0). The Project Engineer has identified 5 directed sample locations within the unit, as shown on Figure 3 included with the RCRA Closure Plan Information and Data for the Waste Oil Storage in Garage. The absence of the hazardous waste constituents in core and soil samples identified in Section 3.0 of this sampling plan will confirm that the integrity of the floor within the unit has not been breached.

To evaluate possible contamination outside the unit boundaries, additional samples will be taken from the two directed sample locations (see Figure 3) near the unit perimeter. These samples will be analyzed for the suspected contaminants listed in Section 3.0. Since it will be impossible to determine whether any constituents that may be detected in these two locations were due to a release from the unit, or resulted from other activities performed in the Garage, this data will be gathered during closure of this unit as documentation for future CERCLA activities at the Garage in accordance with the RCRA/CERCLA integration strategy discussed in Section 1.3.2 of the RCRA Closure Plan Information and Data.

If soil contamination is identified, revised Closure Plan Information and Data will be prepared and submitted to the Ohio Environmental Protection Agency (OEPA).

3.0 SUSPECTED CONTAMINANTS

Suspected contaminants include:

- 1,1,1-Trichloroethane
- Tetrachloroethylene
- 1,2-Dichloroethane
- 1,1-Dichloroethane
- Carbon Tetrachloride
- 1,1-Dichloroethylene

4.0 SAMPLE FIELD SITE

Building 31 is located at the corner of "D" Street and 1st Street, near the south-central part of the former production area at the FEMP. The identified HWMU is located along the west wall in the northwest quadrant of Building 31 (Figure 3).

4.1 SAMPLE LOCATION

The verification rinse water sample is to be extracted from the rinse water removed from the concrete surface within the unit. FEMP Chemical Operators will extract and containerize this sample, after which it will be relinquished to SMS personnel for submission for analysis.

Concrete core and soil samples will be collected from the 5 directed sample locations within the unit boundaries, as shown on Figure 3. The Project Engineer or his/her designee will clearly mark the floor to establish the designated sampling locations within the unit boundaries. FEMP Maintenance personnel will core through the concrete floor (using a clean or decontaminated coring device) and remove the concrete as necessary to allow for collection of concrete core and soil samples. A total of five (5) concrete samples and one (1) duplicate will be collected at the designated sampling locations within the unit. The soil sampling depths are 0 - 6 inches and 6 - 18 inches. A total of ten (10) soil samples and one (1) duplicate will be collected from beneath the concrete floor.

To evaluate possible contamination outside the unit boundaries, additional samples will be taken from the two directed sample locations shown on Figure 3 near the unit perimeter. A sample of standing liquid (if any) and a sample of sludge (if any) will be extracted from the hydraulic lift pit adjacent to the southeast corner of the unit, and the catch basin near the northeast corner of the unit.

Concrete core and soil samples will also be collected from the two (2) directed sample locations outside the unit boundaries (i.e., the hydraulic lift pit and

the catch basin), as shown on Figure 3. The Project Engineer or his/her designee will clearly mark the floor to establish the designated sampling locations outside the unit boundaries. FEMP Maintenance personnel will core through the concrete floor (using a clean or decontaminated coring device) and remove the concrete as necessary to allow for collection of concrete core and soil samples. A total of two (2) concrete samples and one (1) duplicate will be collected at the designated sampling locations outside the unit boundaries. The soil sampling depths are 0 - 6 inches and 6 - 18 inches. A total of four (4) soil samples and one (1) duplicate will be collected from underlying soils.

A total of ten (10) samples are expected to be collected outside the unit boundaries. Quality control samples will also be collected. Sampling will be conducted in accordance with procedures in this sampling plan.

After all core and soil sampling is completed at each location, the Maintenance personnel will fill the sample extraction holes with expanding Portland cement grout.

4.2 SAMPLES PER LOCATION

One composite sample of rinse water will be collected per wash cycle (no more than three (3) cycles are anticipated), along with one duplicate rinse sample per wash cycle.

One (1) concrete core sample will be taken at each of the five (5) sampling locations within the unit boundaries. In addition, one (1) duplicate sample will be collected. Core samples will be analyzed for the suspected contaminants listed in Section 3.0

Two distinct soil samples will be collected from each of the five (5) soil sample locations within the unit boundaries shown on Figure 3:

1) a 6 inch sample, collected from the area between the soil material - aggregate interface and a depth of 6 inches below the soil material -

aggregate interface, and

2) a 12 inch sample, collected from the area between the bottom of the previous sampling depth and a depth of 18 inches below the soil material - aggregate interface.

One duplicate soil sample will be collected at random. A total of 11 soil samples, 6 rinsate sample, 6 concrete core samples, and any trip, field, and equipment rinsate samples will be collected within the unit boundaries for submission for analysis for the suspected contaminants listed in Section 3.0 of this plan.

