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ESC-118/98
April 30, 1998

Mr. Tim Fischer
U.S. Environmental Protection Agency
Region 5
77 W. Jackson Blvd.
Chicago, IL 60604-3590

Mr. Brian Nickel
Ohio Environmental Protection Agency
Southwest District Office
401 E. Fifth Street
Dayton, Ohio 45402-2911

SUBJECT: Contract No. DE-AC24-97OH20044
**GUARD POST 44: RELEASE OF FINAL BUILDING DATA
PACKAGE**

REFERENCE: Statement of Work Requirement C 7.1 -- Regulator Data Requests

Dear Mr. Fischer and Mr. Nickel:

Previously, the demolition of Guard Post 44 was determined to be a non-CERCLA event. As a result, the Building Data Package was provided for information to the Regulators and the Public Reading Room in advance of the demolition. The attached change pages indicate that this occurred. Please incorporate these change pages in your current version (REV 0) of the document. This completes the development of the Building Data Package for Guard Post 44.

This information has been authorized for release to US EPA, OEPA, ODH, MMCIC, Public Reading Room, and Administrative Record by Sam Cheng of MEMP.

Page 2 GUARD POST 44: RELEASE OF FINAL BUILDING DATA PACKAGE

If you require further information, please contact Dave Rakel at extension 4203.

Sincerely,



Linda R. Bauer, Ph.D.
Department Manager, Environmental Safeguards & Compliance

LRB/nmg

Enclosures as stated

cc: Ray Beaumier, OEPA, (1) w/attachments
Ruth Vandegrift, ODH, (1) w/attachments
Jeff Raines, TechLaw, (1) w/attachments
Dann Bird, MMCIC, (1) w/attachments
Administrative Record, (1) w/attachments
Public Reading Room, (5) w/attachments
DCC

BDP GP-44

| REV | DESCRIPTION | DATE |
|--------------|---|---------------|
| RELEASE 0 | Available for Reading Room and Administrative Record. | Feb. 13, 1998 |
| 1 | Final Work Plan, Appendix L, inserted. | Apr. 27, 1998 |
| | | |
| | | |

MOUND



**Environmental
Restoration
Program**



**MOUND PLANT
BUILDING DATA PACKAGE**
Information Notice

Building GP44 will soon be dismantled. A
Building Data Package describing Building GP44
and its dismantlement is available in the
CERCLA Public Reading Room, 305 E. Central
Ave., Miamisburg, Ohio.

Questions can be referred to DOE Office of Public Affairs at (937) 865-3116

BUILDING DATA PACKAGE (BDP)

BUILDING GP-44

DOE MOUND PLANT

MIAMISBURG, OHIO 45343

TABLE OF CONTENTS

| | | |
|-----|---|---|
| 1.0 | General Overview | 1 |
| | 1.1 Introduction | 1 |
| | 1.2 Scope | 1 |
| 2.0 | Building Specific Overview | 3 |
| | 2.1 Current Uses of Building GP-44 | 3 |
| | 2.2 Past Uses of Building GP-44 | 3 |
| | 2.3 Summary of Environmental Concerns and Findings | 4 |
| | 2.4 Radiological Characterization Summary For Building GP-44 | 5 |
| 3.0 | Site Description | 6 |
| | 3.1 Site/Vicinity Location and Characteristics | 6 |
| | 3.2 Description of Structures, Roads, Other Improvements Related to Building GP-44 | 6 |
| | 3.3 Current and Past Uses of Buildings Adjacent To Building GP-44 | 7 |
| 4.0 | Records Review | 8 |
| | 4.1 General/Historical CERCLA Information | 8 |
| | 4.2 Specific Record Sources | 9 |
| | 4.2.1 Occurrence Reports | 9 |
| | 4.2.2 Spills and Releases | 9 |
| | 4.2.1 Associated PRS Overview | 9 |
| | 4.3 Review of Building Prints | 9 |
| | 4.4 Aerial Photographs | 9 |
| | 4.5 Interviews | 9 |

LIST OF APPENDICES

| | |
|------------|---|
| Appendix A | Acronyms |
| Appendix B | Map of Montgomery County |
| Appendix C | Site Plan and PRS Release Blocks |
| Appendix D | Building Drawings |
| Appendix E | Aerial Photographs |
| Appendix F | Environmental Appraisal Report of the Mound Plant (Extract) |
| Appendix G | Radiological Summary/Information |
| Appendix H | Asbestos Summary/Information |
| Appendix I | Lead Summary/Information |
| Appendix J | Chemical History |
| Appendix K | Noted Soil Contamination, Vicinity |
| Appendix L | General Work Plan for Building GP-44 |

1.0 General Overview

1.1 Introduction

The purpose of this Building Data Package is to identify, if possible, any recognized environmental conditions (defined below) that may affect the subject property.

Recognized Environmental Condition – The presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a likely release, a past release, or a material threat of a release of any hazardous substances or petroleum into structures or into the ground, ground water, or surface water near the building.

1.2 Scope

This document has been prepared in response to an agreement between the Department of Energy (DOE), the U.S. Environmental Protection Agency, and the Ohio Environmental Protection Agency. It is a Building Data Package of Building GP-44 located at the DOE Mound Plant in Miamisburg, Ohio. This investigation was performed to support procedures as found in ASTM Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process (Designation E 1527-94).

The scope of the investigation included the building and a 15-foot wide perimeter border around the building. This perimeter includes roadways, sidewalks, pavement, and grass covered areas. The investigation of Building GP-44 included the following.

- 1) A building and perimeter inspection
- 2) An examination of historical aerial photographs and maps.
- 3) A review of federal and state regulatory agency records.
- 4) Personnel interviews.
- 5) A review of Mound Plant records for:
 - A) History of spills and releases

- B) Past sampling data
- Radiological survey
 - Chemical history
 - Lead paint
 - Asbestos
 - Radon

The building investigation was conducted by BWO personnel on 12/9/97.

This report used a variety of previous assessments completed by EG&G Mound and/or its subcontractors. The reports used were as follows.

- OU-9 Site Scoping Report, Volumes 1-12
- Mound Facility Physical Characterization, December 1992
- Active Underground Storage Plan, November 1994.
- EDR Report - Radius Map
- Building Prints
- MD-222153, Mound Site Radionuclides By Location, July 1995
- Contaminant Surveys
- Environmental Appraisal of the Mound Plant, March 1996
- Appropriate Potential Release Site (PRS) Documents
- Title Search
- OU-6, SM East Asphalt Final Verification Report

2.0 Building Specific Overview

Mound Plant is located in the southern portion of the corporation limits of Miamisburg, Ohio. The entire Mound Plant facility is situated on 305 acres of land and contains more than 132 buildings. The subject property consists of Mound Plant Building GP-44 footprint, and a 15-foot wide perimeter around the building. Appendix K denotes soil contamination around Building GP-44. Building GP-44 contains 265 square feet. It was constructed in 1964. No waste was generated or stored in Building GP-44.

2.1 Current Uses of Building GP-44

Since 1988 the building has been used for non-hazardous storage such as tools and clothing.

2.2 Past Uses of Building GP-44

Building GP-44 was used from 1964 to 1988 as a Security Entrance (Guard Post) to the SM/PP Area.

