OVERSIZE PAGES

LOCATED AT

END OF

DOCUMENT

Admin. Record

BWX Technologies, Inc.
Babcock & Wilcox, a McDermott company

Babcock & Wilcox of Ohio, Inc.
1 Mound Road
P.O. Box 3030
Miamisburg, Ohio 45343-3030
(937) 865-4020

ESC-126/99
July 14, 1999

99-TC/07-14

Mr. Richard B. Provencher, Director
Miamisburg Environmental Management Project
U.S. Department of Energy
P.O. Box 66
Miamisburg, OH 45343-0066

ATTENTION: Dewain Eckman

SUBJECT: Contract No. DE-AC24-97OH20044
M BUILDING: RELEASE OF BUILDING DATA PACKAGE FOR REGULATOR REVIEW

REFERENCE: Statement of Work Requirement C 7.1e -- Regulator Reports

Dear Mr. Provencher:

The attached Building Data Package for M Building has been authorized for release to USEPA, OEPA, ODH, and the Public Reading Room by Frank Schmaltz of MEMP. In review of 40CFR300.415(b)(2), the demolition of this building has been determined to be a non-CERCLA event. Also attached is a copy of the newspaper ad announcing the availability of this Building Data Package at the Public Reading Room.

Please advise if additional copies are required for distribution within DOE. If you require further information, please contact Dave Rakel at extension 4203.

Sincerely,

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

LRB/nmg

Enclosures as stated

cc: Tim Fischer, USEPA, (1) w/attachment
Brian Nickel, OEPA, (1) w/attachment
Ruth Vandegrift, ODH, (1) w/attachment
Terrence Tracy, DOE/HQ, (1)w/attachment
Art Kleinrath, MEMP, (1) w/attachment
Budd Thompson, BWO, (1) w/attachment
Bob Ransbottom, BWO, (1) w/attachment
Dann Bird, MMCIC, (1) w/attachment
Public Reading Room, (5) w/attachment
Administrative Record, (2) w/attachment
DCC

MOUND

Environmental
Restoration
Program

OhioEPA

MOUND PLANT
BUILDING DATA PACKAGE
Information Notice

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

Questions can be referred to Paul Lucas at (937) 865-4578.

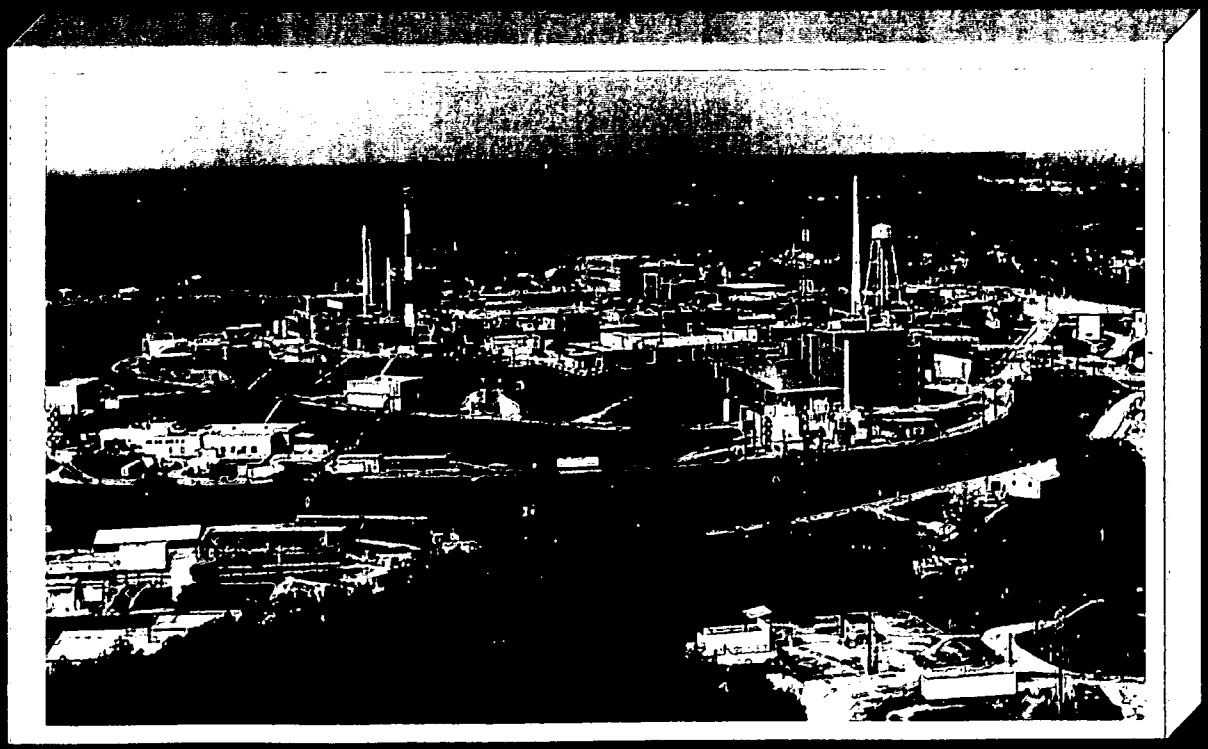
9907150002

MOUND

Environmental Restoration Program

OhioEPA

MOUND PLANT
Building Data Package
M Building



BDP M ilding

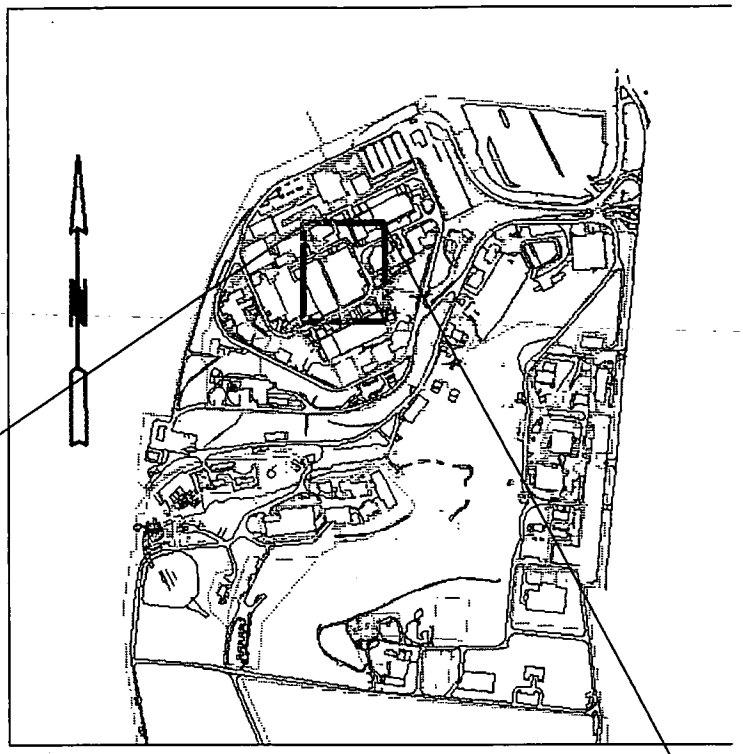
REV	DESCRIPTION	DATE
WORKING DRAFT		July 13, 1999
DRAFT	DOE comments incorporated. External building radiological data incorporated.	July 14, 1999
DRAFT PROPOSED FINAL		July 14, 1999
PUBLIC REVIEW DRAFT		July 14, 1999
FINAL		July 14, 1999

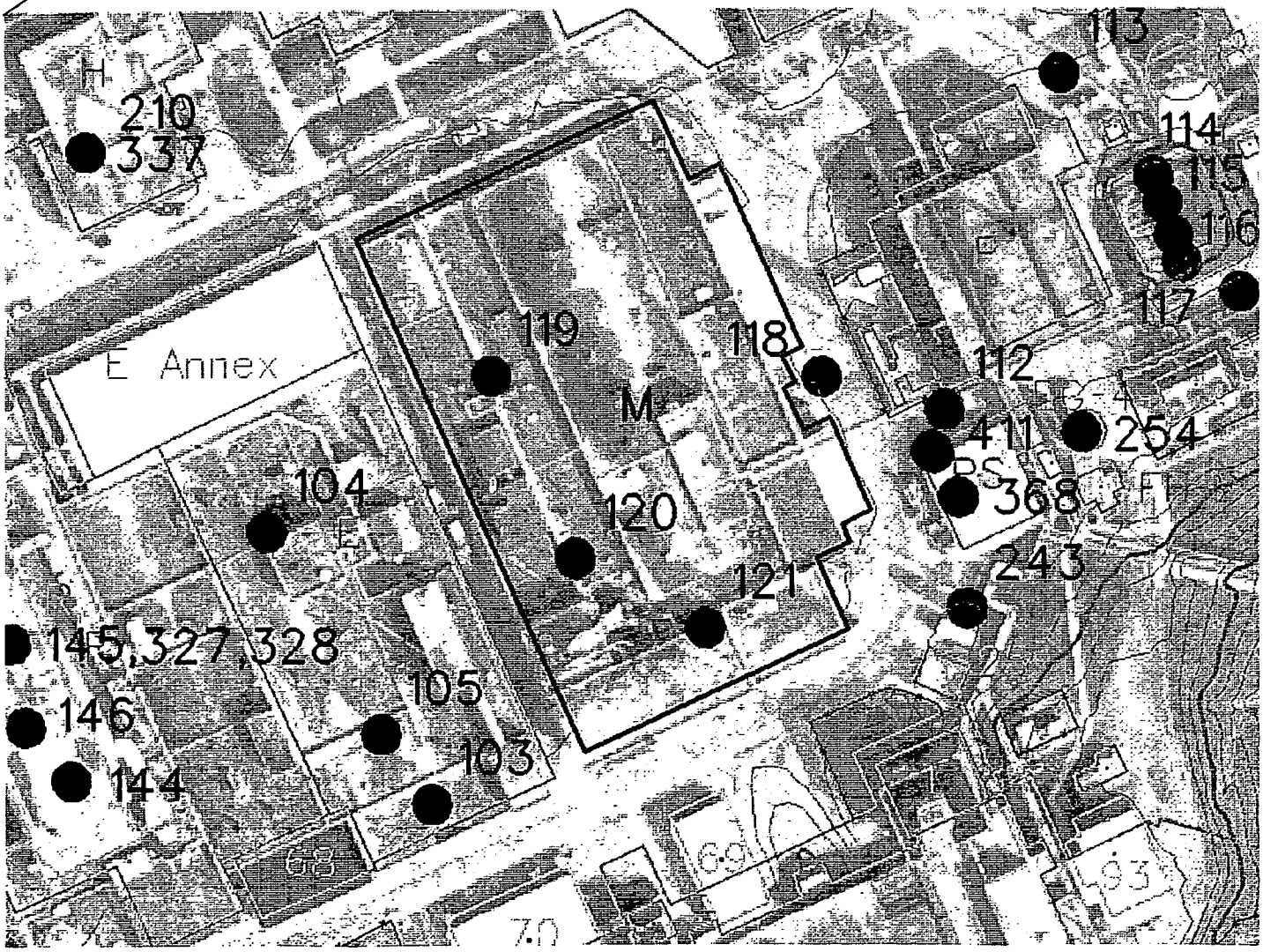
Mound Plant
Building Data Package
M BUILDING

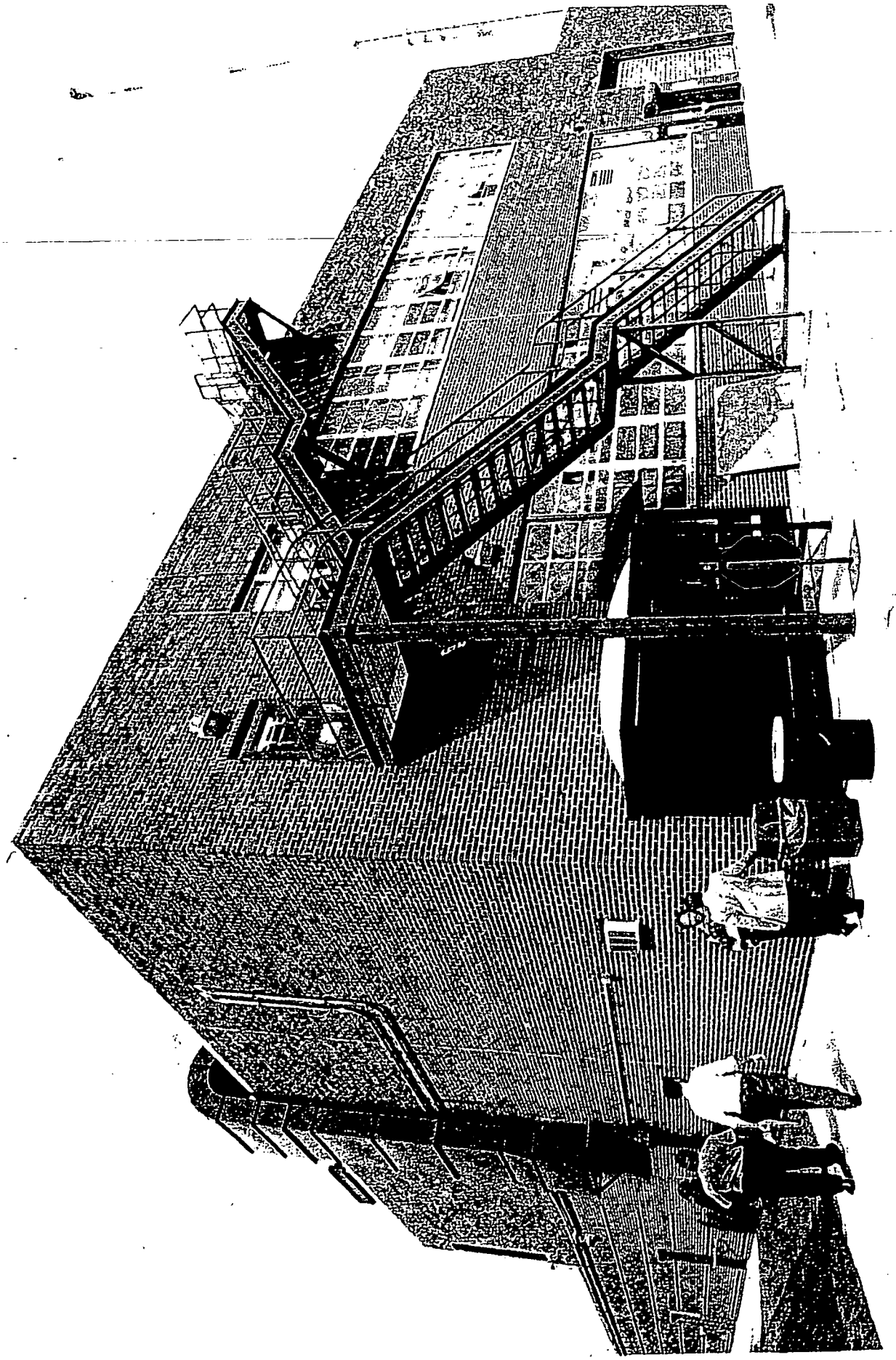
Mound Plant
M Building

Machine Shops, Electronic Shop, Plating Facility

On the map below:
- Building number and location shown in black
- PRS locations and numbers shown in blue
- Surrounding buildings shown in tan
- Fencing shown in red
- Elevation contours shown in brown







Mound Plant Building M

9.18-97

BUILDING DATA PACKAGE (BDP)

M BUILDING

(Non-CERCLA Demolition)

DOE MOUND PLANT

MIAMISBURG, OHIO 45343

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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 air, ground, ground water, or surface water near the building.