To evaluate possible contamination outside the unit boundaries, additional samples will be taken from the two directed sample locations shown on Figure 3 near the unit perimeter. These samples will be analyzed for the suspected contaminants listed in Section 3.0. The two directed sample locations are the hydraulic lift pit adjacent to the southeast corner of the unit, and the catch basin near the northeast corner of the unit.

One (1) sample of standing liquid (if any) and one (1) sample of sludge (if any) will be extracted from the hydraulic lift pit adjacent to the southeast corner of the unit, and the catch basin near the northeast corner of the unit.

One (1) concrete core sample will be taken at each of the two (2) sampling locations outside within the unit boundaries. In addition, one (1) duplicate sample will be collected. Core samples will be analyzed for the suspected contaminants listed in Section 3.0

Two distinct soil samples will be collected from each of the two (2) soil sample locations outside the unit boundaries shown on Figure 3:

1) a 6 inch sample, collected from the area between the soil material - aggregate interface and a depth of 6 inches below the soil material - aggregate interface, and

2) a 12 inch sample, collected from the area between the bottom of the previous sampling depth and a depth of 18 inches below the soil material - aggregate interface. One duplicate soil sample will be collected at random.

A total of ten (10) samples are expected to be collected outside the unit boundaries for submission for analysis for the suspected contaminants listed in Section 3.0 of this plan. Quality control samples will also be collected. Sampling will be conducted in accordance with procedures in this sampling plan.

Data from sampling outside the unit boundaries will be used to document existing contamination in the Garage for future remediation under CERCLA, and will not affect the closure of the Waste Oil Storage in Garage.

5.0 REQUIRED ANALYTICAL PARAMETERS

As specified in the "Environmental Media Sampling Request" included in the sampling packet, all samples will be submitted to the Sample Receiving section of the Analytical Laboratory under chain-of-custody for (1) Total VOAs (Section 3.0 constituents only). In addition, a screening sample aliquot for (2) Gross Alpha/Beta is required for each sample shipped off-site for analysis.

5.1 REQUIRED SAMPLE VOLUME

Required sample amounts are as follows:

SOLID CONSTITUENTS	WEIGHT	HOLDING TIMES	PRESERVATIVES
TOTAL VOAs	2-100g	14 DAYS	COOL, 4°C
SCREENING ALIQUOT	4 oz	3 MONTHS	NONE REQUIRED

LIQUID CONSTITUENTS	VOLUME	HOLDING TIMES	PRESERVATIVES
TOTAL VOAs	3-40ml	14 DAYS	COOL, 4°C
SCREENING ALIQUOT	4 oz	3 MONTHS	NONE REQUIRED

The listed weight and volume requirements are minimum values necessary to perform the requested analyses. Weight and volume criteria may change to reflect the requirements specified by the contracted laboratory.

5.2 REQUIRED SAMPLE CONTAINER

Site Media Sampling (SMS), during the course of FEMP on-site sampling, will use only glass containers cleaned to EPA protocol "A" (manufacturers documentation accompanies each container shipment). All glass containers used may vary in size from those specified, according to availability, and will be sealed using Teflon^{R}-Lined Closures (TLC).

6.0 QA/QC REQUIREMENTS

Site Media Sampling will adhere to the QA/QC requirements as outlined in procedure **EM-CS-001, "ENVIRONMENTAL MEDIA ON-SITE SAMPLING"**, for trip blanks, field blanks, and duplicate sampling. SMS will extract 1 duplicate each of rinseate, soil and concrete core sample material in support of this project. The duplicate sample extractions will be noted in the permanent field logbook. All

duplicate samples will be contained, sealed, and labeled in such a way that the receiving laboratory will not know that the sample is a duplicate. **These stated standards are applicable to the FEMP Environmental Monitoring sampling program in regards to on-site sampling.**

7.0 EQUIPMENT NEEDED

As a minimum, the required equipment and associated forms needed will be those which are checked on **Attachment 1, Equipment**, which includes equipment listed under procedure **EM-CS-001 "ENVIRONMENTAL MEDIA ON-SITE SAMPLING"**. The equipment listed in this attachment and procedure has been established as a guide to the equipment utilized by SMS in the extraction of media samples. Regardless of listing, SMS will choose the equipment appropriate for each media sample extraction. Any exception to the previously listed equipment in the above attachment and procedure will be noted in the field logbook applicable to each project.

7.1 DECONTAMINATION OF EQUIPMENT

All equipment used by EM will be decontaminated in accordance with EM internal procedure **EM-CS-001, "ENVIRONMENTAL MEDIA ON-SITE SAMPLING"**. A copy of this procedure is available and can be viewed upon request.

8.0 METHODOLOGY OF EXTRACTION

SMS will utilize the following procedures to extract samples for analysis:

1) **EM-EXM-90-001**, "ENVIRONMENTAL MEDIA SAMPLING EXTRACTION METHODOLOGY FOR USING A STAINLESS STEEL AUGER AND A STAINLESS STEEL SCOOP".