2.3 Summary of Environmental Concerns and Findings

| DESCRIPTION | PROBLEM (YES, NO) | COMMENT | RESOLUTION |
|--|-------------------|--|--|
| Asbestos | NO | Ceiling Tile Floor Tile (Non-friable) | Being sampled. Remove with building demolition. |
| Lead | NO | Used on cast iron drain fittings. | Will be segregated after demolition. |
| Lead Paint | N/A | | |
| HVAC | NO | Window type units | To be removed prior to demolition. |
| Mercury | N/A | | |
| Chemicals | NO | Janitorial cleaning liquid | To be removed prior to demolition. |
| Radiological | NO | Sampling within release limits | Demolition debris to landfill. |
| Radon | N/A | | |
| Fluorescent Lamps | NO | PCBs in ballists | Will be removed prior to demolition. |
| Septic Systems | N/A | | |
| Drains & Sumps | NO | Floor drain to storm sewer | All run-off collected. |
| Waste Water | NO | Storm water sewer | All run-off collected. |
| Stains & Corrosion | NO | None observed. | |
| Space | N/A | | |
| Storage Tanks | N/A | | |
| Solid Waste Disposal | NO | Building debris | Will be monitored prior to disposal. |
| Migratory Hazards | NO | Run-off water | See waste water. |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| <p>YES = Mitigation/Removal does not adequately address structure concerns.</p> <p>ENTRIES = Mitigation/Removal does adequately address structure concerns.</p> <p>NO = Not structure related.</p> | | | |

2.4 Radiological Characterization Summary For Building GP-44

| TYPE | RSDS | LOCATION | SURVEY RESULTS (dpm/100 cm ²) | 5400.5 Guidelines for Groups 1, 3, 4 (fixed + loose) (dpm/100 cm ²) | NUREG 1500 Guidelines (loose) (dpm/100 cm ²) | Attachment 1 Limit (fixed + loose) (See Note 2.) (dpm/100 cm ²) | COMMENTS |
|---|------------------------|------------------------------------|--|---|--|---|----------|
| Highest Alpha Smearable Activity | 98-SM-036 | Room 5 | 7.499 | 20 | 211 | 20 | <AL |
| Highest Alpha Fixed Activity | 98-SM-043 98-SM-032 | Same location as all swipes. | <100 | 100 | Note 1 | 100 | <AL |
| Highest Beta Smearable Activity | 98-SM-036 | Room 3 | 7.74 | 1,000 | 9940 | 1,000 | <AL |
| Highest Beta Fixed Activity | 98-SM-043 98-SM-032 | Same location as all swipes. | <5,000 | 5,000 | Note 1 | 5,000 | <AL |
| Highest Tritium Smearable Activity | 98-SM-043 | North Wall Room 3 | 23.07 | 1,000 | Note 1 | 1,000 | <AL |
| <p>Note 1: NUREG-1500 gives guidelines for loose beta and alpha only.</p> <p>Note 2: The limits referenced above are based on MD-80043, Radiological work Requirements Procedure 400 "Transfer of Radioactive Material and Unrestricted Release of Property/Waste," Attachment 1.</p> <p>Note 3: ND=Non-Detectable Swipe</p> <p>Note 4: ND FIDLER=Non-Detectable Using FIDLER</p> <p>Note 5: AL = Action Level</p> <p>Note 6: MDA=Minimum Detectable Activity</p> | | | | | | | |

3.0 Site Description

3.1 Site/Vicinity Location and Characteristics

Building GP-44 is located at the U.S. Department of Energy Facility known as Mound Plant. Mound is situated in the city of Miamisburg, Miami Township, Montgomery County, state of Ohio.

The Mound facility is situated on 305 acres of land and contains approximately 130 buildings with a total of approximately 1.4 million square feet of floor space (the number of buildings is constantly diminishing as buildings are decommissioned and either sold or demolished). The original 182-acre site, purchased by the Manhattan Engineering District in 1946, consists of two hills and an intervening valley that runs approximately east and west. Building GP-44 is located on the Main Hill. The 124-acre tract, acquired in 1981, is an undeveloped mixture of fields and woods that undulates and slopes downward to the west, away from the main site. This area was acquired to serve as a buffer and has been used as a staging area and parking area for contractors working on-site.

To the west lies a Conrail Railroad line and the north south trending Miami-Erie Canal. The northern boundaries of the site abuts the historic residential area of Miamisburg, Ohio. Mound Road marks the northern half of the eastern perimeter of the facility then veers east, away from the southern half of the eastern boundary. A public golf course (belonging to the City of Miamisburg), the Miamisburg Mound Memorial Park, old agricultural fields, residential lots, and vacant wooded lots border against the facility along Mound Road. Benner Road forms the southern property line of the Mound Plant, with agricultural fields and farms occupying the lands beyond.

3.2 Description of Structures, Roads, Other Improvements Related to Building GP-44

Building GP-44 is a single story concrete building which was constructed in 1964 as a security entrance (Guard Post) to the SM/PP area. In 1976 the structure was "hardened" with the addition of armor plate steel on the exterior walls and with the instillation of bullet proof glass.

Potable water was provided to a drinking fountain and discharged to a storm drain. HVAC was provided by portable wall mounted units that currently remain installed in the building. There are no other structures, roads, or improvements that would impact the environmental condition of the building.

3.3 Current and Past Uses of Buildings Adjacent To Building GP-44

| Proximity to GP-44 | Building Area (Sq. Ft.) | Current Use | Past Use | Direction From Building |
|--------------------|-------------------------|-------------|------------------|-------------------------|
| SM | Demolished | N/A | Pu238 Production | West |
| Building 44 | 2480 | Storage | Cafeteria | North |

4.0 Records Review

4.1 General/Historical CERCLA Information

The Mound Plant site was identified as a contaminated site on the National Priority List under CERCLA (Superfund) in 1989. The Mound Plant site was originally listed as a consequence of historic disposal practices including use of a commercial/industrial landfill, various spills, and the use of underground storage tanks, resulting in the contamination of soils and drinking water. The original contaminants of concern were calcium cyanide, copper cyanide, plutonium and its isotopes and compounds, specifically plutonium-238, and uranium, its isotopes and compounds. The clean-up of the Mound Site was originally to be accomplished under the CERCLA mandated procedures for regulating Superfund Sites using the operable unit (OU) system to define and characterize clean-up areas. As the clean-up effort went forward, it became apparent that the Mound Site did not fit the profile for a clean-up strategy based on the operable units. The Department of Energy (DOE), the United States Environmental Protection Agency (USEPA), and the Ohio Environmental Protection Agency (OEPA) designed a new decision making process for the clean-up of Mound. The new process is known formally as a "removal site evaluation process" and informally as the "Mound 2000 process." The Mound 2000 process system divided Mound in 19 Release Blocks containing over 400 Potential Release Sites (PRSs) with approximately 200 concerned with potentially contaminated soils, and the balance with potential contamination in buildings.