1.2 Scope

This document has been prepared in accordance with the agreements and requirements as specified in the *Work Plan For Environmental Restoration Of The DOE Mound Site, The Mound 2000 Approach*. It is a Building Data Package of M Building 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 1527-97).

The scope of the investigation included the building, the soil beneath, and a 15-foot wide perimeter border around the building. Soil sampling results are noted in Appendix L. This perimeter includes roadways, sidewalks, pavement, and grass covered areas. The investigation of M Building 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
      - Soil sampling
      - Lead paint
      - Asbestos
      - Radon

Building investigations were conducted by BWO personnel.

This report used a variety of previous assessments completed by BWO 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 Report of the Mound Plant, March 1996
- Appropriate Potential Release Site (PRS) Documents
- Title Search
- Phase I Environmental Site Assessment of DOE Mound, M Building
- M Building Historic American Building Survey
- Operable Unit 9, Site Scoping Report: Volume 11 - Spills and Response Actions

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 approximately 300 acres of land and contains approximately 130 buildings. The subject property consists of Mound Plant M Building, the soil beneath, and a 15-foot wide perimeter around the Building. M Building contains 56,000 square feet. It was constructed in 1948.

2.1 Current Uses of M Building

M Building is currently inactive.

2.2 Past Uses of M Building

M Building is the former machine shop and housed electroplating operations. These functions are no longer accomplished in M Building. Most recently, the building served as an excess material staging and storage area. No research activities using radioactive or energetic materials have occurred in the building. However, Uranium (U-238) was machined in M Building.

2.3 Summary of Environmental Concerns and Findings - M Building

DESCRIPTION	COMMENT	RESOLUTION
Lead Paint	Due to the age of the building, lead paint is expected.	Leave the paint intact on the building surfaces. When structure is demolished the debris which has the lead paint will not be hazardous waste and will therefore be disposed of as construction debris at a local landfill.
Chemicals	Plating shop and machining chemicals were used in the building.	All chemicals were removed from the building.
Fluorescent Lamps	Fluorescent lamps were utilized in the building.	All fluorescent lamps will be removed prior to demolition.
Asbestos	The building does contain asbestos-containing materials.	Abatement of ACMs has been accomplished.
Drainage Sumps	Sediment in M-38 plating shop sump had elevated radiological and heavy metal readings.	Sump will be removed during demolition and surrounding soils will be characterized.
Lead	Lead Electrical Conduit	Will be removed as construction debris.
HVAC	N/A	
Mercury	N/A	
Radiological	Several fixed contamination areas were identified.	Fixed contamination removed/will be removed as part of decontamination/demolition process.
Septic Systems	N/A	
Waste Water	N/A	
Stains & Corrosion	N/A	
Space	N/A	
Storage Tanks	N/A	
Solid Waste Disposal	N/A	
Migratory Hazards	N/A	
Radon	N/A	
REC - See Appendix N. PRS 118 - M Building Soils	Elevated VOCs - Soil Gas Survey. Copper cyanide, silver cyanide, machine oils, solvents.	Soils will be characterized and disposed of accordingly.

REC - See Appendix N. PRS 119 - Room M-38 Metal Plating Rinse Water Sump Tank (Tank 225)	Rinse water from plating operations. Inactive tank still connected to sanitary sewer system.	Tank will be removed and surrounding areas will be characterized and handled accordingly.
REC - See Appendix N. PRS 120 - Room M-108 Metal Plating Rinse Water Tank (Tank 119)	Rinse water from plating operations. Inactive tank still connected to sanitary sewer system.	Tank will be removed and surrounding areas will be characterized and handled accordingly.
PRS 121 - Vapor Degreasers See Appendix N.	Plating Shop Parts Cleaning	Degreasers cleaned. Will be removed and surrounding areas will be characterized and handled accordingly.
REC - See Appendix N. Oil leaks on wood block floor	Possible saturation of floor and concrete with machine oils and solvents.	Wood block floor removed.
REC - See Appendix N. Integrity of concrete slab beneath the oil quench tank	Possible fractured slab and resultant soil contamination	Slab will be removed and surrounding areas will be characterized and handled accordingly.
REC - See Appendix N. Ventilation/exhaust duct work and related equipment	Potential residual plating compounds, machine oils, and milled metal dust	Inspection revealed no contamination. Duct work to be removed.
REC - See Appendix N. Stored Cylinders	Should be checked for proper storage and labeling procedures. Verify content.	Cylinders properly marked and stored. Will be removed.
REC - See Appendix N. PCB containing electrical transformers/fluorescent light ballasts	Should be inspected and cleaned as required and disposed of as required.	Items will be removed and disposed of as required.
REC - See Appendix N. Room 42 beryllium copper plating and/or milling	Exhaust collector may contain residual beryllium dust. Safety and health protocols should be followed.	Safety and health protocols will be followed. Inspection reveals no beryllium dust.
REC - See Appendix N. Uranium milling or machining, exact location unknown.	D&D activities must be researched. Appropriate actions must be taken.	Uranium found on wood block floor. Floor removed.
REC - See Appendix N. Pressing/canning of lithium deuteride	D&D activities must be researched. Appropriate actions must be taken.	Inspection revealed no evidence of this contamination.
REC - See Appendix N. Reported lithium hydride deuteride and tritide operations.	D&D activities must be researched. Appropriate actions must be taken.	Inspection revealed no evidence of this contamination.

REC: Recognized Environmental Condition. Note paragraph 1.1 and Appendix N.

2.4 Radiological Characterization Summary For M Building

Interior					
TYPE	RSDS	LOCATION	SURVEY RESULTS (dpm/100 cm²)	Surface Contamination Guidelines (dpm/100 cm²) (Note 2)	COMMENTS
Highest Alpha Smearable Activity	98-M-005	Room 8 High Bay (N)	17.42	20	
Highest Alpha Fixed Activity	Note 1	Note 1	<100	100	
Highest Beta Smearable Activity	98-M-013	Room 8 High Bay (S)	156.55	1,000	
Highest Beta Fixed Activity	Note 1	Note 1	<5,000	5,000	
Highest Tritium Smearable Activity	99-M-060	Room 31	1,383	10,000	

Exterior					
TYPE	RSDS	LOCATION	SURVEY RESULTS (dpm/100 cm²)	Surface Contamination Guidelines (dpm/100 cm²) (Note 2)	COMMENTS
Highest Alpha Smearable Activity	99-M-264	High Bay Roof Area 2	8.84	20	
Highest Alpha Fixed Activity	Note 1	Note 1	<100	100	
Highest Beta Smearable Activity	99-M-290	Roof Area 5 P.H. 250 P	12.60	1,000	
Highest Beta Fixed Activity	Note 1	Note 1	<5,000	5,000	
Highest Tritium Smearable Activity	99-M-288	High Bay Roof Area 2	41.04	10,000	

Note 1: All RSDS associated with the confirmatory survey were <100 dpm/100 cm² alpha and <5,000 dpm/100 cm² beta.

Note 2: Core Team determined values.

RSDS: Data sheet that provides radiological monitoring survey results.

Comment:: See Appendix G, Attachments 1 and 2 (interior) for RSDS associated with building release. See Appendix G, Attachments 3 and 4 (exterior) for RSDS associated with building release.

2.5 Associated PRS Table for M Building

PRS #	CERCLA or BLDG. RELATED	BINNING STATUS	COMMENTS
PRS 118	M Building related	TBD	M Building soils
PRS 119	M Building related	TBD	Room M-38 Metal Plating Rinse Water Sump (Tank 225)
PRS 120	M Building related	TBD	Room M-108 Metal Plating Rinse Water Tank (Tank 119)
PRS 121	M Building related	TBD	Vapor Degreasers

3.0 Site Description

3.1 Site/Vicinity Location and Characteristics

M Building 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 approximately 300 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 Engineer District in 1946, consists of two hills and an intervening valley that runs approximately east and west. M Building is located on the Main Hill of the Plant site. 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. See introductory maps and Appendix C.

To the west lies a railroad line and the north south trending Miami-Erie Canal. The northern boundaries of the site abut the 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 M Building

The subject property consists of the Mound Plant M Building footprint, the soil beneath, and a 15-foot wide perimeter around the building. M Building contains 56,000 square feet. It was constructed in 1948.

There are no other structures, roads, or improvements that would impact the environmental condition of the building. Above ground brine and electrical lines are in proximity to the building. They will remain in place. Also remaining in place is an electrical substation located at the north end of the building.

3.3 Current and Past Uses of Buildings In Proximity To M Building

See Introductory Maps and Appendix C.

Proximity to M Building	Building Area (Sq. Ft.)	Current Use	Past Use	Direction From Building
E Building (and E Annex)	47,755	Offices	Analytical Services, Production, Offices	W
PS Building	2,288	Removed	Paint Shop	E
P Building	15,143	Power House (Steam, Brine, Air)	Power House (Steam, Brine, Air)	E
Building 40	12,227	Print Shop	Print Shop	NE

4.0 Records Review

4.1 General/Historical CERCLA Information

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 storage facility under a 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 1998 version of this report indicated that no chemicals are stored in M Building in quantities above the regulatory thresholds.

The Mound Plant 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 VOC contamination in the western end of the lower valley area. 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 into 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 or associated primarily with building operations.

4.2 Specific Record Sources

4.2.1 Occurrence Reports

Six occurrence reports were generated against M Building. No occurrences resulted in negative impacts on environmental safety and health. See Appendix M.

4.2.2 Spills and Releases

Two events involving fire protection/suppression systems occurred: one in 1990 and one in 1995. See occurrence reports ALO-DA-EGGM-EGGMAT04-1990-0012 and OH-MB-EGGM-EGGMAT04-1995-0003 in Appendix M. Additionally, reference is made to Appendix P, Operable Unit 9, Site Scoping Report: Volume 11 - Spills and Response Actions. M Building events are noted on pages 2-8, 2-9, 2-10, 2-16, and 2-17.

4.2.3 Associated PRS Overview

As a result of the investigations and documentation accomplished to comply with the CERCLA cleanup process via the FFA/DOE ER program, DOE and BWO have tabulated all the Potential Release Sites identified under the various regulatory programs in effect at the site. Of these 420 PRSs, PRSs 118, 119, 120, and 121 are attributed to M Building. See paragraph 2.5 and Appendix N.

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, 1959, and 1949 were reviewed and copies are found in Appendix E.

4.5 Interviews

The Building Manager, Gary Weidenbach, was interviewed using a building manager questionnaire. See Appendix F.

Appendix A

General Listing of Acronyms

AEA	Atomic Energy Act of 1954
AEC	Atomic Energy Commission
ACM	Asbestos Containing Materials
AL	Action Level
ASTM	American Society for Testing and Materials
BDP	Building Data Package
BUSTR	Bureau of Underground Storage Tank Regulations
BWO	Babcock and Wilcox of Ohio
CAA	Clean Air Act
CEG	Conditionally Exempt Generator
CERCLA	Comprehensive Environmental Response, Compensation & Liability Act
COD	Chemical Oxygen Demand
CWA	Clean Water Act
D&D	Decontamination and Decommissioning
DOE	U.S. Department of Energy
DPM	Disintegrations Per Minute
EMF	Electromagnetic Field
EPA	U.S. Environmental Protection Agency
ER	Environmental Restoration (Program)
ERDA	Energy Research and Development Administration
ERNS	Emergency Response Notification System

FFA	Federal Facility Agreement
FINDS	Facility Index System
FS	Feasibility Study
GSA	General Services Administration
HEPA	High Efficiency Particulate Air
LQG	Large Quantity Generator
LUST	Leaking Underground Storage Tank
M&O	Maintenance and Operations
MAT	Mound Applied Technologies
MCC	Monsanto Chemical Company
MEMP	Mound Environmental Management Project
MMCIC	Miamisburg Mound Community Improvement Corporation
MRC	Monsanto Research Corporation
NPDES	National Pollutant Discharge Elimination System
OEPA	Ohio Environmental Protection Agency
ORPS	Occurrence Reporting and Processing System
OU	Operable Unit
PADS	PCB Activity Database
PCB	Polychlorinated Biphenyls
PRS	Potential Release Site

RAPCA	Regional Air Pollution Control Agency
RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Condition
RI	Remedial Investigation
RSDS	Radiological Survey Data Sheet
SARA	Superfund Amendments and Reauthorization Act
SDWA	Safe Drinking Water Act
SQG	Small Quantity Generator
SWMU	Solid Waste Management Unit
TRIS	Toxic Chemical Release Inventory System
TSD	Treatment, Storage, & Disposal Facility
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VOC	Volatile Organic Compound

Appendix B

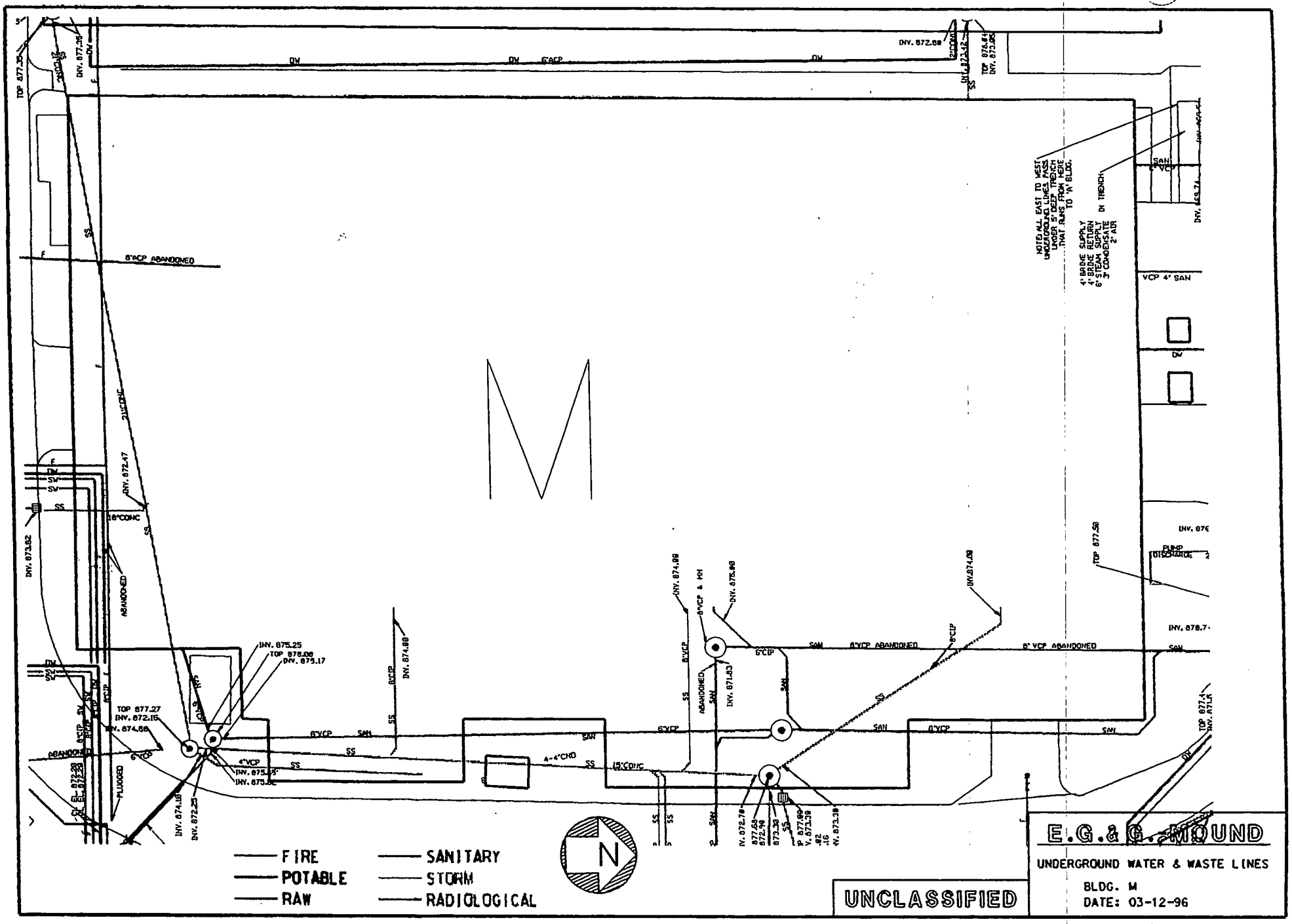
Map of Montgomery County

Appendix C

Site Plan

Appendix D

Building Drawings


M
N
FIRE
POTABLE
RAW
SANITARY
STORM
RADIOLOGICAL
UNCLASSIFIED
E.G.&G. MOUND
UNDERGROUND WATER & WASTE LINES
BLDG. M
DATE: 03-12-96
6"ACP ABANDONED
6"ACP
16"CONC
21"CONC
15"CONC
4-4"CND
6"VCP
8"VCP
8"VCP ABANDONED
6"CIP
VCP 4" SAN
4" BRINE SUPPLY
4" BRINE RETURN
6" STEAM SUPPLY
3" CONDENSATE
2" AIR
DI TRENCH
NOTE: ALL EAST TO WEST UNDERGROUND LINES PASS UNDER 5' DEEP TRENCH THAT RUNS FROM HERE TO 'M' BLDG.
PUMP DISCHARGE
PLUGGED
ABANDONED

Appendix E

Aerial Photographs

Appendix F

Environmental Appraisal Report of the Mound Plant (Extract)

and

Integrated Environmental Management Report (IEMP) Appraisal

9.18 BUILDING M

9.18.1 Scope of Building M Report

In late 1995 and the early months of 1996, EG&G MAT performed a review of environmental conditions at the Mound Plant. The purpose was to develop a performance baseline, and to identify areas for improvement on a building and a sitewide basis. EG&G MAT did not perform a "due diligence" or Phase I Environmental Site Assessment as specified by ASTM 1527 or ASTM 1528. The scope of the appraisal effort and a discussion of the appraisal methodology are detailed in Sections 2.0 and 5.0, found in Volume 1 of this report.