2) **EM-EXM-90-005**, "ENVIRONMENTAL MEDIA SAMPLING EXTRACTION METHODOLOGY USING A MILWAUKEE ROTARY HAMMER AND A TUNGSTEN CARBIDE TIPPED CORING BIT".

3) **EM-EXM-90-007,** "ENVIRONMENTAL MEDIA SAMPLING EXTRACTION METHODOLOGY FOR OBTAINING SAMPLES OF LIQUID MATERIALS USING A DISPOSABLE GLASS COLIWASA".

Copies of these extraction methodologies will be included in the sampling packet for use by the SMS technicians involved in collection of the samples for this project.

All SMS technicians involved in any sample extraction are required to review current extraction methods.

The pre-selected equipment may prove to be inappropriate in the field. If this situation arises the SMS sampling team Lead Technician will determine the equipment to be used. The type of equipment selected will be noted in the field logbook applicable to this project.

9.0 HEALTH AND SAFETY

The work to be performed as outlined in this sampling plan will be accomplished in accordance with the project specific Health and Safety Plan developed for the "Closure Plan Information and Data for the Waste Oil Storage in Garage" project.

10.0 DOT PACKAGING/MARKING/LABELING REQUIREMENTS

As specified in 49 CFR 173.421, the following criteria will be evaluated to determine the appropriate DOT packaging/marking/ labeling requirements:

1) If the package does not contain more than 15 grams of uranium 235, or the radiation level at any point on the external surface does not exceed 0.5 millirem per hour, then use:

- **Proper Shipping Name for Liquids or Solids:**

  Radioactive Material, Limited Quantity, N.O.S.
  (laboratory specimen for analysis)

- **Hazard Class:**

  Radioactive Material

- **Identification Number:**

  UN2910

- **Labeling/Marking:**

  The word "Radioactive" shall be on each bottle. Each container shall have "Radioactive Material, Limited Quantity" and "Danger, Cargo Aircraft Only".

- **Packaging:**

  The materials shall be packaged in strong, tight packages that will not leak any of the radioactive materials during conditions normally incident to transportation.

- **Overpackaging**

  SMS will comply with 49 Code of Federal Regulations (CFR) 173.421 concerning overpackaging to maintain sample preservation temperatures, and as per USEPA guidelines contained in SW-846.

2) If the package contains more than 15 grams of Uranium 235, or the radiation level at any point on the external surface of the package exceeds 0.5 millirem per hour, use:

   - **Proper Shipping Name for Liquids or Solids:**

     Radioactive Material, LSA, N.O.S.
     (laboratory specimen for analysis)

   - **Hazard Class:**

     Radioactive Material

   - **Identification Number:**

     UN2912

   - **Labeling/Marking:**

     Radioactive Yellow II or Radioactive Yellow III label (determined by radiation monitoring levels at a distance of one meter from the surface of the outer container) and "Danger, Cargo Aircraft Only".

- **Packaging:**

  DOT 7A, Type A packaging must be used. The exterior of each package must be marked "USA DOT 7A Type A" and "Radioactive". DOT 17-C (5 gallon pail) is an approved package.

- **Overpackaging**

  SMS will comply with 49 Code of Federal Regulations (CFR) 173.421 concerning overpackaging to maintain sample preservation temperatures, and as per USEPA guidelines contained in SW-846.

ATTACHMENT B

TO

CLOSURE PLAN INFORMATION AND DATA

WASTE OIL STORAGE IN GARAGE

Revision #0

JULY 1992

GUIDELINES FOR THE PREPARATION OF FMPC
PROJECT/TASK SPECIFIC HEALTH AND SAFETY PLANS
(APPENDIX II OF THE FMPC SITE HEALTH AND SAFETY PLAN, JUNE 1990)

PROJECT/TASK TITLE: _____

PREPARED BY: _____

DATE: _____

REVIEWED BY:

Centralized training: _____

Radiological Safety: _____

Industrial Hygiene and Safety: _____

NOTE: This plan and associated permits shall be reviewed with each worker and be posted at the work site at all times. Review of all of the listed sections is required prior to work start.

INTRODUCTION

A project/task specific health and safety plan is a complementary program element that aids in the elimination or effective control of anticipated safety and health hazards. The project/task health and safety plan shall include all basic requirements of the overall health and safety plan, but with close attention given to those characteristics unique to the particular project, task or job. For example, the project/task plan may outline the method of doing work in a confined space area, hazardous waste area, area containing hazardous materials or any area where there is the potential for exposure to employees.

Much of the information required to complete the plan may be provided on FMPC Work Permit Form No. 2939. However, the plan will allow for a complete job evaluation, health evaluation of the employee(s) performing the work and assure that personnel health and safety concerns are addressed prior to the start of the job/task.