In compliance with permit requirements under RCRA, the Clean Water Act (CWA), the Safe Drinking Water Act (SDWA), and the Clean Air Act (CAA), Mound Plant has applied for or has received permits for its surface water discharges, air emissions, and hazardous waste program. Mound Plant is currently operating a hazardous waste treatment and storage facility under a new RCRA Part B permit dated October 18, 1996. Mound Plant also maintains a NPDES surface water discharge permit with Facility I.D. number OH 009857. Permits for the open burning of wastes involving explosives and other fuels have been issued by the Regional Air Pollution Control Agency (RAPCA). Other operations that produce particulate or vaporous emissions are registered with RAPCA and OEPA. Mound Plant also submits annual Emergency and Hazardous Chemical Inventory forms to the OEPA, pursuant to SARA, Title III, the Emergency Planning and Community Right-to-Know Act. The 1995 version of this report indicated that no chemicals are stored in Building GP-44.

4.2 Specific Record Sources

4.2.1 Occurrence Reports

There are no occurrence reports associated with Building GP-44.

4.2.2 Spills and Releases

No spills or releases are associated with Building GP-44.

4.2.1 Associated PRS Overview

As a result of the investigations and documentation conducted to comply with the CERCLA cleanup process via the FFA/DOE ER program, DOE and EG&G Mound Applied Technologies have tabulated all the Potential Release Sites (PRSs) identified under the various regulatory program in effect at the site. Many additional contaminants of concern and types of operations were identified beyond the original NPL listing of site activities. Of these 413 PRSs, none are attributed to operations in the building. Building GP-44 is bordered by PRS 288 to the West. PRS 288 focuses on elevated levels of Pu238. However, the east side of PRS 288 was remediated. (See: OU-6, SM East Asphalt Final Verification Report.)

4.3 Review of Building Prints

Building prints were reviewed and are included in Appendix D.

4.4 Aerial Photographs

Aerial photographs from 1994, 1983, 1973, 1968, 1965, and 1959 were reviewed and copies are found in Appendix F.

Building GP-44 is visible in the photograph dated 1965.

4.5 Interviews

Discussions were conducted with the Building Manager during the walkthrough inspection on 12/9/97. Information gained is reflected in Section 2.3.

Appendix L

General Work Plan for Building GP-44

**General Work Plan
for Building GP-44
Decontamination and
Demolition at the Mound
Site, Miamisburg, Ohio**

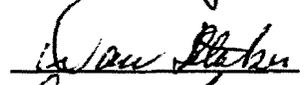
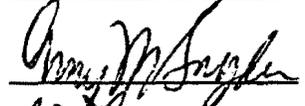
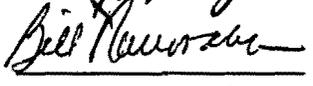
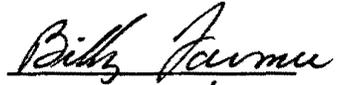
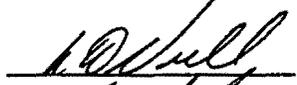
February 1998

Revision 3/12/98

Table of Contents

| Topic | Page |
|--|------|
| 1.0 General Scope of Work | 1 |
| 2.1 Structure Characterization | 1 |
| 2.2 Safe Shutdown | 2 |
| 2.3 Isolate Utilities | 3 |
| 2.4 Establish Site Access Control | 4 |
| 2.5 Interior Decontamination and Demolition Activities | 5 |
| 2.6 Structure Demolition | 6 |
| 2.7 Foundation Removal | 7 |

The following SM/PP Hill Project team members have reviewed and approved this GP-44 Work Plan:

| | | |
|---------------------------------------|--|----------------|
| Gerald Maul/Project Engineer |  | <u>3-12-98</u> |
| Dan Stokes/IS&H |  | <u>3-12-98</u> |
| Amy Snyder/Radiation Protection |  | <u>3-12-98</u> |
| Bill Naumann/Waste Coordinator |  | <u>3/12/98</u> |
| Billy Farmer/Environmental Compliance |  | <u>3/12/98</u> |
| Lynn Null/Project Superintendent |  | <u>3-12-98</u> |
| Felix Spittler/Project Manager |  | <u>3/12/98</u> |

Revisions to work plan are shown as bold print

Table of Contents page
Section 2.1 Structure Characterization
Section 2.4.2 Air Monitoring
Section 2.5.5 Regulated Waste Handling

1.0 PROJECT SCOPE

This project will remove the superstructure, slab and foundation of GP-44.

2.0 PROJECT EXECUTION

This section will address the work activities which will be executed

- 1) Perform Structure Characterization
- 2) Perform Safe Shutdown
- 3) Isolate Utilities
- 4) Establish Site Access Control
- 5) Perform Interior Decontamination and Demolition Activities
- 6) Perform Structure Demolition
- 7) Perform Foundation Removal

2.1 STRUCTURE CHARACTERIZATION

A thorough characterization was completed on the structure to provide the following information:

Physical Characterization

A complete set of building construction drawings was obtained and reviewed for accuracy. The building was constructed in 1964 as a guard entrance post and the same utilization continued with minor architectural changes occurring in 1976. The guard post was converted to a storage area in 1988 when a new entrance guard post in Building 102 was activated for the SM/PP area. There is no steam or condensate lines associated with the building. Originally, the building was heated with a propane heater and did not contain air conditioning. These systems were abandoned prior to 1976 and "window" type heating and A/C units were installed in each of the rooms. The electrical service to the building is supplied from the AF substation (near building 50) via an underground electrical duct.

On December 9, 1997 an engineering survey was performed on GP-44 - SM/PP Guard Post. The Structure (265 sq. ft.) was found to be "run-down" and is in fair condition.

Radiological Characterization

GP-44 was surveyed during January and February of 1998 as part of this project. Direct and loose contamination surveys were conducted and dose rates were taken. Smears were counted for alpha, beta and tritium. All results were less than the applicable guidelines identified in DOE Order 5400.5.

The highest "loose" alpha reading was 7.50 dpm/100 sq. cm. The highest beta reading was 7.74 dpm/100 sq. cm. The highest tritium result was 23.07 dpm/ 100 sq. cm. All direct fixed readings

were less than 100 dpm/100 sq. cm alpha and less than 5000 dpm/100sq. cm. beta. The dose rates were less than 5 mrem/hour.

Asbestos Characterization

Existing asbestos surveys were used as a basis from which to start the asbestos characterization. Additional characterization was added as necessary based on structure walk through and the information gathered during the physical characterization. Listed below are the locations where asbestos has been identified:

- Floor tile was sampled for asbestos and the results were negative.
- Ceiling tile and a wall section were sampled for asbestos and the results were negative.
- Built-up roof may contain some asbestos material but the roof is in good condition and will be removed as demolition debris.

Chemical Characterization

Chemical information was collected on the structure. This information was collected during the physical characterization and based on the walkthrough. The following items have been identified for removal as regulated materials:

- CFC's - Several "window type" air conditioning units are located in each of the rooms in GP-44. These units are charged with Freon. These units will be removed from the building prior to demolition.
- PCB's - Several florescent light fixtures are present in one room. The ballasts will be checked and removed prior to demolition.
- LEAD - The cast iron pipe joints (four fittings) on the storm water line within the building slab are packed with oakum and lead. These will be segregated after demolition of the slab.