The appraisal team performed a walk-through of Building M on February 7, 1996. The Environmental Appraisal Checklist (EAC) was used to record findings. The EAC is found in Attachment 1 (Section 9.18.6.1). The appraisers were accompanied by the building manager. Other information was supplied by the building manager and recorded on the Building Manager's Questionnaire (BMQ), included as Attachment 2 (Section 9.18.6.2).

9.18.2 Description of Building M

Building M is a two-story structure of concrete block with brick facing. The roof is metal and built-up membrane of coal tar and asphalt. Building M was one of the original buildings constructed in 1948 and it is located on the main hill as shown in Attachment 3 (Section 9.18.6.3). The building is bordered on three sides by a roadway. Adjacent buildings are Building C to the north, Building P to the east, Building DS to the south, and Building E to the west. The building is serviced by central steam for heat, chilled water, and electrical service of 480V (*Mound Facility Physical Characterization*, 12-1-93).

Building M is the former machine shop and housed electroplating operations. These process areas are now out-of-service and the majority of the building is inactive. The building does support some activities including electronics maintenance, an electrical substation, and excess material staging and storing. Total area of Building M is 56,000 square feet, including two mezzanine office areas of 5,800 square feet. Floor plans are presented as Attachment 4 (Section 9.18.6.4). No research, development, or production activities using radioactive or energetic materials have occurred in the building. Unknown quantities of contaminants, consisting of arsenic, cyanide, heavy metals, and machine oils may be present (*Mound Facility Physical Characterization*, 12-1-93).

9.18.3 Summary of Findings

Many issues of environmental concern were identified during the walk-through. Applications on file for air emissions should be updated as the building shuts down. Two water fountains in the building should be removed because they are suspected of lead contamination based on Environmental Protection Agency (EPA) tests on some models. Friable asbestos needs to be cleaned up and contained to prevent further damage. Several operations should be reviewed with respect to preventing chemical releases to the sanitary or storm system. Compressed gas

cylinders and materials that are in secondary containers need to be properly tagged or labeled. Wastes from idle equipment and satellite accumulation areas need to be properly managed.

9.18.4 Observations

9.18.4.1 Air Emissions

There were two Permit to Operate (PTO) applications, for degreaser No. 2 and the plating shop, filed with the Regional Air Pollution Control Agency (RAPCA) for Building M. The degreaser was permitted (L002) with an expiration date of January 26, 1996. Mound's air emission database is inaccurate as all operations are now out-of-service. Although the operations have ceased, exhaust fans were still running in the plating shop. No air emissions were noted during the walk-through. There are no fuel-burning units in the building. There was no visual evidence of fugitive dust.

9.18.4.2 Water Emissions

The Mound Facility has three wastewater collection systems: a sanitary wastewater system; a storm water system; and a radioactively contaminated process wastewater system. Sanitary wastewater is treated at an onsite tertiary treatment plant and subsequently discharged by hard pipe to the Great Miami River. Storm water and any non-process wastewater, single pass cooling water, and softener backwash may be discharged directly to the Great Miami River, via the Miami-Erie Canal, or may be diverted to a 3.1-million-gallon holding pond for settling prior to discharge. Radioactively contaminated wastewater is treated in Building WD by physical-chemical treatment. If appropriate, wastewater may be discharged by hard pipe to the Great Miami River. If concentrations of radioactive contaminants cannot be reduced to acceptable levels, wastewater is solidified and shipped to the Nevada Test Site or Envirocare for disposal. All outfalls are permitted under an active NPDES permit. Routine monitoring activities are in place. Based on NPDES monitoring report data reviewed, it appears that the facility is in compliance with qualitative and quantitative conditions of the permit.

9.18.4.2.2 Sanitary

The building has sanitary services. According to a diagram of underground utility lines, presented as Attachment 5 (Section 9.18.6.5), the building is serviced by the sanitary system. Expected discharges to the sanitary system are by sinks, toilets, floor drains, and sumps. Chemicals have entered the sanitary system as an oily stain is in the sink basin in Room 28 and two metal plating rinse tanks are in the building. The metal plating rinse tank in Room 108 was monitored as part of the NPDES permit. Effluent from this tank has exceeded established discharge limits in the past. The plating shop in Room 108 is no longer in use. The other tank is listed inactive according to the Underground Storage Tank (UST) Program. Confirmation of drainage of sanitary waste into sanitary conveyance lines was not within the scope of this effort, therefore, neither dye tests nor smoke tests were conducted. Based on current operations identified by the process owner, effluent from Building M should not deviate from that expected by the sanitary treatment plant manager.

9.18.4.2.2 Storm Wastewater

The building is also serviced by storm drains according to Attachment 5 (Section 9.18.6.5). Roof drains and condensate discharge to the storm sewer according to the BMQ which is presented as Attachment 2 (Section 9.18.6.2). Exterior grates and drains were not tested to confirm that they connect to the storm drainage system. Inspection showed no sign of odors, colored discharges, or scarring which would indicate that any materials other than storm water have entered the storm drainage system. The diagram of underground utility lines also indicates that several storm lines terminate inside the building. It was undetermined at the time of the assessment what these potential discharge points are.

9.18.4.2.3 Process Wastewater

This building does not create or discharge radioactive wastewater to the WD facility. According to Attachment 5 (Section 9.18.6.5), no radioactive wastewater lines service Building M.

9.18.4.2.4 Chemicals

The remaining chemicals in Building M were evaluated against Table V of Appendix D in 40 CFR 122 and none were listed Clean Water Act (CWA) pollutants. Chemical storage and handling procedures are in place for proper disposal of chemicals. There have been no reported spills from Building M. There is no visual evidence that chemicals have entered the storm drains, but the potential exist as a drum of hypochlorite was within 10 feet of a storm water drain.

9.18.4.3 Potable and Service Water

Potable water is supplied to the building. Backflow prevention devices are installed at all visible points of potential cross-connections. All potable and service water lines are uniquely marked and easily identified, except for one service line in Room 8 which was identified as domestic water. Four of the six water fountains that supply drinking water in the building are not EPA-listed models suspected of lead contamination. Model numbers for the other two water fountains were inaccessible. Although the model number was inaccessible, the Halsey Taylor brand in Room 26 is very similar to those identified as suspected of lead contamination based on EPA tests on some models.

9.18.4.4 Chemical Storage and Hazardous Materials

A chemical inventory for Building M is included in the BMQ which is presented in Attachment 2 (Section 9.18.6.2). The information was gathered as part of the annual chemical inventory. The inventory information dates to 1994. Data from 1995 were not available when the appraisal was performed. Conformation of the 1994 inventory by the appraisal team was not attempted, as the current year's inventory was ongoing. However, storage, handling. and disposal of chemicals observed during the appraisal were reviewed to assure conformance with 40 CFR 122, 40 CFR-260-265 and 268, and 29 CFR 1910. It was noted that most of the chemicals on the

Building M inventory have been removed from the building. The power house water laboratory and the electronics maintenance shop are the only tenants in the building using chemicals. There was no visual evidence of chemical storage incompatibility among remaining materials and janitorial supplies. Material Safety Data Sheets (MSDS's) sheets were present and were reviewed for completeness. Documentation is available for chemicals disposed of through Waste Management.

Chemicals used in the electronic shop and in Room 7C (power house lab) were properly identified and stored. Room 7 is used as a storage area for 55-gallon drums of chemicals (Ancotreat 1310, 2010, and 3710) for boiler water treatment in the power house. There is no spill prevention for this area. Another storage area was Room 38A, where five flammable cabinets were full of 1-gallon containers of BioAct EC-7. This material was claimed by the City of Miamisburg for one of the onsite lessees.

Numerous containers of chemicals were identified in the out-of-service parts of Building M. Several containers did not have bar codes on them. An unidentified white powder was scattered on the floor. On a follow-up visit, most of the material was cleaned up with an unlabeled bag of similar material located a short distance from the location. Several compressed gas cylinders remain throughout the building, both inside and outside. The majority of these gas cylinders did not have empty/full tags attached.

The building is equipped with appropriate emergency response equipment such as eyewashes, safety showers, and fire extinguishers. Halon 1211 is the predominant fire extinguisher. Eyewashes and safety showers in the plating shop were tagged "Do Not Use." Inspection tags on all the other eyewashes and safety showers were present and current. The electronic shop, where chemicals are used, does not contain eyewash and safety shower equipment. There is an Emergency Evacuation Plan and signs are posted throughout the building.

No aboveground storage tanks were observed in or around the building. Two liquid helium and argon aboveground chemical storage tanks are located across the street from Building M, next to Building 25. There is no secondary containment nor is any required. No aboveground tanks were observed inside the building during the walk-through even though they were listed in the BMQ, included as Attachment 2 (Section 9.18.6.2). There are no separators or catch basins, in or around the building. There are two sumps in this building and they are identified in the UST Program as tanks Nos. 119 and 225. Both are metal-plating rinse tanks. Tank No. 225 is listed as inactive and tank No. 119 was an active NPDES outfall until the plating shop shut down. There may be sludge in either tank.

The building was tested and does contain asbestos-containing building material (MD-10391, *Asbestos Program Manual*, 9-14-95). There was visual evidence of friable asbestos in Room 20. Signs of damage were observed on insulation in the northeast corner of Room 20; debris was noted on the floor. Otherwise, the areas containing asbestos material were identified and properly marked indicating the presence of asbestos.

There are no capacitors or transformers containing polychlorinated biphenyls (PCB's) located in the building. PCB transformers and capacitors were removed from Substation M, which is located within the building. Substation A, located outside and in front of Building M, has PCB capacitors and is properly labeled. A PCB transformer was observed being removed during Building M assessment. The PCB capacitors will also be removed during the spring of 1996 (1995 PCB Annual Document Log). There is no visual evidence of PCB oil contamination in the area.

9.18.4.5 Solid, Hazardous and Radioactive Wastes

Solid waste generated in the building is removed by janitorial personnel to a local collection point, then shipped offsite to a local landfill by a service contractor. The disposal contract is maintained by Waste Management. There was no visual evidence that hazardous materials or wastes are mixed with solid waste streams.

Hazardous waste generation ceased in the plating shop in Room 108 when it was shut down. The plating tanks appear to have been cleaned out and no waste remained in the area. Based on discussions with maintenance personnel, hazardous waste can be generated when equipment staged in Building M is prepared to be shipped offsite. Fluids, including oil and Freon, are removed from the equipment. Idle machinery in Building M contain oil and metal chips. In Room 20, the team observed that a piece of equipment was being drained of oil and residue into a 55-gallon black drum labeled "Hazardous Waste." It is Mound's policy for generators to characterize their waste before Waste Management collects it. No generators were present during walk-through to verify waste characterization. All hazardous waste is collected and transported by a representative of the EG&G Waste Management Group, and stored in Building 72 for ultimate disposal. There is no onsite treatment of waste. Waste disposal manifests and Certificates of Disposal are maintained by the EG&G Waste Management Group. They conform to RCRA requirements.

A satellite accumulation area (SAA) is being established in the electronic shop for printed circuit boards as a result of the appraisal. Printed circuit boards may be hazardous waste because they may contain lead and silver in the solder. Other items being accumulated are batteries and aerosol cans.

There are three bag-houses on the air handling system. Two are located along the outside east wall and the other is in Room 42A. It was not possible to determine if the traps were empty.

Portions of Room 8 have a creosote wood-block floor which was observed to be discolored from spills or releases. It is noted in documents that unknown quantities of contaminants, consisting of arsenic, cyanide, heavy metals, and machine oils are suspected to be present throughout the building.

9.18.4.6 Waste Minimization and Pollution Prevention

At Mound there is an active program to minimize waste streams in accordance with state and federal requirements and Executive Order 12856. Aluminum cans and paper are being recycled in the electronics shop. Waste volume is minimized through cannibalism of damaged equipment to repair broken equipment.

9.18.5 Findings and Recommendations

The environmental appraisal of Building M indicates that the following action items, in priority order, should be planned and scheduled for accomplishment thus assuring that best management and operating practices are in place. Photographs were taken to document the environmental appraisal.

M-1 Friable asbestos-containing building material (ACBM) needs to be managed to prevent exposure to workers. Damaged ACBM in Room 20 needs to be cleaned up and the source contained to prevent further damage.

M-2 Two water fountains located in Rooms 8 and 26 should be removed. The one located in room 26 is similar to others identified as EPA-listed fountains suspected of lead contamination. The other water fountain has no identification with respect to make or model number.

M-3 Secondary chemical containers such as boxes, bags, etc. should be properly identified and labeled. All chemicals and materials in the building should be labeled in accordance with site procedures.

M-4 Sumps used as plating rinse tanks may contain sludge from past operations. Since all processes have ended in Building M, these tanks should be checked to verify that there is no sludge in them. If the tanks contain sludge, the sludge should be characterized to determine if it is RCRA-regulated, and managed accordingly.

M-5 Hazardous waste regulations require that RCRA-regulated waste be removed from manufacturing process equipment within 90-days of the equipment becoming idle.

M-6 Prior to generating printed circuit boards as waste, the satellite accumulation process for printed circuit boards needs to be established so that they can be managed as hazardous waste.

M-7 Storage requirements should be reviewed for bulk chemicals and any measures that can be taken to prevent chemicals from entering the sanitary or storm systems. This review should include the storm water system that has lines terminating inside the building to ensure that chemicals or hazardous materials cannot enter the system.

M-8 Applications on file with the Regional Air Pollution Control Agency (RAPCA) for air emission sources should be updated as the building shuts down. Mound's air emissions database needs to be updated with respect to changing operations.