The project/task health and safety plan must identify the hazards of each phase of the specific project/task/job and must be kept at the work site. All required permits shall be posted in the immediate work area. A job briefing shall be conducted prior to job start up and at any other time as deemed necessary to ensure that employees are aware of the project/task/job health and safety plan and its implementation. The supervisor in charge and Industrial, Radiological Safety and Training representatives shall perform periodic inspections of the job area to ensure that all known deficiencies are corrected prior to work start and during work performance.

NOTE: Examples are provided after each section, they are not meant to be realistic.

SECTION NO.	TITLE
1	History & Description of Building, Equipment, Area
2	Work Area Organization and Site Access Control
3	Task Activities/Work Plan
4	Hazard Assessments
5	Standard Operating Procedures (SOPs)
6	Education and Training
7	Medical Surveillance
8	Monitoring
9	Personnel Protective Equipment Requirements
10	Safety Equipment List
11	Decontamination Procedures
12	Emergency Plans
13	Amendments

TASK SPECIFIC HEALTH & SAFETY QUESTIONNAIRE

SECTION NO. 1 History and Description of Building, Equipment, Area

This Section in its entirety address all known facts about the area where work will be performed. When completed, this section combined with job activities/work plan, should create an understanding of potential health and safety issues to be addressed at the work area.

A. Description of Building, Equipment, Area

Pertinent information about the building, equipment or area such as current disposition, name, manufacturers, location of work area, building construction, etc.

EXAMPLE: This is a 1000 gallon fiberglass tank buried approximately three (3) feet beneath the blacktop east of Building 46. The tank currently contains an unknown amount of methyl ethyl something. The tank was constructed in 1978 by Round Up Manufacturers and installed at the FMPC in January 1979. It has been in continuous use since that time and will be taken out of service 10 days before this project starts.

B. Process Performed or Activities Conducted in the Area

Describe activities performed in the building, use of the equipment, types of material processed, etc.

EXAMPLE: Building 46 is a vehicle and maintenance supply storage facility. The north bay of this three bay building houses emergency vehicles. No radioactive or hazardous

substances have been processed in this building or area.

C. **Unusual Features**

Include information pertaining to conditions which may present a hazard to personnel such as powerlines, material storage, equipment location, buried lines/pipes, etc.

EXAMPLE: There is a drainage ditch approximately 50 feet east of the proposed work site. The flow in the drainage ditch is not controlled.

An underground high voltage line is believed to be located in this area connecting the electric substation with Building 46.

TASK SPECIFIC HEALTH & SAFETY QUESTIONNAIRE (cont.)

SECTION NO. 2 Work Area Organization and Site Access Control

This section clearly identifies the designated work area, control zones or restricted areas where work will be performed; name(s) of supervisor personnel; name(s) of personnel performing work/activities; names of support personnel required to complete task. Site entry and exiting protocol should also be identified.

EXAMPLE: An exclusion zone will be established around the proposed tank excavation area. This area measures approximately 25' X 25'. The exclusion zone shall be marked with barrier tape.

Jo Smyth, Badge No. 0000, will be the supervisor in charge of this project. Tiny Tim, Badge No. 0000, Chicken Little, Badge 000, and Hairy Wolf, Badge No. 0000, will perform the tank sampling, excavation and removal activities.

Entry into the exclusion zone will be limited to the above listed individuals, Industrial Hygiene and Radiological Safety Technicians, Safety and Fire Inspectors and Utility Engineers. Anyone else desiring entry must first be approved by the supervisor in charge.

Personnel exiting the area must be monitored to assure they are free of contaminates.

SECTION NO. 3 Task Activities/Work Plan

State task activity that will be performed and anticipated work plan.

TASK SPECIFIC HEALTH & SAFETY QUESTIONNAIRE (cont.)

EXAMPLE: The contents of the tank must be sampled, the blacktop and aggregate fill on top and around the tank will be removed and boxed for shipment, all piping will be disconnected and removed, the tank will be removed and the excavation filled with new aggregate materials.

TASK SPECIFIC HEALTH & SAFETY QUESTIONNAIRE (cont.)

SECTION NO. 4 Hazard Assessments

General categories of hazards that may be present at the work site should be listed. MSDSs must be included for any identified hazardous substance. It is prudent to assume that any identified hazard is present until a characterization has proven otherwise. Provisions should be made to properly protect all individuals that have the potential for exposure from the suspected or identified hazardous substances. Specific WEMCO work permits may be required and should be prepared in accordance with Site Procedure 516.

DISCUSSION: List each suspected or identified hazardous substance, condition or waste. Attach copy of the applicable MSDS to the Health and Safety Plan. When identified, the appropriate permit should be completed and a copy attached to the Project/Task Specific Health and Safety Plan.

SECTION NO. 5 Standard Operating Procedures (SOPs)

Some project/tasks will require that special SOPs be prepared or existing procedures be referenced to conduct the work according to specified guidelines.

DISCUSSION: If no procedure exists to cover the proposed work, prepare one to address the project/task. If procedures exist, list the applicable document number and full title.