2.2 SAFE SHUTDOWN

Safe Shutdown will be performed on the structure as required. Safe shutdown will consist of the following: Safety walkdown, inventory, securing the area, flushing of equipment and piping, and waste removal.

2.2.1 Safety Walkdown

Safety walkdown was performed on 12/9/97 by the project team. In addition, the fire protection engineer will perform a Fire Hazard Analysis (FHA) of the building prior to demolition.

2.2.2 Inventory

Members from the project team walked down the building to identify and inventory equipment and supplies contained within the structure. The items to be salvaged will be taken to building 61 or utilized by other groups at the plant. These items include old security electronic equipment, miscellaneous equipment, hand tools and materials. All property items associated with the building were located.

2.3 Isolate Utilities

The isolation of utilities associated with GP-44 will be accomplished as Maintenance activities and the normal Job Safety & Hazard Analysis (JSHA) used in maintaining and modifying utility lines on site will be utilized. These utilities include:

- Domestic water- the domestic water take-off for GP-44 has an isolation valve off the main line which requires investigation to insure the water is isolated. Should the isolation valve be in the open position, the branch line will be unearthed at the main line and the valve will be closed.
- Fire alarm lines- the fire alarm lines will be disconnected. The building does not contain a fire sprinkler system.
- Telephone lines - phone lines to be disconnected.
- Air conditioning (window type) - the units will be removed from the building prior to demolition.
- Electrical power- the electrical power is from an underground 480v/3phase line from a motor control center located in the AF Substation (ckt 4). Internal building circuits shall be checked and verified; this is to insure that electrical power in GP-44 does not effect electrical circuits in other buildings or areas. A general notification will be made to security, fire protection, and operating personnel in Building 38 and 50 prior to opening the circuit in the motor control center in the AF Substation. The circuit will be opened and the conductors will be tagged and disconnected from the disconnect switch in the motor control center. The conductors feeding GP-44 will be removed back to the motor control center. The building will be checked for possible alternate power sources.
NOTE: The security turnstile on the east side of the building needs to be mechanically secured prior to power disconnection.
- Security signal lines - a considerable number of abandoned security signal lines will be removed after verification of need. This includes alarm signal lines and video camera lines.

2.4 Establish Site Access Control

The following control zones and air monitoring controls will be established around GP-44:

2.4.1 Project Control Zones

2.4.1.1 Support Zone (SZ)

The SZ will be established around the building during the structure demolition phase of the project using orange construction fencing or barricade tape as appropriate. The zone will typically be established a distance of 75 feet from the building so that it will also delineate the demolition limits. On the east side of the building it will not be feasible to establish the 75 foot zone, due to the parking lot. However when demolition of the structure begins, the parking lot will be barricaded to ensure that the 75 foot zone is established. The SZ boundaries will delineate the construction/demolition boundary of the project.

2.4.1.2 Contamination Reduction Zone (CRZ)

A contamination reduction zone will not be required for this project.

2.4.1.3 Exclusion Zone (EZ)

An exclusion zone will not be required for this project.

2.4.2 Air Monitoring

Three types of air monitoring will be used as required during the D&D activities. They are:

- 1) Personnel Monitoring
- 2) Support Zone perimeter monitoring
- 3) Site perimeter Air monitoring

2.4.2.1 Personnel Monitoring

Personnel monitoring will be performed as required by the Job Safety & Health Analysis (JSHA). The workers will be monitored to ensure that airborne concentrations of contaminants is below action levels for the PPE being worn. Should Breathing Zone (BZ) monitoring show elevated concentrations above action levels, the work will be stopped. Engineering controls and work

practice controls will be re-evaluated, and corrective actions taken to reduce airborne levels. This monitoring is anticipated as a negative determination during demolition (**possible nonfriable asbestos in roof material**).

2.4.2.2 Perimeter Air Monitoring

Perimeter air monitoring will not be required.

2.4.2.3 Support Zone Air Monitoring

At the perimeter of the SZ, air monitoring will occur. Should the limits be exceeded, the project engineering controls will be re-evaluated and corrected. The corrections may be in the form of adding additional dust control, re-evaluation of the removal technique and equipment being used or, prewetting prior to removal. Monitoring is anticipated to insure demolition (**possible nonfriable asbestos in roof material**) is within environmental exposure limits.

2.4.2.4 Site Perimeter Air Monitoring

No additional locations will be added for this project.

2.5 Perform Interior Decontamination And Demolition Activities

Upon completion of the characterization and safe shutdown activities the following will be completed:

2.5.1 Temporary Facilities and Utilities

No temporary facilities will be required for this project.

2.5.2 Structure Utility Isolation

All non-essential utilities have been disconnected. Where possible the lines will be disconnected at the main feed outside the structure. Electrical utilities which are cut within the structure will be isolated using Lock Out Tag Out procedures. Workers will be informed which lines are still energized. Prior to structure demolition all utilities will be isolated by disconnecting outside of the structure at the main feed. This shall be verified prior to demolition by the superintendent.

2.5.3 Construction Hazard Abatement

A safety walk through was conducted to identify any unsafe structural conditions which may be present as a result of Safe Shutdown /salvage operations. The Safety walkdown was performed

by the Project Engineer, Superintendent, Industrial Safety and Health representative. No unsafe structural conditions were observed in GP-44.

2.5.4 General Housekeeping

Debris or equipment will be cleared from the perimeter of the building as required to provide safe access to the structure or active work areas. The cleared debris will be taken and disposed of in accordance with the Waste Management Plan.

Floor areas and walkways, within building superstructures, which are required for access to areas where other interior work activities will take place will be inspected for trip and slip hazards. All loose debris in these areas will be removed. Other trip hazards such as concrete curbs, floor projections, concrete pedestals etc. shall be identified and sprayed with florescent orange spray paint.

All excess material and equipment shall be removed from the building.

2.5.5 Regulated Waste Handling

The following regulated wastes requiring special handling per the Waste Management Plan (**Rev. 0 - February, 1998**) will be removed from the structure where feasible and handled in accordance with the Waste Management Plan (**Rev. 0 - February, 1998**).

1. Remove florescent light ballasts and set aside for waste coordinator, if ballasts have no warning markings concerning PCB's. If ballasts are specifically labeled "No PCB's", they can remain in the light fixture and disposed of as part of the building debris.

2.6 Perform Structural Demolition

2.6.1 Dust Control

Water misting and/or amended water shall be used for dust control during all activities which have the potential for generating dust. Haul roads shall be watered, if required to minimize dust on active haul routes.

2.6.2 Structure Demolition

1. Establish Support/Demolition Zone with orange construction fence or barricade tape as appropriate, 75 feet from building perimeter. This will require temporary closure of a section of the parking lot on the east side of the building while demolition work with heavy duty equipment is in progress.
2. Demolition will require excavators with bucket, shear and grapple. Front loaders may

also be used for loading construction debris.

3. Demolition of the building will start on the south side of the building and continue toward the north side of the building.

4. Remove misc. chain link fence & posts surrounding the building; however the integrity of the security perimeter must remain intact. Any fence post material which was below grade must be surveyed by an RCT prior to disposal.

NOTE: Any unusual or unexpected materials encountered during demolition will be set aside for examination and evaluation by the project engineer and the waste coordinator.