M-9 All gas cylinders should carry a legible label or marking identifying their contents, including full/empty tags (CGA P-1).

M-10 Bag-houses should be checked for wastes. If empty, they should be identified as such and measures taken to ensure that condition, otherwise the waste should be characterized to determine if it is RCRA-regulated and managed accordingly.

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9.18.6.1 Environmental Appraisal Checklist

ENVIRONMENTAL APPRAISAL CHECKLIST

Building Name M

Appraisers: Ronald Paulick
Name Discipline

Name Discipline

Name Discipline

Name Discipline

Building Manager:

Process Manager:

Date:

ENVIRONMENTAL APPRAISAL CHECKLIST

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Environmental Appraisal Checklist

Building Name: m Appraisers: Patrick, Atkins, Russ, Parker Date: 2-7-96

Clean Water Act (CWA) Screening Checklist

Question	Response	Comments
Does the outside drain spouting of the building discharge directly to a storm sewer/sanitary system?	(Y)/ N	If the answer to any of these questions is yes, proceed with the following checklist.
Are there sinks, toilets and floor drains in the building?	(Y)/ N	
Are chemicals being used in the building?	(Y)/ N	
Is there a process which discharges to the storm or sanitary system?	(Y)/ N	

CWA Checklist

Regulatory Guideline	Question	Response	Comments
40 CFR 122 Appendix D Table V	If chemicals are used/stored in the building, are they on the attached list? Are they properly contained?	Y / (N) (Y)/ N	
	Is the building in operation? What are the processes and where do they discharge to?	Y / (N) _____ _____	Storage area, Offices plating shop & machine shop shutdown
	Do the floor drains, sinks & toilets appear to be draining properly?	(Y)/ N	
OAC 3745-33	Do the floor drains and sinks drain to a sanitary or storm sewer?	(Sanitary) Storm	
	Is there a sump/pit in the building? If so, what does it contain? How often is it pumped out? Does water collect in sump? Does sump have secondary containment?	(Y)/ N _____ inactive (Y)/ N Y / (N)	One active NPDES site until Shop shutdown. The other is listed as inactive. Both are metal plating rinse water Plating sumps
	Are there any manholes, catch basins, drains, or fill pipes in or around the building? If so, are there any unusual appearances, colors, and/or odors? Describe in comment section. Can chemicals flow into the drain?	(Y) N (Y)/ N (Y)/ N	a sink in Rm 28 had oil staining in sink. a drum of hypochlorite is located on east side of building within 10' of a Storm Drain

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9.18-14

Environmental Appraisal Checklist

Building Name: M

Appraisers: Adkins, Parker, Paulick, Ross Date: 2-7-96

Clean Air Act (CAA) Screening Checklist

Regulatory Guideline	Question	Response	Comments
	Are there any rooms that have air emissions sources that vent to the outside of the building, e.g., fumehoods, equipment? If so, note the rooms.	(Y) / N	108
OAC 3745-35	Using the air emissions inventory reference for this building, are there any sources in the building that are not documented?	Y / (N)	
	Is there evidence of fugitive dust emissions inside or outside of the building	Y / (N)	

CAA Checklist

Regulatory Guideline	Question	Response	Comments
	Are there existing air permits or applications applicable to the building?	(Y) / N	Degreaser expired 1-26-96. All operations have ceased.
OAC 3745-31,35	If yes, are the terms and conditions of the permit or the information included on the application (see air emissions database) being followed? Note any differences and update the air emissions database.	(Y) / N	All operations have ceased.
OAC 3745-31	Are there any sources that are not included in the air emissions database? If so, note the room, hood number, active or not, POC, and applicable air emission database information on Table B.	Y / (N)	
OAC 3745-31-03	Are there sources which are lab equipment of lab fumeheads used exclusively for chemical or physical analyses and bench scale lab equipment? These sources do not require a permit. However, the air emissions database should be updated.	Y / (N)	
	Has there been any release of air contaminants from this building?	Y / (N)	

Environmental Appraisal Checklist

Building Name: M1

Appraisers: [illegible] Date: 2-7-96

CAA Checklist

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Comments: Note the number of sources/hoods per room, the number that are active, and the POC on the reference document.

TABLE A

Process Source	Room Number	Hood Number	In Database	Active	Chemicals Used	Quantity Used	Quantity to Waste Management	Hours/Yr. Operation	Air Emissions
			Y / N	Y / N					
			Y / N	Y / N					
			Y / N	Y / N					
			Y / N	Y / N					
			Y / N	Y / N					

Source: _____

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9.18-16

Environmental Appraisal Checklist

Building Name: 11 Appraisers: Adkins, Packer, Parlick Ross Date: 2-7-96

Hazardous Materials (HM) Screening Checklist

Question	Response	Comments
Are any chemicals used or stored in this building, now or in the past?	(Y)/ N	If the answer is yes, proceed with the following checklist.

HM Checklist

Regulatory Guideline	Question	Response	Comments
29 CFR 1910.1200(b,f)	All containers of hazardous chemicals shall be labeled as to the identity of the chemical and the appropriate hazard warnings.	(Y)/ ~~N~~	See note Below.
29 CFR 1910.1200(g)	MSDS shall be available to the employees in close proximity to the work area.	(Y)/ N	Janitorial MSDS in area. Electricians MSDS in area.
29 CFR 1910.22, 1910.106, 1910.176	All places of employment, passageways, storerooms and service areas shall be kept clean and orderly and in a sanitary manner. Aisles shall be unobstructed. Drums and containers are not leaking and are tightly sealed.	(Y)/ N	
29 CFR 1910.106	Storage cabinets for flammable materials are constantly kept closed, are fire resistant and are labeled "FLAMMABLE - Keep Fire Away". Containers inside should be labeled and closed. No spills inside cabinet.	(Y)/ N	
29 CFR 1910.106(d)(7)	Incompatible chemicals are not stored together.	(Y)/ N	
29 CFR 1910.106(d)(4)	Inside Flammable/combustible storage rooms must meet the following: 4 in. raised sill or trench that drains to a safe area, liquid tight wall/floor joints, self-closing doors, gravity or mechanical exhaust providing 6 room changes/hr., exhaust switch located outside room, at least one 3 ft. aisle; no cracks in secondary containment.	Y / N	N/A

All Chemicals are labeled, The chemical list provided with BMC is out of Date most chemicals are gone too.

Environmental Appraisal Checklist

Building Name: M

Appraisers: Adkins, Parker, Patrick Ross Date: 2-7-96

HM Checklist

Regulatory Guideline	Question	Response	Comments
29 CFR 1910.106(d)(7)	All flammable/combustible storage locations have at least one 12-B portable fire extinguisher located outside and within 10 ft. of a door opening into any room for storage. No smoking signs are posted.	(Y) / N	
29 CFR 1910.151	Eyewashes/showers shall be provided within the work area. Ensure unit is operational.	(Y) / N	Eyewashes in Ground Building inspected & up to date See Below
CGA P-1 3.3 & 3.3.10	All gas cylinders (full or empty) shall carry a legible label or marking identifying the contents.	(Y) / N	
CGA P-1 3.5.3	Full and empty containers should be stored separately with the storage layout planned so that containers comprising of old stock can be removed first with a minimum handling of other containers.	(Y) / N	
CGA P-1 3.5.8	All compressed gas containers in service or in storage shall be stored standing upright and the container shall be secured.	(Y) / N	One cylinder in Rm 38 was unsecured, It was corrected in < 72 hours by BIP Personnel
CGA P-1 4.2.2	Oxygen cylinders shall be separated from flammable gas containers or combustible materials a minimum of 20 ft. or a noncombustible barrier 5 ft. high.	Y / N	N/A
29 CFR 1910.104(2)(10)	Oxygen stored as a liquid shall be on a noncombustible surface. Asphalt is considered combustible. Wood and long dry grass shall be cut back 15 ft. from the container.	Y / N	N/A
29 CFR 1910.104	Bulk oxygen storage shall be permanently placarded "OXYGEN - NO SMOKING - NO OPEN FLAMES".	Y / N	N/A
	Is there a sign posted in each work area regarding emergency egress and emergency response action?	(Y) / N	
	Is there an emergency response plan available?	(Y) / N	

* Eyewashes/Safety Showers in plating lab Tagged "Do not use" are out of service Area is in safe shut down.

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9.18-18

Environmental Appraisal Checklist

Building Name: M

Appraisers: Adkins, Parker, Patrick Ross Date: 2-7-96

HM Checklist

Regulatory Guideline	Question	Response	Comments
	Is there a process area?	(Y) / N	Power house water quality Lab
	Does it have proper containment?	(Y) / N	
	Is there a liquid bulk transfer area?	Y / (N)	
	Is there proper containment?	Y / N	N/A
	Is there an above ground storage tank? If so, complete Table B.	Y / (N)	BMQ is not Accounted

Above Ground Storage Tanks Inventory

TABLE B—Above Ground Storage Tanks Inventory

Building	Capacity (Gal.)	Contents	Estimated Volume	In Service	Containment	Visual Stains/ Contamination	If Empty, Flushed
				Y / N	Y / N	Y / N	Y / N
				Y / N	Y / N	Y / N	Y / N
				Y / N	Y / N	Y / N	Y / N
				Y / N	Y / N	Y / N	Y / N
				Y / N	Y / N	Y / N	Y / N
				Y / N	Y / N	Y / N	Y / N
				Y / N	Y / N	Y / N	Y / N

Source: _____

Environmental Appraisal Checklist

Building Name: M Appraisers: Atkins, Parker, Pavlick, Rose Date: 2-7-96

Safe Drinking Water Act (SDWA) Screening Checklist

Does this facility have potable water?	(Y)/ N	If yes, conduct the following survey.

SDWA Checklist

Regulatory Guideline	Question	Response	Comments
OAC 3745 95-02 (A)	Do actual or potential cross-connections exist between potable (light green) and service water (dark green)?	(Y)/ N	Drinking water / service water
OAC 3745 95-04 (B)(C)	Are backflow prevention devices installed where cross connections (hoses connected to faucets, hot water tank vented directly to a drain) exist?	(Y)/ N	
	Are sources of service water (janitorial and laboratory faucets, or outdoor spigots) posted as non-potable water sources?	(Y)/ N	One to service line identified as Domestic.
	Does the facility contain any water coolers or fountains ~~that are not lead free?~~ Complete Table C.	(Y)/ N	

TABLE C—Water Fountain Survey

Building	Location	Model #	Comments / Date of Analysis for Lead
M	Corr 48	PLF 3CP-D001	OASIS
M	Corr 37	~~Type 1~~ NSW-8	Sunroc
M	Rm 8		Unidentified. - No model # or marker ID
M	Rm 28	FD700-3	ELKAY
M	Rm 26	"WM8A"	HALSEY TAYLOR - ID BLOCKED - Appears to be WM8A model
	Corr 220A	5805	HALSEY TAYLOR
	Rm 225		Bottled water

Source: _____

9.18-19

9.18-20

Environmental Appraisal Checklist

Building Name: M1 Appraisers: Atkins, Parker, Pontiak, Ross, Date: 2-7-96

RCRA Screening Checklist

Does this facility generate waste or use chemicals?	Y / N	If yes, conduct the following survey.

RCRA Checklist

Regulatory Guideline	Question	Response	Comments
OAC 3745 52-11	Has any material generated been characterized RCRA hazardous? Was charactarization by analysis or by process knowledge? Are lab results or documentation of process knowledge readily available? Note any uncharacterized material in comment section. Is it waste? If yes, proceed with next section.	(Y) / N analysis / (process) (Y) / N (Y) / N	Waste from Parts Cleaner Rm 20 & Electric Circuit Boards in Electronics maintenance area. - Using MSDS for solvent 1 bag; unknown brown colored powder in Rm 7
OAC 3745 52-11	Are any of the materials noted RCRA hazardous waste? If no, note and stop here. If yes, note the location of the management unit, and the method of management, and proceed with the appropriate section below.	(Y) / N	Rm 20, a drum of liquid from Parts Cleaner, labeled as a hazardous waste satellite, and circuit boards.

Environmental Appraisal Checklist

Building Name: M Appraisers: Adkins, Packer, Pavlik, Ross Date: 2-7-96

RCRA Checklist

Regulatory Guideline	Question	Response	Comments
I. HAZARDOUS WASTE STORED IN CONTAINERS			
	Is there an area in the building that could qualify as a Satellite Accumulation Area? Is it treated as such?	(Y) / N (Y) / (N)	Parts Cleaner waste is a satellite, the circuit board area is an SAA
OAC 3475-52-34 (C)	Has any of the RCRA hazardous waste in this building been managed in Satellite Accumulation Areas? If no, proceed to the next section. If yes, answer the following.	(Y) / N	
	Are the containers marked with the words hazardous waste, or other words denoting the hazard?	(Y) / N	
	Are the containers in good condition?	(Y) / N	
	Are the waste compatible with the containers?	(Y) / N	
	Are containers managing ignitable hazardous waste stored at least 50 feet from the plant site boundary?	(Y) / N	
	Are containers kept closed and locked except during filling?	(Y) / (N)	Drum was closed but not locked in locked area
	Are containers moved within 3 days of being filled?	Y / N	N/A see note below.

- 1 Drum in Room 20 being managed as a satellite accumulation area for draining of a parts cleaner. Job was in progress. Less than 55 gallons of waste will be generated.
- George Jones has an MSR to have part of equipment removed to facilitate removal of sludge from bath. He stated that he believes safe shut down is lower priority and can't give a date for removal.
- George Jones indicated that waste is tracked on process knowledge and MSDS, prior results used to change colors of class

9.18-22

Environmental Appraisal Checklist

Building Name: M

Appraisers: [illegible] Date: 2-7-96

RCRA Checklist

Regulatory Guideline	Question	Response	Comments
OAC 3745-52-11 (A)	If a Satellite accumulation area has been abandoned and/or if waste left in place, and the containers may be subject to the 90-day-storage exclusion. If this exclusion does not apply, go to the next section. If the containers have been in storage under this exclusion, answer the following:		N/A
	Are the containers in good condition?	Y / N	
	Are the waste compatible with the containers?	Y / N	
	Are the containers kept closed except during filling?	Y / N	
	Are the containers managed in such a way, that they are not ruptured, or leaks caused?	Y / N	
	Is the area inspected at least once weekly?	Y / N	
	Is the inspection recorded? • Where is the log? Is it properly completed, dated, and signed?	Y / N Y / N	
	Are containers managing ignitable hazardous waste stored at least 50 feet from the facility boundary?	Y / N	
	Are incompatible wastes managed in such a way that they will not react with another incompatible waste?	Y / N	
OAC 3745-52-34(B)	Has any of the waste (except in Building 23, Building 72 and the Burn Area) been managed in excess of 90-days?	Y / (N)	~~N/A~~
	If no go to next section.		
	If yes, note.		
	For Building 23, Building 72 & Burn Area use special checklist.		