SECTION NO.6 Education and Training

Employees shall not engage in field activities until they

have been trained to a level commensurate with their job function, responsibilities and with the degree of anticipated hazards. The amount of training is based on worker categories.

A. Worker Category

1. General Site Worker - 40 hours of SARA/OSHA instruction plus 24 hours of field experience.

2. Occasional Site Worker - 24 hours of SARA/OSHA instruction plus 8 hours of filed experience.

3. Workers Regularly on Site But Not in Danger of Exposure - 24 hours of SARA/OSHA instruction plus 8 hours of field experience.

4. Management or Supervisor - Same as 1, 2, or 3 depending on category of work being supervised plus 8 hours of specialized training.

5. Visitors -Are not permitted within exclusion zones unless they have completed the training requirements specified in No. 1 through 4.

B. A safety meeting for all employees involved in hazardous material/waste operations. These meetings shall be held prior to task start, daily during work periods, when there is a change in work activities or implementation of safety plan amendments. Meetings shall be documented and will become a permanent element of this task specific health and safety plan. Subjects to be covered shall include:

- 0 Work operations
- 0 Personnel protective equipment
- 0 air monitoring data
- 0 hazard communication
- 0 hearing conservation
- 0 monitoring results
- 0 decontamination procedures
- 0 task organization
- 0 physical stress
- 0 emergency procedures
- 0 communications
- 0 general safety
- 0 housekeeping

A detailed listing of subjects can be found in the site Health and Safety Plan Appendix II.

SECTION NO. 7 **Medical Surveillance (To be completed by Medical Services)**

Worker selection is based on an evaluation by a qualified licensed physician having knowledge of the specific tasks to be performed and the exposure potential as it relates to the worker. FMPC form HR 3162 is used for the purpose.

SECTION NO. 8 **Monitoring (To be completed by IRS&T)**

A. State the monitoring protocol and action levels for the contaminants involved in each work activity.

B. State each type of instrument to be utilized and coordinate with the type of contaminate to be monitored.

TASK SPECIFIC HEALTH & SAFETY QUESTIONNAIRE (cont.)

SECTION NO. 9 Personnel Protective Equipment Requirements

State the required level of protection for each activity, task or hazardous substance as identified in the hazard assessment.

SECTION NO. 10 Safety Equipment List

State each piece of safety equipment and the protocol for utilization. This section should create the "shopping list" of safety supplies or equipment available for use by workers.

EXAMPLES: Personnel Protective Equipment (PPE), Fire Extinguishment, Decontaminating Materials, Communication Devices, Barrier Tape, Etc.

SECTION NO. 11 Decontamination Procedures

Address decontamination of personnel and each piece of equipment as a step by step procedure for both chemical and radiological contaminants.

Include level of protection to be utilized during decontamination process, solutions, stations and dispensation of fluids, disposable and other waste.

SECTION NO. 12 Emergency Plans

Emergency plans shall include methods of reporting emergencies or abnormal conditions; evacuation procedures; accountability; types of alarms, etc.

TASK SPECIFIC HEALTH & SAFETY QUESTIONNAIRE (cont.)

SECTION NO. 13 Amendments

Statements shall be made as follows:

A. This Project/Task Specific Health and Safety Plan is based on information available at the time of preparation. Unexpected conditions may arise which require reassessment of safety procedures. It is important that personnel protective measures be thoroughly assessed by the supervisor in charge and IRS&T representative prior to and during the planned task activities. Unplanned activities and/or changes in the hazard status require a review of and may require changes in this plan.

TASK SPECIFIC HEALTH & SAFETY QUESTIONNAIRE (cont.)

B. Changes in the anticipated hazard status or unplanned activities are to be submitted as an amendment to this Project/Task Specific Health and Safety Plan.