2.7 Foundation Removal

2.7.1 Dust Control

Water and/or amended water shall be used for dust control during all activities which have the potential for generating dust. Haul roads shall be watered, if required to minimize dust on active haul routes.

2.7.2 Foundation Demolition

The foundation removal will be accomplished using heavy equipment such as a trackhoe excavator with a mounted hoe-ram and a trackhoe with a bucket. Prior to foundation removal a review of the existing construction drawings will be conducted to identify subsurface utilities. The drawings will be marked up and provided to the field showing these features along with the limits of removal.

All "below grade" material (concrete, etc.) must be surveyed by an RCT prior to disposal.

2.7.3 Debris Sizing, Loading, Hauling and Disposal

As the structure and foundation (if required) is demolished, and debris from various work areas is encountered, the debris will be segregated into the following categories:

- Steel for Recycle - Steel such as bulletproof plate steel on building outer surfaces will be segregated for recycle unless otherwise noted in this plan. This material will only be sized to facilitate hauling.
- Cement, concrete and other masonry debris which is free of large "non-masonry" type material will be separated and transported via haulers to the construction spoils area in accordance with the Waste Management Plan.

- All other debris will be sized for loading into roll-off containers for sanitary landfill in accordance with the Waste Management Plan.

36

GP-38

118

SUPPORT ZONE (SZ)
75' FOR SHEAR

44

GP-44

GP-16

TAPE BARRICADE

EXISTING FENCE

PARKING LOT

MOUND ROAD

38



120

39

GP-44 Demolition Waste Management Plan

Rev. 0 - February, 1998

Introduction -

The purpose of this waste management plan is to identify waste streams expected to be encountered during the demolition of Guard Post 44 (GP-44), and to summarize their characterization and disposal options.

Brief History of Building and Processes-

Guard Post 44 is a 265 ft² structure constructed in 1964 as a guard entrance post for the SM/PP hill, and it served that purpose until 1988 when a new entrance guard post was activated in Building 102. Minor architectural changes were completed on 1976, altering routes through the guard post. GP-44 has been used as a storage area since 1988. The building is in fair condition. Radiological surveys verified that radiological contamination is below applicable limits. The building does not contain Radioactive Material Management Areas (RMMAs).

Plan and project scope-

This project will remove the superstructure, slab, and foundation of GP-44.

Waste Disposition Plan for GP-44 demolition-

This section will outline types of waste / waste quantities expected during GP-44 demolition. Information will be provided on the schedule for waste generation, RCRA characterization, radiological characterization, packaging requirements / mode of disposal, and any specific waste acceptance criteria that must be met for disposal.

Waste types and estimates are based on a physical examination of the building and a review of building construction drawings and construction specifications. Wastes are listed in expected order of generation.

| | |
|-------------------------------|---|
| Waste Type | Freon |
| Quantity expected | contents of cooling system unit |
| Schedule for waste generation | |
| RCRA characterization | non-hazardous |
| Radiological characterization | no radiological contamination |
| Packaging requirements | transfer to cylinder or other suitable vessel |
| Mode of disposal | reclaimed by Mound maintenance |

| | |
|-------------------------------|---|
| Waste Type | PCBs |
| Quantity expected | ballasts from fluorescent light fixtures* |
| Schedule for waste generation | |
| RCRA characterization | non-hazardous (regulated by TSCA) |
| Radiological characterization | no radiological contamination |
| Packaging requirements | bag and label for transportation to Bldg 72 |
| Mode of disposal | TBD by Hazardous Waste Operations |
| Note: | *assumed to contain PCBs unless stamped "no PCBs" |

| | |
|-------------------------------|---|
| Waste Type | Lead - from cast iron pipe fittings |
| Quantity expected | 50 lb |
| Schedule for waste generation | March 16 - 19, 1998 |
| RCRA characterization | Hazardous waste (D008), unless recycled |
| Radiological characterization | no radiological contamination |
| Packaging requirements | none |
| Mode of disposal | preferred: recycled for reuse alternate: TBD by Hazardous Waste Operations |

| | |
|-------------------------------|---|
| Waste Type | Demolition debris: Concrete / masonry |
| Quantity expected | 40 cu. yds. |
| Schedule for waste generation | March 16 - 19, 1998 |
| RCRA characterization | non-hazardous |
| Radiological characterization | no radiological contamination |
| Packaging requirements | none |
| Mode of disposal | transport to spoils area via articulated hauler stage for processing with concrete crusher |
| Special requirements | Must be free of large non-masonry objects Must be free of asbestos-containing materials |

| | |
|-------------------------------|---|
| Waste Type | Demolition debris: misc. metal |
| Quantity expected | 40 cu. yds. |
| Schedule for waste generation | March 16 - 19, 1998 |
| RCRA characterization | non-hazardous |
| Radiological characterization | no radiological contamination |
| Packaging requirements | none |
| Mode of disposal | metal recycling - transported offsite via rolloff or other suitable transportation |

| | |
|-------------------------------|---------------------------------------|
| Waste Type | Demolition debris: mixed misc. debris |
| Quantity expected | 20 cu. yds. |
| Schedule for waste generation | March 16 - 19, 1998 |
| RCRA characterization | non-hazardous |
| Radiological characterization | no radiological contamination |
| Packaging requirements | none |
| Mode of disposal | Sanitary landfill via rolloff |

Any unusual or unexpected items or wastes not addressed in this plan should be set aside for examination and evaluation by the project engineer and waste coordinator.

JOB SAFETY & HEALTH ANALYSIS

JSHA MASTER DOCUMENT CONTROL NO:

| | | | |
|--|----------------|--------------------|--|
| DATE: 3-12-98 | NEW _1_ REV | BUILDING: GP-44 | JOB: Decontamination and Demolition of Guard Post 44 (GP-44) |
| DEPARTMENT: SM/PP Hill Exit Project | | SECTION: | |
| OCCUPATIONS: Heavy Duty, Electricians, Labors, Fabrication Mechanics, Pipefitter-welder, RCT | | | |

SIGNATURES

| | |
|-------------|----------------------------|
| ORIGINATOR: | <i>[Signature]</i> 3/12/98 |
| REVIEW/REV: | |
| REVIEW/REV: | <i>[Signature]</i> 3-12-98 |
| APPROVED: | <i>[Signature]</i> 3/12/98 |
| APPROVED: | |

| | |
|--|---|
| REQUIRED PERSONAL PROTECTIVE EQUIPMENT: All other work - normal work clothes, hard hat, safety glasses, safety shoes, and work gloves Work around heavy equipment - all above plus orange vests and ear plugs | MSDS(s)/CHEMICALS ASSOCIATED WITH THE JOB: possible PCB's (Polychlorinated Biphenyls) |
|--|---|