Environmental Appraisal Checklist

Building Name: M Appraisers: Atkins Parker Parlick Ross Date: 2-7-96

RCRA Checklist

Regulatory Guideline	Question	Response	Comments
II. HAZARDOUS WASTE STORED IN TANKS			
OAC 3745-52-32 (B)	Has any chemical waste stored in a tank, piece of process equipment or ancillary equipment been in storage in excess of 90-days?	(Y) / N	11 pieces Idled Equipment have waste oil, sludge & chips
	If the answer was no, then proceed with the following:	(Y) / N	
	Has the tank or piece of equipment had an integrity assessment?	Y / (N)	
X	Is there a sump?	(Y) / N	Sump is a CWA discharge for plating lab
	Is it dry?	Y / N	Couldn't observe
	Does the tank or equipment have secondary containment?	Y / (N)	
	Does the tank or equipment have leak detection device(s)?	Y / (N)	
	Has spill control prevention been enacted?	Y / (N)	
	Has any hazardous waste stored in a tank, piece of process equipment or ancillary equipment been in storage in excess of 90-days?	Y / N	11 pieces Idle Equip Need to Perform Determination
	If the answer was no, then proceed with the following:		
	Has the tank or piece of equipment had an integrity assessment?	Y / N	N/A until determination
	Does the tank or equipment have secondary containment?	Y / N	N/A " "
	Does the tank or equipment have leak detection device(s)?	Y / N	N/A " "
	Has spill control prevention been enacted?	Y / N	N/A " "
	Is there a closure plan?	Y / N	N/A " "
	If yes, then note.		
OAC 3745-67	Has any of the waste been managed in a surface impoundment? If yes, then note. Go to the next section.	Y / (N)	

X Per site list of Tanks & Sumps.

9.18-23

9.18-24

Environmental Appraisal Checklist

Building Name: M

Appraisers: Adkins, Parker, Pavlick, Ross Date: 2-7-96

RCRA Checklist

Regulatory Guideline	Question	Response	Comments
OAC 3745-68	Has any of the waste been managed in a Landfill? If yes, then note. Go to the next section.	Y / N	
OAC 3745-68	Has any of the waste been managed in an Incinerator (other than Burn area units)? If yes, then note. Go to the next section.	Y / N	
OAC 3745-68	Has any of the waste been managed in a Thermal treatment Unit (other than Burn area units)? If yes, then note. Go to the next section	Y / N	
OAC 3745-69	Has any of the waste been managed in a Miscellaneous Treatment Unit (other than Burn area units)? If yes, then not. Go to the next section.	Y / N	
OAC 3745-56	Has any of the waste been managed in a Waste Pile? If yes, then note. Go to the next section.	Y / N	

General Comments:

Environmental Appraisal Checklist

Building Name: M

Appraisers: Atkins Parker Patrick Ross Date: 2-7-96

Asbestos Screening Checklist

Does this facility contain ACBM?	(Y)/ N	If yes, conduct the following survey.

Asbestos Checklist

Note: Routinely, the asbestos standard for ACBM in schools has been applied to facilities for purpose of cleanup. In addition to AEHERA, there are additional standards in the NESHAPS that may be of importance.

Regulatory Guideline	Question	Response	Comments
ADAPTED FROM TSCA ACBM IN SCHOOLS:			
	Has this building been characterized either through process knowledge, by analyses, or by inspection to determine if it contains asbestos? If no for this building or area note this conclusion in the comment section.	(Y)/ N	BQM indicates Asbestos Baseline performed, Ref: Manual Technical Manual MA10391
*	Is there any evidence of friable asbestos?	(Y)/ N	Friable Asbestos Noted in BQM Damage noted in Rm 20
	Is the asbestos removal properly managed? (See questions listed below)	Y / N	No on-going abatement to observe If there is no asbestos removal, do not complete the following section.
NESHAPS FOR ASBESTOS FOR ANY ONGOING ASBESTOS REMOVAL:			No on-going Abatement
40 CFR 61.156	There are no discharges of visible emissions to the outside air from collection, processing, packaging, transporting, or deposition of ACBM during the removal.	Y / N	
40 CFR 61.152(b) (1)	ACBM is treated with water in accordance with 40 CFR 152(b)?	Y / N	
40 CFR 61.154	Is friable asbestos adequately wetted during stripping? Or, has an adequate ventilation and collection system been installed?	Y / N	
40 CFR 61.152	Is wetting continued until the waste friable asbestos is collected for disposal?	Y / N	

Rm 20 There are pieces of insulation and powder on floor beneath 4 pipes labeled Asbestos.

9.18-25

9.18-26

Environmental Appraisal Checklist

Building Name: M Appraisers: Adkins Packer Parlick Ross Date: 2-7-96 thru 3-7-96

Toxic Substances and Control Act (TSCA) PCB's Screening Checklist

Does this facility potentially contain any PCB's or PCB contaminated equipment?	(Y) N	If yes, are transformers labeled (Blue or Yellow stickers)? If yes, conduct the following survey.

TSCA Checklist

Regulatory Guideline	Question	Response	Comments
40 CFR 761	Has any waste generated in, or from, this building been characterized either through process knowledge or by analyses to determine if it contains PCB's ? If the answer is no, note . If the answer is yes, proceed with next section.	(Y) / N	Waste operations inventory 1991-1995 notes large quantities PCB oil removed from Bld M. O.H. mgr stated Transformer Substation A removed 2-96
	Based on an inspection, are any of the materials or equipment potentially PCB contaminated? If no, note and stop here. If yes, note the location of the management unit, and the method of management, and proceed.	(Y) / N	Substation A still contains PCB capacitors, are active will be removed this spring. (per discussions with Dave Wiemer)
40 CFR 761.65 (c) (5)	Are PCB articles or containers stored in this building checked for leaks at least once every 30 days?	Y / N	N/A no PCB storage
	If yes, are auditable records maintained.	Y / N	N/A
40 CFR.30 (a) (1) (ix)	Are any PCB transformers in use, or stored for possible reuse, that contain PCB's at concentrations of 500 ppm or greater?	Y / N	Substation A in use until 2-96
	Are they visually inspected quarterly? If yes, are auditable records maintained?	(Y) N	Tony Williams has records up to Replacing Transformer 3-7-96 Performed visual inspection of area where PCB Transformer was replaced, No evidence of release or contam. [illegible]

Environmental Appraisal Checklist

Building Name: M

Appraisers: Atkins Parker Patrick Ross Date: 2-7-96

TSCA Checklist

Regulatory Guideline	Question	Response	Comments
40 CFR 761.30 (a) 1,viii	Are all combustible materials (i.e., paints, solvents, plastics, paper, sawn wood, etc.) cleared from areas containing PCB transformers to a distance of five meters?	(Y) / ~~(N)~~	
40 CFR 761.65 (b) (8)	Are all PCB articles and containers labeled with the date they were placed in storage?	(Y) / N	Substation A has PCB capacitors ~~N/A~~ that will be removed this spring.
	Are labeled PCB articles and containers stored so that the labels can be referenced?	Y / N	N/A
40 CFR 761.65 (a)	Are all PCB's and PCB contaminated items at concentrations above 50 PPM, that are stored for disposal, stored no longer than one year from the date they were placed in storage?	Y / N	N/A
40 CFR 761.62 (b) (1) (i)	Do all PCB storage areas have an adequate roof and walls to prevent rainwater from reaching the stored items?	Y / N	N/A
40 CFR 761.62 (b) (1) (iv)	Are storage are floors curbed and constructed of continuous smooth and impervious materials?	Y / N	N/A
40 CFR 761.62 (b) (1) (i)	Are the curbs at least 6 inches high?	Y / N	N/A
40 CFR 761.62 (b) (1) (iii)	No drains are allowed in storage areas. Are there drains in the storage areas?	Y / N	N/A

Dave Wilmer ~~Troy Williams~~ interview: 3-7-96. Troy stated that Substation A has PCB capacitors that will be removed this spring. They are inspected quarterly. Records kept by Troy Williams 3851

x3323

9.18-27

9.18-28

Environmental Appraisal Checklist

Building Name: M

Appraisers: Atkins Parker Patrick Ross Date: 2-7-96

TSCA Checklist

Regulatory Guideline	Question	Response	Comments
40 CFR 761.65 (c) (2)	Only non-leaking and undamaged large high voltage PCB's capacitators and PCB-containing electrical equipment are allowed to be stored outside of PCB storage areas, on pallets if stored outside, with containment for 10 percent of the volume of the equipment. Do all PCB's stored in this configuration conform with this requirement?	Y / N	N/A
40 CFR 761.45 and .65	Are all PCB storage areas marked with a large PCB mark as described in 40 CFR 761.45 (a)?	Y / N	N/A
40 CFR 761.65 (c) (5)	Have all leaking PCB articles and containers been transferred to non-leaking containers?	Y / N	N/A
40 CFR 761.65 (c) (6)	Do all PCB storage containers for the storage of liquid and non-liquid PCB's comply with DOT shipping container specifications?	Y / N	N/A

GENERAL COMMENTS:

Environmental Appraisal Checklist

Building Name: M Appraisers: Atkins, Parker, Patrick Ross Date: 2-17-96

Low-Level Waste and Transuranic Waste Screening Checklist

Does this facility contain radioactive waste ?	Y (N)	If yes, conduct the following survey.

Low-Level Waste and Transuranic Waste Checklist

Regulatory Guideline	Question	Response	Comments
Low-Level Waste			
DOE Order 5820.2A Chapter III	Can any waste generated in, or from, this building be characterized either through process knowledge or by analyses to determine if it is LLW ? If the answer is no, note. If the answer is yes, proceed with next section.	Y / N	No Rad was generated or stored
DOE Order 5820.2A Chapter III.	Are any of the materials noted by inspection LLW? If no, The audit would stop here, because there are no LLW. If yes, note the location of the management unit, and the method of management, and proceed with the section below.	Y / N	
DOE Order 5820.2A Chapter III, 3.a.	Have the storage configurations in use in this area been taken into account for keeping external exposures to the general public below 25 mrem/yr?	Y / N	
	Is the waste stored in a configuration that protects ground-water resources?	Y / N	
DOE Order 5820.2A Chapter III, 3.b.	Has monitoring been conducted in this area in accordance with DOE Order 5820.2A in order to evaluate the area against the performance standard?	Y / N	
	Based on field data, does the monitoring conducted in this area conform to the performance standard?	Y / N	

Note: BGM indicates that Rad Contamination has been identified on wood floor of the main bay area (Room 8 machine shop). No posted areas were noted during inspection.

9.18-29

9.18-30

Environmental Appraisal Checklist

Building Name: N1 Appraisers: Atkins, Anker, Paulick, Ross Date: 2-7-96

Low-Level Waste and Transuranic Waste Checklist

Regulatory Guideline	Question	Response	Comments
DOE Order 5820.2A Chapter III, 3.d.	Based on field data, is the characterization of the materials in this area sufficient to assure proper segregation to assure proper segregation, treatment, storage, and disposal?	Y / N	No Rad waste generated or stored
	Based on field data does the characterization as documented at the time of generation of the waste ensure that the actual physical and chemical characteristics, and major radionuclide content of this material are recorded and known at all stages of the waste management process?	Y / N	
	Do characterization data include the following:		
	Physical and chemical characteristics of the waste?	Y / N	
	Volume of the waste (including solidification and absorbent material)?	Y / N	
	Weight of the waste (including solidification and absorbent material)?	Y / N	
	Major radionuclides and their concentrations?	Y / N	
	Packaging date, package weight, external volume?	Y / N	
	How were the concentration of radionuclides determined? Direct methods?	_____	
	How were the concentrations of radionuclides determined? Indirect methods?	_____	
DOE Order 5820.2A Chapter III, 3.h	Is the storage configuration in long term storage sufficient to meet the performance standard?	Y / N	
	Are records maintained at the facility enabling this waste to be traced from its origin?	Y / N	

Environmental Appraisal Checklist

Building Name: M

Appraisers: Atkins Parkin Paulick Ross Date: 2-7-96

Low-Level Waste and Transuranic Waste Checklist

Regulatory Guideline	Question	Response	Comments
TRU WASTE			
	Can any waste generated in, or from this building be characterized either through process knowledge or by analyses to determine if it is TRU waste? If no, note and stop. If yes, proceed with the next section.	Y / N	No Rad waste Generated or Stored.
	Are any of the materials noted as being TRU waste during an inspection? If no, note and stop. If the answer is yes, note the location of the management unit, and the method of management and proceed with the appropriate section below.	Y / N	
DOE Order 5820.2A, Chapter II, 3.a	Was this material evaluated as soon as possible in the generating process, to determine if it is TRU (>100nCi/g), if it is recoverable, or if it is waste? (Note if the activity level is less than 100nCi/g, the waste is not TRU, and can be managed as LLW.)	Y / N	
	Did the determination of TRU radionuclide concentration include the mass of the container, including shielding? These should be included in calculating the specific activity of the waste.	Y / N	

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Environmental Appraisal Checklist

Building Name: M

Appraisers: Atkins Patrick Parker Ross Date: 2-7-96

Low-Level Waste and Transuranic Waste Checklist

Regulatory Guideline	Question	Response	Comments
DOE Order 5820.2A, Chapter II, 3.b	Has the TRU waste been assayed or otherwise evaluated to determine its radioactive content prior to storage?	Y / N	no Rad waste generated or stored
	Has the TRU waste been characterized or otherwise evaluated to determine if hazardous waste is present?	Y / N	
	Has classified TRU waste been treated to destroy the classified characteristics?	Y / N	
DOE Order 5820.2A, Chapter II 3.d	Has all newly generated TRU waste been packaged in non-combustible packaging that meets DOT requirements?	Y / N	
	Have all Type A TRU waste packages been equipped with a method to prevent pressure buildup?	Y / N	
	Have all TRU packages been marked, labeled and sealed in accordance with 40 CFR 261 Subpart C and 49 CFR 172 Subparts D, E and 49 CFR 173 Subpart I?	Y / N	

Environmental Appraisal Checklist

Building Name: M Appraisers: Adkins Parker Pavlick Rees Date: 2-7-96

Low-Level Waste and Transuranic Waste Checklist

Regulatory Guideline	Question	Response	Comments
DOE Order 5820.2A, Chapter II 3.e	Has the TRU waste been segregated in manner that will not permit commingling of TRU waste with LLW or high-level waste?	Y / N	No Rad Waste Generated or Stored.
	Has the TRU waste been protected from unauthorized access?	Y / N	
	Has the TRU waste been monitored periodically to ensure that it is not releasing its radioactive and/or hazardous constituents?	Y / N	
	Has this TRU waste storage area been designed, constructed, maintained, and operated to minimize the possibility of fire, explosion, or accidental release of its radioactive and/or hazardous constituents?	Y / N	
	Does the facility have a contingency plan designed to minimize the adverse impacts of fire, explosion, or accidental release of its radioactive and/or hazardous constituents?	Y / N	

GENERAL COMMENTS:

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9.18-34

Environmental Appraisal Checklist

Building Name: M Appraisers: Atkins Penlick Parker Ross Date: 2-7-96

Waste Minimization/Pollution Prevention Activities Screening Checklist

Does this facility generate waste or use chemicals?	(Y) / N	If yes, conduct the following survey.