C. Amendments must be approved by the plan author and IRS&T prior to implementation of the amendment.

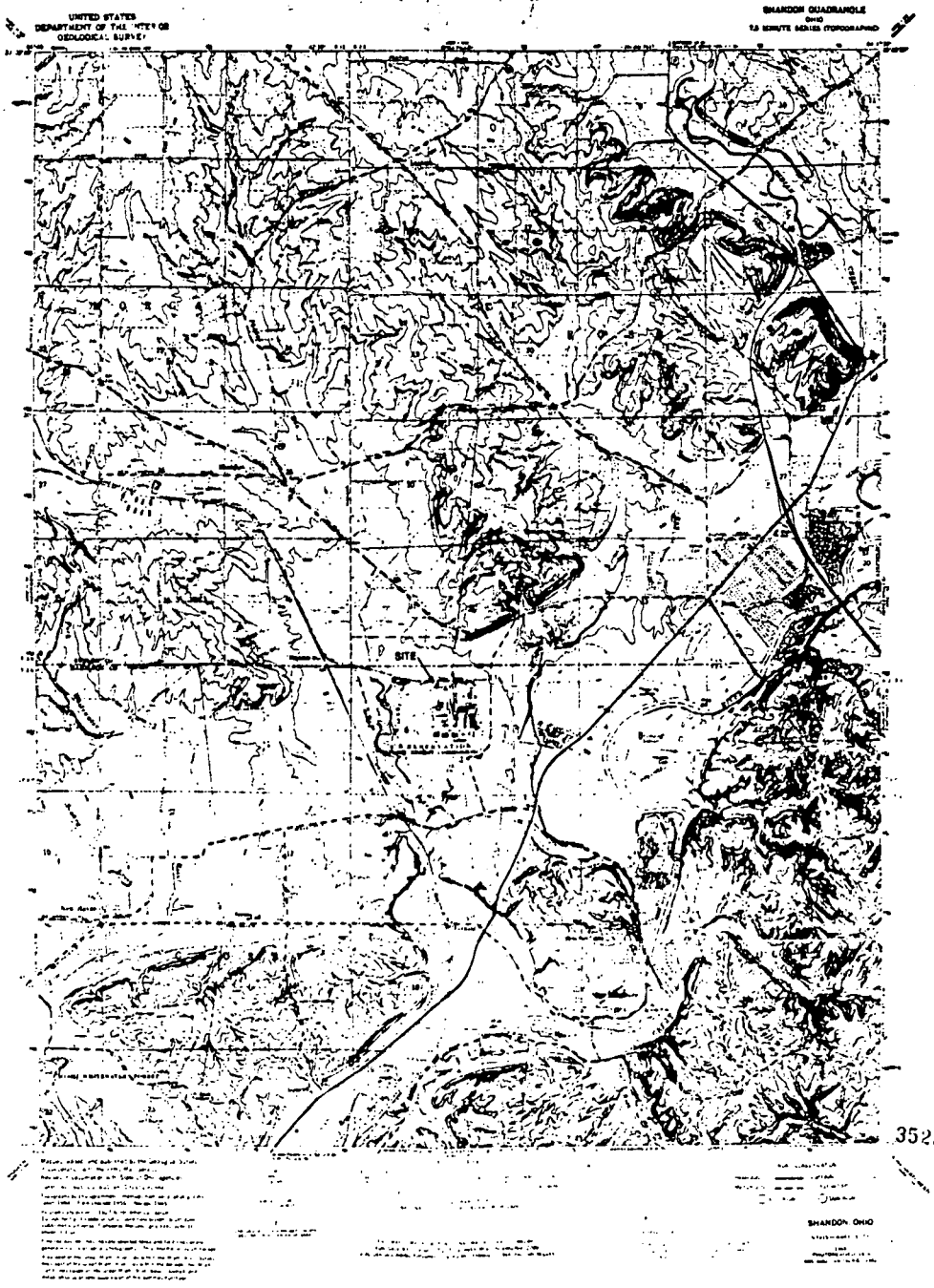


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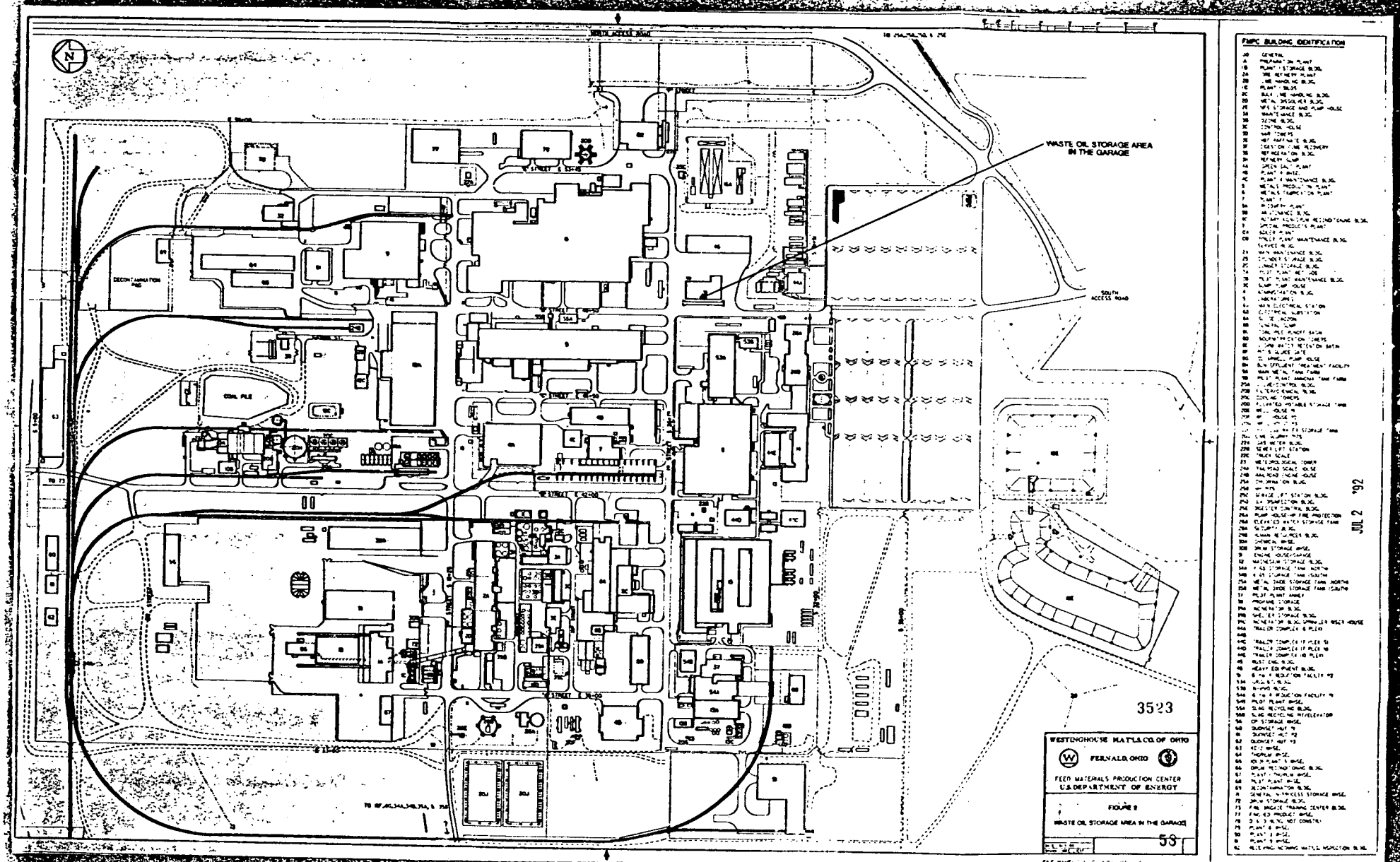
FIGURE 1