| BASIC JOB STEPS | POTENTIAL ACCIDENT/ILLNESSES | SAFE JOB PROCEDURES |
|--|---|--|
| Break the job down into basic steps that tell what is done first, what is done next, and so on. Record the job steps in their normal order of occurrence. Describe what is done, not the details of how it is done. Usually, three or four words are sufficient to describe each job step. For example, the job of "replacing a light bulb" may break down into basic steps as follows: 1. Bring and set up ladder 2. Ascend ladder 3. Remove light globe & bulb 4. Replace light bulb 5. Replace light globe 6. Descend ladder 7. Remove and store ladder | Ask yourself for each job what accidents/illnesses could occur to the employee doing the job. Record potential accidents/illnesses by combining one of the abbreviations below with the agent of contact. For example, "struck by a crane hook" is recorded "SB-crane hook." Number each potential accident. SB - Struck by CB - Contacted by SA - Struck against CW - Contact with CI - Caught in *Show ergonomic stresses as SO (repetitive trauma, single event strain, or awkward position) CO - Caught on 1B - Caught between F - Fall SO - Strain-overexertion* E - Exposure (occ. illness) | For each potential accident/illness, ask yourself exactly what the employee should do or not do to avoid the accident/illness. Describe specific precautions in detail. Give each precaution the same number given in the potential accident (center column) to which it applies. Avoid generalities such as "Be alert," "Be careful," and "Take caution." Use simple do or don't statements; e.g., "Lock out main power switch," "Stand clear of lift before signaling," or "Check wrench grip before exerting full force." If necessary, explain how, as well as what, to do. Amount of detail is a matter of judgment. Describe ergonomic solutions (job redesign, new tools, worker lift assistance, etc.) |
| 1) Disconnect 480v power feed to bldg. | Electrical shock | Lock out - Tag out procedures per MD-10444 check & verify electrical power |
| 2) Remove light tubes, and ballasts | PCB's leaking from ballasts | Proper PPE per MSDS (attached) |
| | Fall from step ladder | Follow safe work practices and maintain good housekeeping and ladder safety per MD 10286, M14 |
| | Electrical shock | Lock out - Tag out procedures per MD-10444 |
| | Hand injuries from sharp metal and wire | Wear work gloves |
| 3) Establish Demolition Zone barrier | Hand injury install barrier fence | Wear work gloves |
| 4) Establish air monitoring & water hoses | Personnel trips/falls | Follow safe work practices & maintain good housekeeping |
| | "icing" from cold weather | salt available or stop work if temperature is too low |
| 5) Cut and remove chainlink fence | Pinches, cuts and abrasions | Wear work gloves |

**JOB SAFETY AND HEALTH ANALYSIS FORM
(CONTINUATION SHEET)**

| BASIC JOB STEPS | POTENTIAL ACCIDENT/ILLNESSES OR KNOWN HAZARDS | SAFE JOB PROCEDURES |
|---|--|--|
| 6) Demolish misc. chain link fence, structure, slab, and foundation with heavy equipment | Personnel struck by equipment | use qualified H.D. operators |
| | | H.D. operators will have two-way radios in cab |
| | | ground personnel in orange vests |
| | | personnel maintain eye contact with H.D. operators when approaching equipment |
| | | Heavy equipment to have back-up alarms |
| | Personnel struck by debris | Maintain 75 foot clear distance from shear operation and stand clear of heavy equipment during loading of debris |
| | nonfriable asbestos (roof mastic ,etc) | Personnel and perimeter monitoring |
| | Airborne concrete debris and noise exposure caused by demolition equipment | Operator protected by filtered / controlled cab. |
| | Underground slab and utilities | Work will require Excavation permit per MD-10286, O5 |
| | overhead electrical lines | provide "spotter" or Lock out - Tag out procedures per MD-10444 |
| | body vibration | trackhoe with iso-mount cab and spring cushioned seat |
| | noise | hearing protection required around heavy equipment |
| | personnel trips / falls | follow safe work practices & maintain good housekeeping |
| 7) Plug storm sewer line and cap water line | hand injuriess from sharp edges of pipes | Wear work gloves |
| 8) Backfill area using heavy equipment | See all hazards listed under item 6 | See all safe job procedures listed under item 6 |
| | | |
| | | |
| | | |

**FIRE HAZARD ANALYSIS
GUARD POST 44**

February 28, 1998

Facility Description:

The area of Guard Post 44 is approximately 365 square feet and consists of concrete masonry block construction with armor plating on three sides and a built-up roof over metal deck. Guard Post 44 is a one story building containing five rooms that have noncombustible walls and ceilings. The building is heated and cooled by self-contained electrical units. The building contains no processing equipment.

Building Function:

Guard Post 44 was constructed as a guard entry post for operations at the SM/PP area. The building is currently vacant and on the plant shutdown list, as such, it is considered to have no value.

Hazards:

There is no fuel load ($<0.5 \text{ lb/ft}^2$) and low fire hazard associated with Guard Post 44. All utilities are currently operational to the building but will be shut off for Safe Shutdown with DOE concurrence.

Exposures:

North - 17 feet to Building 44.
South - >180 feet to Building 102.
East - <250 feet to site lot line.
West - <140 feet to plant roadway.

Fire Protection Features:

The building is considered one fire area. No passive fire protection features exist for this building. The building was not protected by a sprinkler system. Guard Post 44 was protected by portable fire extinguishers along with manual pull boxes. Based on the small size of the building, egress routes, all non combustible concrete and steel construction, in an unoccupied building, "Life Safety" is not an issue.

Conclusions:

The fuel load in Guard Post 44 is negligible. The building itself is noncombustible where the type of construction, fire separation, and security of the building is such as not to create a fire hazard. No significant exposure problem exist in Guard Post 44 and also with surrounding buildings. Access will be controlled with a limited number of people having a key. The Fire Department personnel will monitor the status of the building on a monthly basis to insure current configuration until its demolition.

Written by:

Thomas D. Beal
Fire Protection Engineer

Date:

3/2/98

MONSANTO PRODUCT NAME

Polychlorinated Biphenyls (PCBs)

MONSANTO COMPANY
800 N. LINDBERGH BLVD.
ST. LOUIS, MO 63167Emergency Phone No.
(Call Collect)
314-694-1000

Date: 10/88

PRODUCT IDENTIFICATION

Synonyms: PCBs
Chlorodiphenyl (___% Cl)
Chlorinated biphenyl
Polychlorinated biphenyl
Chlorinated biphenyls
(approx. ___% Cl)

Trade Names/

Common Names: Aroclor^{®1} Series 1016, 1221, 1232, 1242, 1248, 1254, 1260
Therminol^{®1} FR Series

PYRANOL^{®2} and INERTEEN^{®3} are trademarks for commonly used dielectric fluids that may have contained varying amounts of PCBs as well as other components including chlorinated benzenes.

ASKAREL - Generic name for a broad class of fire-resistant synthetic chlorinated hydrocarbons and mixtures used as dielectric fluids that commonly contained about 30-70% PCBs. Some ASKAREL fluids contained 99% or greater PCBs and some contained no PCBs.

This list of trade names is representative of several commonly used Monsanto products (or products formulated with Monsanto products). Other trademarked PCB products were marketed by Monsanto and other manufacturers. PCBs were also manufactured and sold by several European and Japanese companies. Contact the manufacturer of the trademarked product, if not in this listing, to determine if the formulation contained PCBs.