Waste Minimlaztion/Pollution Prevention Activities Checklist

Regulatory Guideline	Question	Response	Comments
	Based on available information and a walk through, are there any apparent opportunities to curtail the consumption of raw materials (including but not limited to paper, chemicals, electricity, and etc.). If yes, list candidate areas in the comment section.	Y / (N)	Building is shut down Electric shop is only active operation.
	Are there solvent wastes?	Y / N	Need To check all equip
	Is vehicle maintenance performed?	Y / (N)	
	Are oils used ?	(Y) / N	
	Are these corrosive wastes?	Y / (N)	
	Are there sludges?	(Y) / N	Sludge in Tank Equip.
	Are there halogenated organic (nonsolvent) wastes?	Y / N	Unknown, No personnel in water lab
	Are metals recovered from wastewater?	Y / (N)	
	Is waste sludge generated?	Y / (N)	
	Are any waste minimization practices used that reduce the generation of sludge?	(Y) / N	Standard Site Practices
	Ion exchange process?	Y / (N)	
	Lead in gasoline lowered to reduce tank sludge toxicity?	Y / N	N/A
	Storage tank agitators installed?	Y / N	N/A
	Corrosive resistant materials used?	Y / N	N/A
	Prevention of crude oil oxidation ?	Y / N	N/A
	Drying?	Y / N	N/A

Environmental Appraisal Checklist

Building Name: M Appraisers: Adkins Parker Patrick Ross Date: 2-7-96

Waste Minimization/Pollution Prevention Activities Checklist

Regulatory Guideline	Question	Response	Comments
HALOGENATED ORGANIC (NONSOLVENT) WASTES			
	Are halogenated organic wastes used as fuel in cement kilns?	Y / (N)	
	Are baghouse filters used to collect pesticides and pesticide intermediates?	Y / (N)	~~N/A~~
	Are solid wastes generated from the collection of baghouse dust?	(Y) / N	
	Wet instead of dry grinding used?	Y / N	N/A
	The output spray dried?	Y / N	N/A
	Has baghouse emptying and recycling of baghouse fines been scheduled?	Y / N	BIG [illegible] Need to check
	Have operations been evaluated to improve procedures such as handling, storage and spill prevention for increased efficiency?	Y / (N)	
METAL WASTES			
	Are any technologies for the recovering of metals from waste rinsewater used?	Y / N	N/A
	Evaporation of waste rinsewater?	Y / N	N/A
	Reverse osmosis?	Y / N	N/A
	Ion exchange?	Y / N	N/A
	Electrolysis?	Y / N	N/A
	Agglomeration?	Y / N	N/A
CORROSIVE WASTES			
	Are acidic or basic cleaning solutions used as treatment for pH adjustment chemicals?	Y / N	N/A

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9.18-36

Environmental Appraisal Checklist

Building Name: M

Appraisers: Adkins Parker Parrish Ross Date: 2-7-96

Waste Minimization/Pollution Prevention Activities Checklist

Regulatory Guideline	Question	Response	Comments
	Are ion exchange resins used to remove heavy metals and cyanides from acid and base solutions?	Y / N	N/A
	Is crystallization used to remove corrosives from solution by cooling?	Y / N	N/A
	Is the process of evaporation of liquid wastes by heating used to leave behind a more concentrated solution?	Y / N	N/A
CYANIDE AND REACTIVE WASTES			
	Has non-cyanide or low concentration of cyanide process replaced zinc cyanide bath ?	Y / N	N/A
	Are any of these processes used to recycle cyanide wastes?	Y / N	N/A
	Refrigeration/crystallization?	Y / N	N/A
	Evaporation?	Y / N	N/A
	Ion exchange?	Y / N	N/A
	Membrane separation which includes reverse osmosis or electrodialysis?	Y / N	N/A
VEHICLE MAINTENANCE			
	How are auto parts cleaned?	Y / N	N/A
	Solvent sink?	Y / N	N/A
	Solvent dunk bucket?	Y / N	N/A
	Solvent dip tank?	Y / N	N/A
	Are parts cleaning solvents used for anything else besides cleaning parts?	Y / N	N/A ~~Nothing observed~~
	Are spills reduced by locating sinks or dunk buckets near auto service bays?	Y / N	N/A

Environmental Appraisal Checklist

Building Name: M Appraisers: Adkins, Parker, Pedlick, Ross Date: 2-7-96

Waste Minimization/Pollution Prevention Activities Checklist

Regulatory Guideline	Question	Response	Comments
	Are cleaned parts drained on the sink to minimize solvent spills?	Y / N	N/A
	Are drip tanks used to capture losses?	Y / N	N/A
	Is a solvent sink used for mineral solvents rather than a dunk bucket or dip tank?	Y / N	N/A
	Does a waste hauler collect solvent waste for recycling or treatment?	Y / N	N/A
OILS			
	What kind of oils are used?		
	Hydraulic oil?	(Y) / N	
	Transformer oil?	(Y) / N	
	Metal working fluids?	(Y) / N	
	Spent lubricating oils?	(Y) / N	
	Can the process be modified or changed to use water-based fluids?	Y / (N)	Building Shutdown
	Are these good housekeeping and operation practices used to minimize oil waste production?		
	Use oils not contaminated with other liquids?	Y / N	Control of Performance
	Oil spills prevented?	Y / (N)	evidence of past spills.
	Drip pans installed?	Y / (N)	
	Oil soaked rags laundered?	Y / N	N/A
	Rags and absorbants used to their limit?	Y / N	unknown

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9.18-38

Environmental Appraisal Checklist

Building Name: M

Appraisers: Adkins Parker Pollick Ross Date: 2-7-96

Waste Minimization/Pollution Prevention Activities Checklist

Regulatory Guideline	Question	Response	Comments
	Are these treatment techniques used to promote separation of oil/water wastes?		No oil processing observed
	Reclaiming process to remove water and solvents by heat?	Y / N	
	Gravity setting?	Y / N	
	Screening?	Y / N	
	Centrifugation?	Y / N	
	Filtration?	Y / N	
SOLVENT WASTES			
	Has there been an attempt to reduce volume or toxicity by:		
*	Eliminating solvents?	Y / N	
	Reducing the use of solvents?	Y / N	
	Reducing the loss of solvents?	Y / N	
	Increasing recyclability?	Y / N	
	Are solvents segregated?	Y / N	Not necessary
	Are waste solvents free from water and garbage?	Y / N	
	Are recycled solvent containers labeled as such?	Y / N	N/A
	Are containers kept closed?	Y / N	
	Free and sheltered from the elements?	Y / N	
	Are solvent tanks kept as free from contaminations as possible so that the waste can be recycled?	Y / N	N/A
	Is a method used to minimize the use of new materials such as a countercurrent process?	Y / N	not necessary building shaping frame

Some solvents are used in electronics, there is use do not generate solid wastes

Environmental Appraisal Checklist

Building Name: M Appraisers: Atkins, Parker, Pratt & [illegible] Date: 2-7-96

Waste Minimization/Pollution Prevention Activities Checklist

Regulatory Guideline	Question	Response	Comments
	If there is a recycling program, what technique is used?	Y / N	No program active
	Distillation?	Y / N	N/A
	Solids removal?	Y / N	N/A
	Dispersion breaking?	Y / N	N/A
	Dissolved and emulsified organics recovery?	Y / N	N/A
	Are any of these housekeeping procedures used to minimize the production of solvent wastes?		
	Separators cleaned and checked?	Y / N	N/A
	Parts not allowed to enter the degreaser while wet?	Y / N	N/A
	Sludge from the bottom of the tank not allowed to accumulate?	Y / N	N/A
	Lids kept on tanks?	Y / (N)	
	Freeboard space on tanks increased?	(Y) / N	
	Are better operating practices used to reduce waste?	Y / N	N/A
	How long is solvent waste stored and where?	_____ _____	

Note for general building: High Bay Rm 8, The wood block floor has extensive evidence of spilled or released oil on floor. This will require corrective action during D&D.

9.18-39

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9.18.6.2 Building Manager's Questionnaire

DONE

Building Manager's Questionnaire

Building Name: M Building Manager: W.H. Whitelow Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

1. What are the access requirements (training, clearance, etc.)?

NONE

2. What protective equipment is required to enter the building?

NONE

TALK TO BILL DOWDY X3535.
HE TOLD ME HE DETECTED RAD. STUFF ON WOOD FLOOR IN MAIN BAY AREA.

3. Are there any restricted areas? Yes (No)
Where are they?

TK.

4. Provide a physical description of the building.

Area of this building totals some 56,000 ft², including two mezzanine office areas of 5,800 ft² and other low bay areas totaling approximately 35,500 ft². Building is of concrete blocks with brick facing; roof is BUM of coal tar and asphalt. Building is not contaminated with radioactive or energetic materials. Unknown quantities of contaminants, consisting of arsenic, cyanide, heavy metals, and machine oils, may be present. HVAC systems are central steam and chilled water.

Source: Mound Facility Physical Characterization, 12-1-93

5. Provide a drawing of the building.

Attached

6. What is the current building use?

Building is used for support activities including: ~~electroplating,~~ TK electronics maintenance, office space, an electrical substation, and an EXCESS ~~MW Heat Source surveillance~~ MATERIAL STORAGE/STAGING OUT facility.

(ELECTROPLATING LABS ARE SHUT DOWN.)

Source: Mound Buildings, 5-9-95

7. What is the history of building use other than that described in #6?

MW HEAT SOURCE SURVEILLANCE, ELECTROPLATING, MACHINING

Source: Mound Buildings, 5-9-95

9.18-43

Building Manager's Questionnaire

Building Name: M Building Manager: W.H. Whitelow Phone: _____ Dat ALL OF THESE OPERATIONS HAVE CEASED.
Alternate: _____ Phone: _____

TK.

8. What are ongoing operations or processes? What are the raw waste streams from each process? Who is the best contact for

Process(es) Housed: PAST OPERATIONS, BLDG IS SHUTDOWN. Production support, glass shop, gauge ...ction and maintenance, ceramics machining, tool development, milliwatt generator production, plating facility (production and development)

How Wastes Are Generated:

There are many different wastes generated in Building M. In this document these wastes are divided into two main groups: wastes from the Plating Shop and wastes from the rest of the areas in the building (Machine Shop). Wastes from the Machine Shop include waste water coolant which is the coolant used during the machining process, waste oil which is used to lubricate the machines, and various mixtures of Freon, alcohol, and trichloroethane which are used to clean machined parts. The oil with mercury and methyl ethyl ketone listed as wastes are not normally found in Building M and were disposed of when unnecessary chemicals were cleaned out.

Wastes from the Plating Shop are further subdivided into groups depending on their use. The primary uses of these materials are plating, coating, annodizing, passivating, cleaning, and oxide removal. Wastes generated during each of these processes are identified in the list under "Waste Volume." Wastes in the "Miscellaneous" category have been generated during other operations which are described in the following paragraph.

Floor waste was generated when a spill was cleaned up. The waste water is overflow from a rinse tank. Unichrome compound was disposed of during a general cleanup and is not currently used in the plating shop. Building M personnel have no record of using acetonitrile or Phill. Solution. It is possible the wastes on the Building M dock were generated elsewhere and carried to Building M for pickup by Waste Management.

Contact:
Phone:

Source: Characterization of Mound's Hazardous, Radioactive, and Mixed Wastes, (8-15-90).

9.18-44

Building Manager's Questionnaire

Building Name: M Building Manager: W.H. Whitelow Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

9. In the last six months, have any modifications been made to the building or to processes in the building? Yes (No)

10. Does the building have air emission sources? Yes

Process Source	Room Number	Hood Number	Active	Chemicals Used	Quantity Used	Quantity to Waste Management	Lbs./Yr. Operation	Air Emissions
Safe Shutdown	7		N					
Safe Shutdown	7A		N					
Safe Shutdown	8		N					
Plating Process	47,108		~~Y~~ N	<0.0001 all hoods				
Plating Process	048	M0480001	~~Y~~ N	Empty				
Safe Shutdown	47,108		N					
Plating Process	47		~~Y~~ N	<0.0001 all hoods				
Cleaning Process	108	M1080004	~~Y~~ N	sodium hydroxide potassium permanganate	0.0001 0.0001		0.8736 0.8736	
Cleaning Process	108	M1080005	~~Y~~ N	nitric acid hydrochloric acid sodium dichromate sulfuric acid	0.0001 0.0001 0.0001 0.0001		0.8736 0.8736 0.8736 0.8736	
Cleaning Process	108	M1080006	~~Y~~ N	nitric acid hydrochloric aacid	0.0001 0.0001		0.8736 0.8736	
Cleaning Process	108	M1080007	~~Y~~ N	hydrochloric acid	0.0001		0.8736	
Cleaning Process	108	M1080008	~~Y~~ N	hydrochloric acid	0.0001		0.8736	
Cleaning Process	108	M1080009	~~Y~~ N	hydrochloric acid	0.0001		0.8736	
Cleaning Process	108	M1080010	~~Y~~ N	hydrochloric acid nitric acid	0.0001 0.0001		0.8736 0.8736	
Cleaning Process	108	M1080011	~~Y~~ N	hydrochloric acid nitric acid	0.0001 0.0001		0.8736 0.8736	
Cleaning Process	108	M1080012	~~Y~~ N	nitric acid	0.0001		0.8736	
Cleaning Process	108	M1080013	~~Y~~ N	nitric acid	0.0001		0.8736	
Cleaning Process	108	M1080014	~~Y~~ N	nitric acid	0.0001		0.8736	
Cleaning Process	108	M1080001	~~Y~~ N	acetone ethanol freon	0.009 0.016 0.01		2.88 5.12 3.2	

9.18-45

Building Manager's Questionnaire

Building Name: M Building Manager: W.H. Whitelow Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

	Room Number	Hood Number	Active	Chemicals Used	Quantity Used	Quantity to Waste Management	Lbs./Yr. Operation	Air Emissions
Cleaning Process	108	M1080002	~~Y~~ N	ethanol freon isopropanol	0.016 0.01 0.0009		32 20 1.8	
Cleaning Process	108	M1080003	~~Y~~ N	Bio-Act EC-7				
Safe Shutdown	103		N					
Safe Shutdown	38,108		N					
Safe Shutdown	17		N					
Safe Shutdown	20,27		N					
Vapor Degreaser								
Vapor Degreaser								

Source: _____

Exhaust still running on some equipment in the plating shop. No ongoing operations & all equipment is empty. Exhaust fans should be turned-off.

Process Source

9.18-46

Building Manager's Questionnaire

Building Name: M Building Manager: W.H. Whitelow Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

11. Describe air pollution control equipment used to reduce emissions for each source. None Listed

Process Source	Emissions	Control Equipment	Functioning
			Y / N
			Y / N
			Y / N
			Y / N
			Y / N

Source: Air Permits 2/4/95

12. For existing permits are emissions monitored? At what frequency? Where are the records maintained? None Listed

Process Source	Permit	Log	Permit Conditions & Frequency of Monitoring
		Y / N	
		Y / N	
		Y / N	
		Y / N	
		Y / N	

Source: Air Permits 2/4/95

13. Does the building have domestic water service? (Yes) No
Is there bottled water? Yes (No)

14. Does the building discharge to the storm sewer? (Yes) No
Where? RAIN + CONDENSATE

15. Does the building discharge to the sanitary sewer? (Yes) No
Where? LAV. FLOOR DRAINS TOILETS SUMP

16. Has an asbestos survey been conducted? Yes
What are the results? Yes

Source: Technical Manual MD-10391, Issue 3 Asbestos Program Manual 9/6/95

9.18-47

Building Manager's Questionnaire

Building Name: M Building Manager: W.H. Whitelow Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

17. Does the building contain transformers or capacitors? No

Source: PCB ANNUAL DOCUMENT LOG

18. Has the building been identified as containing PCBs? No

Source: PCB ANNUAL DOCUMENT LOG

19. What chemicals are used or stored inside or outside of the building? Include compressed gasses not in large tanks.

Chemical Name	State	Amount (MAX)
Attached		

Source: Chemical Inventory 1994

Some of the chemicals listed have been removed since the plating shop has been shutdown.