SITE LOCATION MAP
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT
FERNALD, OHIO

WESTINGHOUSE MATLS CO OF OHIO
FERNALD, OHIO
FEED MATERIALS PRODUCTION CENTER
U.S. DEPARTMENT OF ENERGY

JUL 2 '92


WASTE OIL STORAGE AREA IN THE GARAGE
SOUTH ACCESS ROAD
COAL PILE
DECONTAMINATION PAD
FMPC BUILDING IDENTIFICATION
WESTINGHOUSE MATLS CO OF OHIO
FERNALD, OHIO
FEED MATERIALS PRODUCTION CENTER
U.S.DEPARTMENT OF ENERGY
FIGURE 9
WASTE OIL STORAGE AREA IN THE GARAGE
3523
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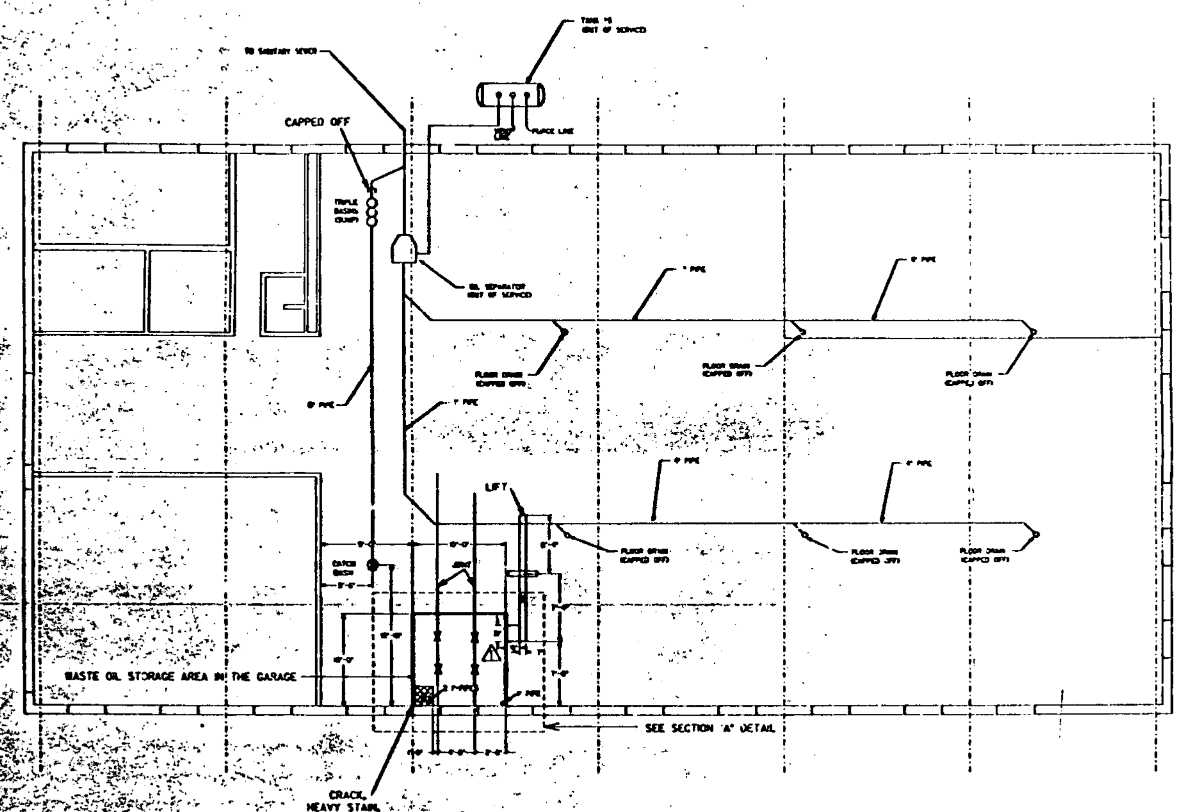
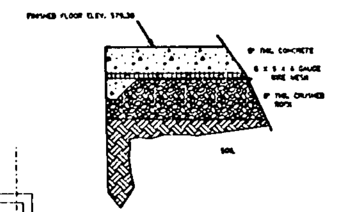
JUL 2 '92