^{®1} Registered trademark of Monsanto Company

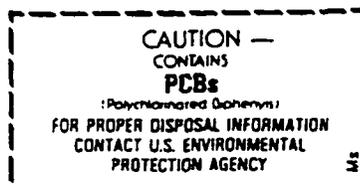
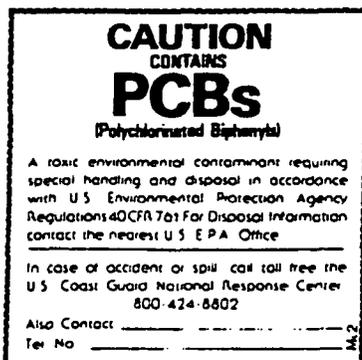
^{®2} Registered trademark of General Electric Company

^{®3} Registered trademark of Westinghouse Electric Corporation

CAS No.'s: 001336363, 053469219, 021672296, 01109769, 011096825 and others

WARNING STATEMENTS

Federal regulations under the Toxic Substances Control Act require PCBs, PCB items, storage areas, transformer vaults, and transport vehicles to be marked. (check regulations, 40 CFR 761, for details)



MATERIAL SAFETY DATA Polychlorinated Biphenyls (PCBs)

PRECAUTIONARY MEASURES

Care should be taken to prevent entry into the environment through spills, leakage, use, vaporization, or disposal of liquid or containers. Avoid prolonged breathing of vapors or mists. Avoid contact with eyes or prolonged contact with skin. If skin contact occurs, remove by washing with soap and water. Following eye contact, flush with water. In case of spillage onto clothing, the clothing should be removed as soon as practical, skin washed, and clothing laundered. Comply with all federal, state, and local regulations.

EMERGENCY AND FIRST AID PROCEDURES

- Ingestion:** Consult a physician. Do not induce vomiting or give any oily laxatives. NOTE TO PHYSICIAN—If large amounts are ingested, gastric lavage is suggested.
- Skin:** If liquid or solid PCBs are splashed or spilled on skin, contaminated clothing should be removed and the skin washed thoroughly with soap and water. NOTE TO PHYSICIAN—Hot PCBs may cause thermal burns.
- Eyes:** Eyes should be irrigated immediately with copious quantities of running water for at least 15 minutes if liquid or solid PCBs get into them. A petrolatum-based ophthalmic ointment may be applied to the eye to relieve the irritating effects of PCBs.
- Inhalation:** Remove to fresh air. If skin rash or respiratory irritation persists, consult a physician. NOTE TO PHYSICIAN—If electrical equipment arcs over, PCBs or other chlorinated hydrocarbon dielectric fluids may decompose to produce HCl, hydrochloric acid, a respiratory irritant.

OCCUPATIONAL CONTROL PROCEDURES

- Eye Protection:** Wear chemical splash goggles and have eye baths available where there is significant potential for eye contact.
- Skin Protection:** Wear appropriate protective clothing and chemical resistant gloves to prevent skin contact. Consult glove manufacturer to determine appropriate type glove for given application. Wear chemical goggles, face shield, and chemical resistant clothing such as a rubber apron when splashing is likely. Wash immediately if skin is contaminated. Remove contaminated clothing promptly and launder before reuse. Clean protective equipment before reuse. Provide a safety shower at any location where skin contact can occur. Wash thoroughly after handling.
ATTENTION! Repeated or prolonged contact may cause chloracne in some people.
- Respiratory Protection:** Avoid breathing vapor or mist. Use NIOSH/MSHA approved equipment when airborne exposure limits are exceeded. Full facepiece equipment is recommended and, if used, replaces need for face shield and/or chemical splash goggles. Consult respirator manufacturer to determine the type of equipment for a given application. The respirator use limitations specified by NIOSH/MSHA or the manufacturer must be observed. High airborne concentrations may require use of self-contained breathing apparatus or supplied air respirator. Respiratory protection programs must be in compliance with 29 CFR Part 1910.134.
- Ventilation:** Provide natural or mechanical ventilation to control exposure levels below airborne exposure limits (see below). If practical, use local mechanical exhaust ventilation at sources of air contamination such as open process equipment.
- Airborne Exposure Limits:** Chlorinated biphenyl (approximately 42% chlorine)
- OSHA PEL: 1 mg/m³ 8-hour time-weighted average - Skin*
 - ACGIH TLV: 1 mg/m³ 8-hour time-weighted average - Skin*
 - 2 mg/m³ short-term exposure limit - Skin*

*Skin notation means that skin absorption of this material may add to the overall exposure. Avoid skin contact.

(OCCUPATIONAL CONTROL PROCEDURES continued on page 3)

Polychlorinated Biphenyls (PCBs)

MATERIAL SAFETY DATA

OCCUPATIONAL CONTROL PROCEDURES (continued)

Airborne

Exposure Limits

(Continued):

Chlorinated biphenyl (approximately 54% chlorine)

OSHA PEL: 0.5 mg/m³ 8-hour time-weighted average - Skin*

ACGIH TLV: 0.5 mg/m³ 8-hour time-weighted average - Skin*

1 mg/m³ short-term exposure limit - Skin*

*Skin notation means that skin absorption of this material may add to the overall exposure. Avoid skin contact.

FIRE PROTECTION INFORMATION

Fire and

Explosion:

PCBs are fire-resistant compounds. They may decompose to form CO, CO₂, HCl, phenolics, aldehydes and other toxic combustion products under severe conditions such as exposure to flame or hot surfaces.

At temperatures in the range of 600-650°C in the presence of excess of oxygen PCBs may form polychlorinated dibenzofurans (PCDFs). Laboratory studies under similar conditions have demonstrated that PCBs do not produce polychlorinated dibenzo-p-dioxins (PCDDs).

PCBs in electrical equipment have been reported to produce both chlorinated dioxins (PCDDs) and furans (PCDFs) during fire situations. These combustion products may result all, or in part, from non-PCB components of the dielectric fluids or other combusted materials. Consult the equipment manufacturer for information regarding composition of the dielectric fluids in electrical apparatus.

Standard fire fighting wearing apparel and self-contained breathing apparatus should be worn when fighting fires that involve possible exposure to chemical combustion products. Fire fighting equipment should be thoroughly cleaned and decontaminated after use.

Federal regulations require all PCB transformers to be registered with fire response personnel.

If a PCB transformer is involved in a fire-related incident, the owner of the transformer may be required to report the incident. Consult and follow appropriate federal, state, and local regulations.

REACTIVITY DATA

PCBs are very stable, fire-resistant compounds.

HEALTH EFFECTS SUMMARY

Skin Contact: PCBs can be absorbed through intact skin. Local action on skin is similar to that of common organic solvents where contact leads to removal of natural fats and oils with subsequent drying and cracking of the skin. A potential exists for contracting chloracne.

Eye Contact: The liquid products and their vapors are moderately irritating to eye tissues.

Ingestion: The acute oral toxicities of the undiluted compounds are: LD₅₀ rats—8.65 gm/kg for 42% chlorinated, and 11.9 gm/kg for 54% chlorinated—"slightly toxic."

Inhalation: Animal experiments of varying duration and at different air concentrations show that for similar exposure conditions, the 54% chlorinated material produces more liver injury than the 42% chlorinated material.