9.18-48

CHEMICAL	MANUFACT	USE		MAX	Unit	AVG	Unit	BD	RM	STATE	STOR	PRES	TMP	SUP
ARGON	AIR PRODUCTS	0.25		2	CF	2	CF	M	225	G	L	1	4	WEIDE
ROSIN CORE SOLDER 60/40	JW HARRIS CO	1	LB	5	LB	10	LB	M	225	S	K	1	4	WEIDE
SOLDERING PASTE	BURNLEY MFG CO	2	OZ	10	OZ	12	OZ	M	225	S	F	1	4	WEIDE
TAP MAGIC CUTTING FLUID	STECO CO	1	OZ	8	OZ	16	OZ	M	225	L	F	1	4	WEIDE
VC-3 VIBRA-TITE	OAKLAND CORP	0	OZ	1	OZ	0	OZ	M	225	L	M	1	4	WEIDE
ACRYLIC SPRAY COATING	BORDEN CHEMICAL PRODUCTS	8	OZ	30	OZ	52	OZ	M	23	L	F	1	4	WEIDE
PENTRATE ULTRA	HEATBATH CORP	650		650		178.7		M	47	L	D	1	4	MILLEI
1,1,1-TRICHLOROETHANE	G E CORPORATE RESEARCH &	12	(O	24	(O	48	(O	M	CAGE	ML	L	2	4	CLAW:
IMS SILICONE SPRAY	IMS COMPANY, CHAGRIN FALLS, OH	8	(O	72	(O	288	(O	M	CAGE	ML	L	2	4	CLAW:
LOCTITE #242 THREADLOCKER	LOCTITE CORP., CLEVELAND, OHIO	1	(O	6	(O	36	(O	M	CAGE	ML	N	1	4	CLAW.
MOBIL 1 FORMULA 15 W 50	MOBIL OIL CORP., FAIRFAZ, VA 22037	5	(G	5	(G	5	(G	M	CAGE	ML	F	1	4	CLAW
MOBILUX EP1	MOBIL OIL CORP., FAIRFAX, VA 22037	12	(O	288	(O	288	(O	M	CAGE	ML	R	1	4	CLAW
MOBILUX EP2	MOBIL OIL CORP., FAIRFAX, VA 22037	12	(O	288	(O	288	(O	M	CAGE	ML	R	1	4	CLAW
PAX-SOLV WATERLESS HAND CLEANER	CALGON	5	(O	20	(L	25	(L	M	CAGE	ML	F	1	4	CLAW
RTV SILICONE RUBBER SEALANT 108	GENERAL ELECTRIC, WATERFORD, NY	8	(O	96	(O	96	(O	M	CAGE	ML	R	1	4	CLAW
RTV SILICONE RUBBER SEALANT 108 5P1	GENERAL ELECTRIC, WATERFORD, NY	11	(O	132	(O	132	(O	M	CAGE	ML	R	1	4	CLAW
GRAPHITE POWDER, FIBERS	MORTON THIOKOL, INC., DANVERS, MA	2	(O	8	(O	8	(O	M	SHOP	PS		1	4	CLAW
MINERAL SEAL OIL 5062	TOTAL PETROLEUM, INC., EAST	0	(G	0	(G	0	(G	M	SHOP	ML		1	4	CLAW
MOBIL 600W CYLINDER OIL	MOBIL OIL CORP., FAIRFAX VA 22037	5	(G	5	(G	10	(G	M	SHOP	ML	F	1	4	CLAW
MOBIL DTE OIL HEAVY MEDIUM	MOBIL OIL CORP., 3225 GALLOWS RD.,	55	(G	110	(G	550	(G	M	SHOP	ML	D	1	4	CLAW
MOBIL DTE OIL LIGHT	MOBIL OIL CORP., 3225 GALLOWS RD.,	55	(G	110	(G	550	(G	M	SHOP	ML	D	1	4	CLAW
MOBIL FLUID 350	MOBIL OIL CORP., 3225 GALLOWS RD.,	24	(Q	48	(Q	48	(Q	M	SHOP	ML	F	1	4	CLAW
MOBIL VACTRA OIL NO. 4	MOBIL OIL CORP., 3225 GALLOWS RD.,	55	(G	55	(G	55	(G	M	SHOP	ML	D	1	4	CLAW
MOBILGEAR 629	MOBIL OIL CORP., FAIRFAX VA 22037	55	(G	55	(G	55	(G	M	SHOP	ML	D	1	4	CLAW
MOBILUBE HD 85W-140	MOBIL OIL CORP., FAIRFAX, VA 22037	5	(G	5	(G	10	(G	M	SHOP	ML	F	1	4	CLAW
NEV-SZ-REG	BOSTIK, MIDDLETON, MA 01949	8	(O	96	(O	96	(O	M	SHOP	ML	R	1	4	CLAW
PERMATEX #1 FORM-A-GASKET	LOCTITE CORP., CLEVELAND, OH 44128	10	(O	60	(O	40	(O	M	SHOP	ML	R	1	4	CLAW
PERMATEX #2 FORM-A-GASKET	LOCTITE CORP., CLEVELAND, OH 44128	10	(O	60	(O	40	(O	M	SHOP	ML	R	1	4	CLAW
QUICK METAL, LOCTITE	LOCTITE CORP., NEWINGTON, CT 06111	10	(O	60	(O	30	(O	M	SHOP	ML	R	1	4	CLAW
RTV SILICONE RUBBER SEALANT 102	GENERAL ELECTRIC CO.,	8	(O	96	(O	96	(O	M	SHOP	ML	R	1	4	CLAV
RTV SILICONE RUBBER SEALANT 102 5P1	GENERAL ELECTRIC CO., WATERFORD,	11	(O	132	(O	132	(O	M	SHOP	ML	R	1	4	CLAV
RUBBER-TO-METAL CEMENT	GC ELECTRONICS, ROCKFORD,IL	2	(O	4	(O	40	(O	M	SHOP	ML	M	1	4	CLAV
STODDARD SOLVENT, TYPE I	VARIOUS	55	(G	55	(G	165	(G	M	SHOP	ML	D	1	4	CLAV
TAP MAGIC CUTTING FLUID	THE STECO CORP., LITTLE ROCK, AR	12	(O	72	(O	288	(O	M	SHOP	ML	F	1	4	CLAV
THREE-IN-ONE HOUSEHOLD OIL	BOYLE-MIDWAY, CRANFORD, NJ 07016	4	(O	24	(O	48	(O	M	SHOP	ML	F	1	4	CLAV
TRIM TAP HEAVY	MASTER CHEMICAL CORPORATION, 501	55	(G	55	(G	55	(G	M	SHOP	ML	D	1	4	CLAV
VALVOLINE AUTOMATIC TRANSMISSION	VALVOLIINE OIL CO., ASHLAND, KY 41114	24	(Q	48	(Q	48	(Q	M	SHOP	ML	F	1	4	CLAV
WD-40	WD-40 COMPANY,1061 CUDAHY PL.,P.O.	8	(O	24	(O	96	(O	M	SHOP	ML	L	2	4	CLAV
WHITMORE #1 GREASE	WHITMORE MANUFACTURING CO.,	12	(O	288	(O	144	(O	M	SHOP	ML	R	1	4	CLAV
MOBIL DTE OIL HEAVY MEDIUM	MOBIL OIL CORP., 3225 GALLOWS RD.,	1	(G	1	(G	1	(G	M	STOR	ML	D	1	4	CLAV

CHEMICAL	MANUFACT	USE		MAX	Unit	AVG	Unit	BD	RM	STATE	STOR	PRES	TMP	SUPER
NICKEL CHLORIDE	FISHER	138.8		138.8		5		M	108	S	M	1	4	MILLER
NICKEL SULFATE	JOHNSON MATTHEY	8.81		8.81		2.64		M	108	S	N	1	4	MILLER
NITRIC ACID	FISHER	43.2		43.2		66.08		M	108	L	M	1	4	MILLER
OAKITE DYANDET	OAKITE PRODUCTS	1		1		0		M	108	S	F	1	4	MILLER
PHOSPHORIC ACID	FISHER	11.13		11.13		20		M	108	L	M	1	4	MILLER
POTASSIUM PERMANGANATE	FISHER	3.3		3.3		20		M	108	S	M	1	4	MILLER
SODIUM BICARBONATE	FISHER	1		1		6.6		M	108	S	N	1	4	MILLER
SODIUM DICHROMATE	FISHER	1		1		0.5		M	108	S	N	1	4	MILLER
SODIUM HYDROXIDE	FISHER	26.43		26.43		50		M	108	S	N	1	4	MILLER
SULFURIC ACID	FISHER	70.7		70.7		30.4		M	108	L	M	1	4	MILLER
TOLUENE	FISHER	0.5		0.5		0.1		M	108	L	M	1	4	MILLER
VASELINE INTENSIVE CARE LOTION	CHEESEBROUGH PONDS	0.5		0.5		2		M	108	L	N	1	4	MILLER
WD-40	WD-40 CO	0.56		0.56		0.1		M	108	L	F	1	4	MILLER
ZINC OXIDE	FISHER	3.3		3.3		0		M	108	S	N	1	4	MILLER
AGENT Y-17	M&T HARSHAW	18.9		18.9		6.01		M	110	L	F	1	4	MILLER
ALUM. FAST RED B3LW DYE	SANDOZ CHEMICALS	5		5		1		M	110	S	F	1	4	MILLER
ALUM. TURQUOISE PLW DYE	SANDOZ CHEMICALS	2.5		2.5		1		M	110	S	F	1	4	MILLER
ALUM. VIOLET 3D DYE	SANDOZ CHEMICALS	10		10		2		M	110	S	N	1	4	MILLER
ANODAL MS-1 LIQUID	SANDOZ CHEMICALS	40		40		0		M	110	S	F	1	4	MILLER
BLACK LABEL II	M&T HARSHAW	40		40		0		M	110	L	N	1	4	MILLER
COPPER CYANIDE	FISHER	110		110		2		M	110	S	F	1	4	MILLER
DEEP BLACK MLW DYE	SANDOZ CHEMICALS	7		7		1		M	110	S	F	1	4	MILLER
FREON TF	ASHLAND CHEMICAL CO	200		200		200		M	110	L	D	1	4	MILLER
GREEN LABEL II	M&T HARSHAW	3		3		1		M	110	L	N	1	4	MILLER
LENS CLEANER	EASTERN SAFETY EQ CO	8.34		8.34		0.5		M	110	L	N	1	4	MILLER
MORPLAS ERO BLUE DYE	MORTON INTERNATIONAL	5		5		0.5		M	110	S	E	1	4	MILLER
NICKEL ACETATE	SHEPPARD CHEMICAL	80		80		5.28		M	110	S	I	1	4	MILLER
SA-1 ADDITIVE	M&T HARSHAW	18.9		18.9		1		M	110	L	N	1	4	MILLER
SODIUM CYANIDE	GEM CITY CHEMICALS	10		10		2		M	110	S	D	1	4	MILLER
SODIUM HYDROXIDE SOLUTION	MAYS	674		674		200		M	110	L	E	1	4	MILLER
SOLDERING FLUX	RUBY CHEMICAL CO	0.63		0.63		0.1		M	110	L	N	1	4	MILLER
WINDOW SHINE GLASS CLEANER	VALLEY JANITOR SUPPLY	16.7		16.7		1		M	110	L	N	1	4	MILLER
1,1,1-TRICHLOROETHANE SOLVENT	MILLER-STEPHENSON	1	OZ	8	OZ	8	OZ	M	223	L	N	1	4	WEIDENBACH
DRIERITE	WA HAMMOND	0	LB	2	LB	0	LB	M	223	S	M	1	4	WEIDENBACH
DRIVE GRIP	OAKLAND CORP	0	OZ	1	OZ	0	OZ	M	223	S	R	1	4	WEIDENBACH
ELECTRICAL INSULATING RESIN	SCOTCHCAST 3M	3	OZ	12	OZ	12	OZ	M	223	S	K	1	4	WEIDENBACH
ELECTRONIC CLEANER	BOWMAN	1	OZ	30	OZ	1	OZ	M	223	L	F	1	4	WEIDENBACH
ELECTRONIC DEGREASER	CHARDON LABORATORIES	0	OZ	12	OZ	12	OZ	M	223	L	F	1	4	WEIDENBACH
EPOXY	COLE PARMER CO	2	OZ	24	OZ	36	OZ	M	223	L	J	1	4	WEIDENBACH
FREEZE MIST SPRAY	GC ELECTRONICS	12	OZ	36	OZ	36	OZ	M	223	L	F	1	4	WEIDENBACH
FREON SOLVENT FLUX REMOVER	MILLER-STEPHENSON	8	OZ	48	OZ	64	OZ	M	223	L	F	1	4	WEIDENBACH
FREON TF SOLVENT CLEANER	EI DUPONT	0	OZ	20	OZ	24	OZ	M	223	L	F	1	4	WEIDENBACH
FURNITURE POLISH	CARROLL COMPANY	0	OZ	10	OZ	0	OZ	M	223	L	F	1	4	WEIDENBACH
HIGH VACUUM GREASE	DOW CORNING	1	OZ	10	OZ	15	OZ	M	223	S	N	1		WEIDENBACH
RTV SILICONE RUBBER	GENERAL ELECTRIC	2	OZ	6	OZ	12	OZ	M	223	S	N	1		WEIDENBACH
THERMAL COMPOUND	WAKEFIELD ENG	1	OZ	[illegible]	OZ	[illegible]	OZ	M	223	S	[illegible]	[illegible]	[illegible]	WEIDENBACH

2-PROPANOL	FISHER	600	ML	600	ML	0		HL	104	PL	M	1	[illegible]	BARTON
1,1,1-TRICHLOROETHANE		25	[illegible]	55	GA	45	GA	M	103	L	D	1	[illegible]	KOEHLER
ARGON		1000	LB	4000	LB	2000	LB	M	103	G	L	2	4	KOEHLER
ETHYL ALCOHOL		0.5	GA	4	GA	4	GA	M	103	L	N	1	4	KOEHLER
HELIUM		220	CF	440	CF	110	CF	M	103	G	L	2	4	KOEHLER
2-PROPANOL	FISHER	13.74		13.74		2		M	108	L	M	1	4	MILLER
3 IN 1 OIL	BOYLE MIDWAY	0.19		0.19		0.01		M	108	L	F	1	4	MILLER
ACETIC ACID	FISHER	4.8		4.8		0.6		M	108	L	M	1	4	MILLER
ACETONE	FISHER	10.44		10.44		174		M	108	L	M	1	4	MILLER
ALODINE 1200S	PARKER AND AMCHEM	10		10		1		M	108	L	N	1	4	MILLER
AMMONIUM HYDROXIDE	MALLINCKRODT	1		1		0		M	108	L	M	1	4	MILLER
BIOACT EC-7	PETROFERM	35.6		35.6		50		M	108	L	F	1	4	MILLER
BORIC ACID	FISHER	6.6		6.6		6.6		M	108	S	M	1	4	MILLER
BUFFER SOLUTION	FISHER	1		1		3		M	108	L	N	1	4	MILLER
E-BRITE 30/31	ELECTROCHEMICAL PRODUCTS	12.6		12.6		0		M	108	L	N	1	4	MILLER
E-BRITE 30/32	ELECTROCHEMICAL PRODUCTS	12.6		12.6		0		M	108	L	N	1	4	MILLER
ELECTRODW SOLUTION	ORION RESEARCH	0.56		0.56		0.1		M	108	L	N	1	4	MILLER
ETHYL ALCOHOL	MIDWEST GRAIN CO	23.8		23.8		396		M	108	L	N	1	4	MILLER
FERRIC CHLORIDE	FISHER	0.22		0.22		0		M	108	S	M	1	4	MILLER
GOLD BRIGHTENER	ENGELHARD	3.3		3.3		2.5		M	108	L	N	1	4	MILLER
GOLD REPLENISHER	ENGELHARD	1.13		1.13		0.25		M	108	L	N	1	4	MILLER
HYDROCHLORIC ACID	FISHER	39.6		39.6		79.3		M	108	L	M	1	4	MILLER
HYDROFLUORIC ACID	FISHER	3.3		3.3		1		M	108	L	M	1	4	MILLER
ISOPROPYL ALCOHOL	FISHER	13.2		13.2		20.9		M	108	L	M	1	4	MILLER
JOY LIQUID SOAP	PROCTOR & GAMBLE	1.4		1.4		2.8		M	108	L	N	1	4	MILLER
MICROSHIELD	MICRO PRODUCTS	6.8		6.8		1.1		M	108	L	F	1	4	MILLER
MICROSTOP	MICRO PRODUCTS	3.4		3.4		3.4		M	108	L	F	1	4	MILLER

Building Manager's Questionnaire

Building Name: M Building Manager: W.H. Whitelow Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

20. Has there been a reported spill, leak, or other release of any chemical? Yes (No)
What, how much, and what clean-up measures were followed?