BLDG. 31

N.T.S.



SECTION 'A' DETAIL

BELOW FINISHED FLOOR

N.T.S.

NOTE

⚠ 1. HAZARDOUS WASTE MANAGEMENT UNIT TO BE CLOSED SHOWN IN BOLD.

X SAMPLE LOCATIONS

3523

NO.	REVISIONS	DATE	DWN. BY	APPD.	REF. DWG. NO.
3	REVISED PER RES 1832		D.J.H.		
2	REVISED PER RCRA PERMIT A		D.J.H.		
1	REVISED NOTE #1, REVISED LINE WEIGHT.				3IX-5500-A-00023

NOTE: WEMCO C.A.D. DRAWING NOT TO BE REVISED MANUALLY

APPROVALS

WESTINGHOUSE ENVIRONMENTAL MANAGEMENT CO. OF OHIO

FERNALD, OHIO

FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

U.S. DEPARTMENT OF ENERGY

GRID 7 | BLDG. 31

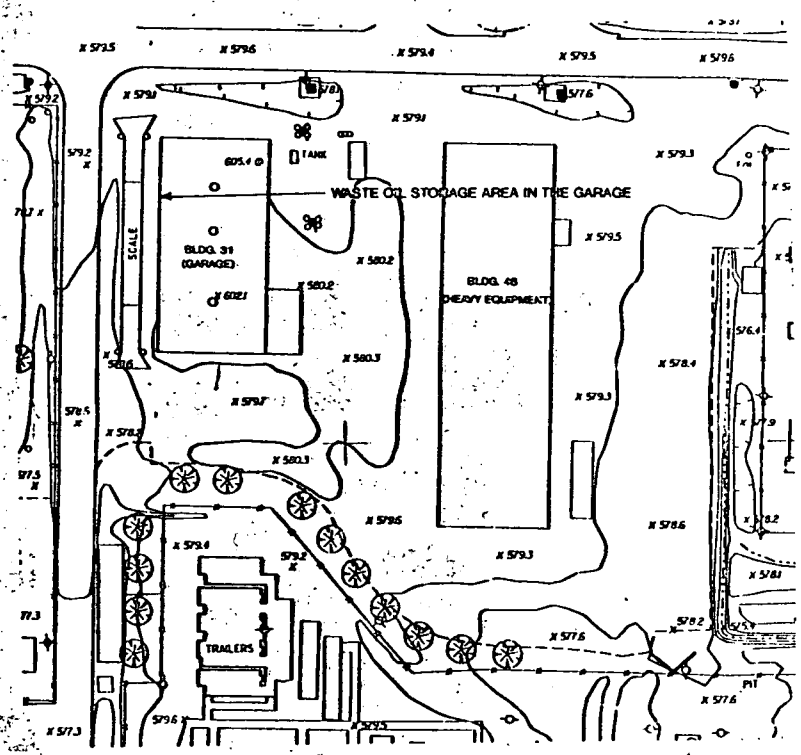
FIGURE 3

PLAN LAYOUT OF WASTE OIL STORAGE AREA IN THE GARAGE

59

3IX-5500-P-00050 | 3

FILE NAME: SERVER/RES543/3IXP00050.DGN



3523

NO.	REVISIONS	DATE	DWN BY	APPD.	NO.	REVISIONS	DATE	DWN BY	APPD.	REF. DWG. NO.	DESCRIPTION

WESTINGHOUSE MAT'LS. CO. OF OHIO
FERNALD, OHIO
FEED MATERIALS PRODUCTION CENTER
U.S. DEPARTMENT OF ENERGY

FIGURE 4-1
TOPOGRAPHIC MAP 60
OF
THE AREA SURROUNDING CYCLONE 31