(HEALTH EFFECTS SUMMARY continued on page 4)

MATERIAL SAFETY DATA
Polychlorinated Biphenyls (PCBs)

HEALTH EFFECTS SUMMARY (continued)

Other:

There are literature reports that PCBs can impair reproductive functions in monkeys. The National Cancer Institute performed a study in 1977 using Aroclor 1254 with both sexes of rats. NCI stated that the PCB, Aroclor 1254, was not carcinogenic under the conditions of their bioassay. There is sufficient evidence in the scientific literature to conclude that Aroclor 1260 can cause liver cancer when fed to rodents at high doses. Similar experiments with less chlorinated PCB products have produced negative or equivocal results.

The consistent finding in animal studies is that PCBs produce liver injury following prolonged and repeated exposure by any route, if the exposure is of sufficient degree and duration. Liver injury is produced first, and by exposures that are less than those reported to cause cancer in rodents. Therefore, exposure by all routes should be kept sufficiently low to prevent liver injury.

Numerous epidemiological studies of humans, both occupationally exposed and non-worker environmentally exposed populations, have not demonstrated any causal relationship between PCB exposures and chronic human illnesses such as cancer or neurological or cardiovascular effects. PCBs can cause dermatological symptoms; however, these are reversible upon removal of exposure source.

PCBs are identified as hazardous chemicals under criteria of the OSHA Hazard Communication Standard (29 CFR Part 1910.1200). PCBs have been listed in the International Agency for Research on Cancer (IARC) Monographs (1987)-Group 2A and in the National Toxicology Program (NTP) Annual Report on Carcinogens (Fourth).

PHYSICAL DATA

PROPERTIES OF SELECTED AROCLORS[®]

| PROPERTY | 1016 | 1221 | 1232 | 1242 | 1248 | 1254 | 1260 |
|--|-----------------------|--------------------|--------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Color (APHA) | 40 | 100 | 100 | 100 | 100 | 100 | 150 |
| Physical state | mobile oil | mobile oil | mobile oil | mobile oil | mobile oil | viscous liquid | sticky resin |
| Stability | inert | inert | inert | inert | inert | inert | inert |
| Density (lb/gal 25°C) | 11.40 | 9.85 | 10.55 | 11.50 | 12.04 | 12.82 | 13.50 |
| Specific gravity x/15.5°C | 1.36-1.37 x-25° | 1.18-1.19 x-25° | 1.27-1.28 x-25° | 1.30-1.39 x-25° | 1.40-1.41 x-65° | 1.49-1.50 x-65° | 1.55-1.56 x-90° |
| Distillation range (°C) | 323-356 | 275-320 | 290-325 | 325-366 | 340-375 | 365-390 | 385-420 |
| Acidity mg KOH/g, maximum | .010 | .014 | .014 | .015 | .010 | .010 | .014 |
| Fire point (°C) | none to boiling point | 176 | 238 | none to boiling point |
| Flash point (°C) | 170 | 141-150 | 152-154 | 176-180 | 193-196 | none | none |
| Vapor pressure (mm Hg @ 100°F) | NA | NA | 0.005 | 0.001 | 0.00037 | 0.00006 | NA |
| Viscosity (Saybolt Univ. Sec. @ 100°F) (centistokes) | 71-81 13-16 | 38-41 3.6-4.6 | 44-51 5.5-7.7 | 82-92 16-19 | 185-240 42-52 | 1800-2500 390-540 | — — |

NA—Not Available

Polychlorinated Biphenyls (PCBs)

MATERIAL SAFETY DATA

SPILL, LEAK & DISPOSAL INFORMATION

Cleanup and disposal of liquid PCBs and other PCB items are strictly regulated by the federal government. The regulations are found at 40 CFR Part 761. Consult these regulations as well as applicable state and local regulations prior to any disposal of PCBs, PCB items, or PCB-contaminated items.

If PCBs leak or are spilled, the following steps should be taken immediately:

All non-essential personnel should leave the leak or spill area.

The area should be adequately ventilated to prevent the accumulation of vapors.

The spill/leak should be contained. Loss to sewer systems, navigable waterways and streams should be prevented. Spills/leaks should be removed promptly by means of absorptive material, such as sawdust, vermiculite, dry sand, clay, dirt or other similar materials, or trapped and removed by pumping or other suitable means (traps, drip-pans, trays, etc.).

Personnel entering the spill or leak area should be furnished with appropriate personal protective equipment and clothing as needed. See Occupational Control Procedures section of this MSDS.

Personnel trained in the emergency procedures and protected against the attendant hazards should shut off sources of PCBs, clean up spills, control and repair leaks and fight fires in PCB areas.

All wastes and residues containing PCBs (e.g., wiping cloths, absorbent material, used disposable protective gloves, clothing, etc.) should be collected, placed in proper containers, marked and disposed of in the manner prescribed by EPA regulations (40 CFR Part 761) and applicable state and local regulations.

Various federal, state and local regulations may require immediate reporting of PCB spills and may also define spill clean-up levels. Consult your attorney or appropriate regulatory officials for information relating to spill reporting and spill clean-up.

ENVIRONMENTAL INFORMATION

Care should be taken to prevent entry of PCBs into the environment through spills, leakage, use, vaporization or disposal of liquids or solids. PCBs can accumulate in the environment and can adversely affect some animals and aquatic life. In general, PCBs have low solubility in water, are strongly bound to soils and sediments, and are slowly degraded by natural processes in the environment.

ADDITIONAL COMMENTS

Polychlorinated Biphenyls

For regulatory purposes, under the Toxic Substances Control Act the term "PCBs" refers to a chemical substance limited to the biphenyl molecule that has been chlorinated to varying degrees or any combination of substances which contain such substance (40 CFR Part 761).

Chemically, commercial PCBs are defined as a series of technical mixtures, consisting of many isomers and compounds that vary from mobile oily liquids to white crystalline solids and hard non-crystalline resins. Technical products vary in composition, in the degree of chlorination and possibly according to batch.

The mixtures generally used contain an average of 3 atoms of chlorine per molecule (42% chlorine) to 5 atoms of chlorine per molecule (54% chlorine). They are used as components of dielectric fluids in transformers and capacitors. Prior to 1972, PCB applications included heat transfer media, hydraulic and other industrial fluids, plasticizers, carbonless paper, paints, inks and adhesives.

In 1972 Monsanto restricted sales of PCBs to applications involving only closed electrical systems (transformers and capacitors). In 1977 all manufacturing and sales were voluntarily terminated. In 1979 EPA restricted the manufacture, processing, use, and distribution of PCBs to specifically exempted and authorized activities.

DATE: 10/1/88

SUPERSEDES: All prior to 10/1/88

FOR ADDITIONAL NON-EMERGENCY INFORMATION, CONTACT:

John H. Craddock
Product & Environmental Safety Director

Paul R. Michael
Product & Environmental Safety Manager

Environmental Policy Staff
Monsanto Company
800 North Lindbergh Boulevard
St. Louis, Missouri 63167
(314) 694-4764

Polychlorinated Biphenyls (PCBs)

MATERIAL SAFETY DATA

Note: Although the information and recommendations set forth (hereinafter "Information") are presented in good faith and believed to be correct as of the date hereof, Monsanto Company makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will Monsanto Company be responsible for damages of any nature whatsoever resulting from the use of or reliance upon information. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH INFORMATION REFERS.