Chemical	Amount	Clean-up Measures

Source: _____

21. Where do waste chemicals go?

Waste Management

22. What janitorial supplies are stored inside or outside of the building?

ATTACHED

23. Where do excess janitorial supplies go?

Room 2, 9, 10

Source: _____

24. Are pesticides or herbicides stored or used in or around the building? (Yes) No

ATTACHED

Chemical	Amount	Chemical	Amount
ROUNDUP - HERB	AS NEEDED		

Source: INDUSTRIAL HYGIENE

9.18-52

ecord#	COMMON	CHEMICAL
1	BLUE MAX SPRAY BUFF	BLUE MAX SPRAY BUFF
2	CLEAN-N-DRY	CLEAN-N-DRY
3	CLR WINDOW	CLR WINDOW
4	CONQUEST	CONQUEST
5	DD/85 SPRAY	DD/85 SPRAY
6	DMQ	DMQ
7	DUO-POWDER	DUO-POWDER
8	FLOOR FINISH/ABOVE	FLOOR FINISH/ABOVE
9	FOUNTAIN HEAD	FOUNTAIN HEAD
10	GLOSS-EXTENDERA	GLOSS-EXTENDERA
11	GREASE-BE-GONE	GREASE-BE-GONE
12	HEAD START	HEAD START
13	INSECT SPRAY/CHERRY	INSECT SPRAY/CHERRY
14	INSECTICIDE/WAS	INSECTICIDE/WAS
15	KINDEST CARE	KINDEST CARE
16	LAVA HAND SOAP	LAVA HAND SOAP
17	LIL BROTHER SAM	LIL BROTHER SAM
18	NABC	NABC
19	NEUT. FLOOR CORP.	NEUT. FLOOR CORP.
20	ODOR BANE	ODOR BANE
21	ON-BASE SEALER	ON-BASE SEALER
22	ONE-STEP/SURE BET	ONE-STEP/SURE BET
23	POLISH/LEMON	POLISH/LEMON
24	PUMMEL HAND SOAP	PUMMEL HAND SOAP
25	RINSE FREE/STRIP	RINSE FREE/STRIP
26	SBS-61 LOTION SOAP	SBS-61 LOTION SOAP
27	SCRUB-ENDER	SCRUB-ENDER
28	SEAL, CON-SEAL	SEAL, CON-SEAL
29	SEALER/IRONSTONE	SEALER/IRONSTONE
30	SHINELINE BASE	SHINELINE BASE
31	SNAPOUT	SNAPOUT
32	SPIN-OUT	SPIN-OUT
33	SPOT, PILE DRIVER	SPOT, PILE DRIVER
34	SPOTTER, PULL OUT	SPOTTER, PULL OUT
35	STAINLESS CLEANER	STAINLESS CLEANER
36	STATCIDE, GP	STATCIDE, GP
37	STRIPPER, ZIP	STRIPPER, ZIP
38	SURFACE GLEEM	SURFACE GLEEM
39	TREATMENT/DUST	TREATMENT/DUST
40	TRIPLE SSS	TRIPLE SSS
41	VESTA POWER	VESTA POWER
42	WINDOW SHINE	WINDOW SHINE

Cus Todial Chemical list

9.18-53

☐ INITIAL SERVICE
☑ REGULAR SERVICE
☐ EXTRA SERVICE

TERMINIX.

TERMITE and PEST CONTROL

COPY

COMMERCIAL SERVICE AND INSPECTION REPORT

BRANCH	ACCOUNT	RT	TELEPHONE	GRID	3 DAY	F	T	PRODUCTION	TIME IN	TIME OUT
2418	006092-	07	000/000-0000 513/865-3921	E30 -	2FR	S	P	00004577 09	7:40 AM	8:25 AM

SERVICE PROPERTY AT

E G R O MOUND
P. O. #38224
MOUND AVE
MIAMISBURG OH 45342-0000

BRANCH

TERMINIX INTERNATIONAL
4712 PAYNE AVENUE
DAYTON OH 45414-0000
513/274-5800

OPERATOR NAME & CERTIFICATION NUMBER: [illegible] 1067

SUPERVISOR NAME & CERTIFICATION NUMBER: DANIEL J. STECK #1207

TARGET PEST(S): ☑ T2 Cockroaches ☑ T18 Rats ☐ Other: ☐ T3 Ants ☑ T19 Mice ☐ Other:

SERVICE AREAS:	INSPECTED	TREATED
☑ C1 FOOD AREAS:	☐	☑
☐ C2 OFFICES:	☐	☐
☐ C3 STORAGE/UTILITY:	☐	☑
☐ C4 PUBLIC AREAS:	☐	☑
☐ C5 REST ROOMS:	☐	☑
☐ C6 EXTERIOR AREAS:	☐	☐
☐	☐	☐
☐	☐	☐

PESTICIDE(S) TO BE APPLIED	EPA'S	T/C	AMOUNT	EQ
☐ P24 PT279 Engage (Chlorpyrifos) 0.5%	499-292			
☑ ~~P10~~ PT565 + XLO (Pyrethrin) 0.5%	499-310	C	[illegible]	A
☐ P04 Dursban L.O. (Chlorpyrifos) 0.5%	62719-55			
☑ ~~P11~~ Conquer (Esfenvalerate) 0.05%	1021-1565-57076	C	[illegible]	A
☐ P23 Tempo 20 WP (Cyfluthrin) 0.05%	3125-380			
☐ P06 Ficam W (Bendiocarb) 0.5%	45639-1			
☐ P21 Knox-Out 2FM (Diazinon) 1%	4581-335-AA-499			
☐ P07 Gentrol (Hydroprene) 0.125%	2724-304-50809			
☐ P12 Precor (Methoprene) 0.008%	2724-352-50809			
☑ ~~P02~~ Drione Dust (Silica/Pyrethrin) 1%	4816-353AA	[illegible]	[illegible]	
☐ P05 Ficam D (Bendiocarb) 1%	45639-3	A	[illegible]	
☐ P03 Dursban G (Chlorpyrifos) 0.5%	10370-36-432			
☐ P08 Maxforce Bait (Hydramethylnon) 1.65%	64248-1			
☐ P27 Avert Roach Bait (Avermectin) 0.05%	499-294			
☐ P09 PT270 Dursban (Chlorpyrifos) 0.5%	499-147			
☐ P25 PT280 Orthene (Acephate) 1%	499-230			
☐ P26 Maxforce Gel (Hydramethylnon) 2.15%	64248-5			
☐ P14 Ditrac All Weather Cake (Diphacinone) 0.005%	12455-5			
☐ P20 Talon G (Brodifacoum) 0.005%	10182-38			
☐ P47 Contrac Blox (Bromadiolone) 0.005%	12455-79			
☐ P34 Ditrac Bait Pack (Diphacinone) 0.005%	12455-19			
☐ P16 Glue Boards				
☐ P17 Ketch-All/Tin Cat				
☐ P19 Snap Traps				

TREATMENT CODE:
C = Crack & Crevice
S = Spot
G = General
T = Space Treatment
B = 3' Band

Supervisor's Comments: ☐ Treat for Infestation/Prevention or Inspect areas indicated.

EQUIP. CODE
F = Fogger
HD = Hand Dust
B&G = Comp. Air

SPECIAL SERVICE INSTRUCTIONS

SER. OLD CAFE, SMPP, GUARDS REST ROMS AND
BASINS IN MEDICAL AREA
P. O. # 38224

BALANCE AS OF
NOVEMBER 29
DEC CHARGE
SALES TAX
TOTAL DUE

CUSTOMER'S SIGNATURE: [illegible]

SERVICE TECHNICIAN'S SIGNATURE: [illegible] DATE: 12-15-90

AMOUNT PAID: ☐ CASH ☐ CHECK

9.18-54

☐ INITIAL SERVICE
☑ REGULAR SERVICE
☐ EXTRA SERVICE

TERMINIX.

TERMITE and PEST CONTROL

COPY

COMMERCIAL SERVICE AND INSPECTION REPORT

BRANCH	ACCOUNT	RT	TELEPHONE	GRID	S DAY	F	T	PRODUCTION	TIME IN	TIME OUT
2410	006093-	07	000/000-0000 513/865-4585	E30 -	2FR	S	P	00005000 09	7:00 AM	7:25 PM

SERVICE PROPERTY AT	BRANCH
E G & G MOUND EARNIE HAYES 865-4310 MOUND AVENUE MIAMISBURG OH 45342-0000	TERMINIX INTERNATIONAL 4712 PAYNE AVENUE DAYTON OH 45414-0000 513/274-5800

OPERATOR NAME & CERTIFICATION NUMBER: [illegible] 1467

SUPERVISOR NAME & CERTIFICATION NUMBER: DANIEL J. STECK #1207

TARGET PEST(S): ☑ T2 Cockroaches ☑ T3 Ants ☑ T18 Rats ☑ T19 Mice ☐ Other: ☐ Other:

SERVICE AREAS:	INSPECTED	TREATED	PESTICIDE(S) TO BE APPLIED	EPA'S	T/C	AMOUNT	EQ
☐ C1 FOOD AREAS:	☐	☐	☐ P24 PT279 Engage (Chlorpyrifos) 0.5%	499-292			
			☑ P10 PT565 + XLO (Pyrethrin) 0.5%	499-310			
			☐ P04 Dursban L.O. (Chlorpyrifos) 0.5%	62719-55			
			☑ P11 Conquer (Esfenvalerate) 0.05%	1021-1565-57076	C	[illegible]	
☐ C2 OFFICES:	☐	☐	☐ P23 Tempo 20 WP (Cyfluthrin) 0.05%	3125-380			
			☐ P06 Ficam W (Bendiocarb) 0.5%	45639-1			
			☐ P21 Knox-Out 2FM (Diazinon) 1%	4581-335-AA-499			
☐ C3 STORAGE/UTILITY:	☐	☑	☐ P07 Gentrol (Hydroprene) 0.125%	2724-304-50809			
			☐ P12 Precor (Methoprene) 0.008%	2724-352-50809			
			☑ P02 Drione Dust (Silica/Pyrethrin) 1%	4816-353AA	C	[illegible]	
			☐ P05 Ficam D (Bendiocarb) 1%	45639-3			
☐ C4 PUBLIC AREAS:	☐	☐	☐ P03 Dursban G (Chlorpyrifos) 0.5%	10370-36-432			
			☐ P08 Maxforce Bait (Hydramethylnon) 1.65%	64248-1			
			☐ P27 Avert Roach Bait (Avermectin) 0.05%	499-294			
☐ C5 REST ROOMS:	☐	☐	☐ P09 PT270 Dursban (Chlorpyrifos) 0.5%	499-147			
			☐ P25 PT280 Orthene (Acephate) 1%	499-230			
			☐ P26 Maxforce Gel (Hydramethylnon) 2.15%	64248-5			
☐ C6 EXTERIOR AREAS:	☐	☐	☐ P14 Ditrac All Weather Cake (Diphacinone) 0.005%	12455-5			
			☐ P20 Talon G (Brodifacoum) 0.005%	10182-38			
			☐ P47 Contrac Blox (Bromadiolone) 0.005%	12455-79			
			☐ P34 Ditrac Bait Pack (Diphacinone) 0.005%	12455-19			
☐	☐	☐	☐ P16 Glue Boards				
			☐ P17 Ketch-All/Tin Cat				
			☐ P19 Snap Traps				
☐	☐	☐					

TREATMENT CODE:
C = Crack & Crevice
S = Spot
G = General
T = Space Treatment
B = 3' Band

Supervisor's Comments: ☐ *Treat for Infestation/Prevention or Inspect areas indicated.*

EQUIP. CODE
F = Fogger B = [illegible]
HD = Hand Dust A = [illegible]
B&G = Comp. Air T = [illegible]

SPECIAL SERVICE INSTRUCTIONS

GENERAL PC , C-BLDG. A-BLDG, MEDICAL, GH BLDG
SM CAFETERIA.(MONTHLY) -- OS-EAST CAFETERIA,
NEW CAFETERIA ONLY , P.O. #38224

BALANCE AS OF NOVEMBER 29
DEC CHARGE
SALES TAX
TOTAL DUE

9.18-55

CUSTOMER'S SIGNATURE: [illegible]

SERVICE TECHNICIAN'S SIGNATURE: [illegible] DATE: 12/15/95

AMOUNT PAID: 0 ☐ CASH ☐ CHECK

Building Name: M Building Manager: W.H. Whitelow Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

25. Does the building contain active or inactive above ground storage tanks? Yes No
For each tank, list the content, quantity, last inspection, registration number.

No Above Ground tanks were identified during walk-through

Registration Number	Content	Quantity	Last Inspection Date	Preventive Maintenance Performed	Inside Or Outside
7697-37-2	NITRIC ACID	01C		Y/N	
7440-37-1	ARGON	02C		Y/N	103
7440-59-7	HELIUM	01C		Y/N	103
7664-93-9	SULFURIC ACID	01C			108

WHERE IN 108? I DON'T KNOW OF ANY H_2SO_4 STORAGE!

Source: Emergency and Hazardous Ch - Chemical Storage Tanks on EGG Mound ned by Outside Contractors 8/8/94

TK.

26. Is there a sump or pit or underground tai... ...J?
Yes No Unknown
Is it double-walled? What does it contain? How many days per year is it filled? - UNKNOWN
Is there an emergency overflow tank? Have there been previous overflows?

M108 ← IN M106.

Double-Wa	Days/Year in Use	Overflow Tank	Previous Overflow
Y / N		Y / N	Y / N

Source: TK.

27. Does th or dispose of hazardous waste? Yes No OK

Materials
ATTACHED

NOT ANY MORE.

Source: Characterization of Mounds Hazardc Mixed Wastes 08/15/90 TK.

Not any more - plating shop shutdown

9.18-56

M BLDG	BIOACT EC-7, ACETONE WASTE, M-536	D001 F003	263.8
M BLDG	BIOACT EC7, M-309	D001 F003	229.0
M BLDG	BIOACT EC7, M-310	D001 F003	213.0
[illegible]	BIOACT WASTE	D001	210.2
[illegible]	BLACK OXIDE RINSE WATER	D002	625.2
M BLDG	BLACK OXIDE RINSE WATER	D002 D007	295.7
M BLDG	BLACK OXIDE RINSE WATER	D002 D007	698.7
M BLDG	BREWER COAT DRIVEWAY SEALER	NONE	30.0
M BLDG	BREWER COAT DRIVEWAY SEALER	NONE	25.0
M BLDG	BREWER COAT DRIVEWAY SEALER	NONE	50.1
M BLDG	BRIGHT NICKEL PLATING WASTE	F007 F009	33.5
M BLDG	BRIGHTENER BATH DEBRIS, M-553	D004 D006 F007 F009	311.0
M BLDG	BRIGHTENER BATH DEBRIS, M-554	D004 D006 F007 F009	330.0
M BLDG	BRIGHTENER BATH DEBRIS, M-556	D004 D006 F007 F009	287.0
M BLDG	BRIGHTENER BATH DEBRIS, M-557	D004 D006 F007 F009	298.0
M BLDG	CADMIUM CYANIDE PLATING DEBRIS	D003 D006 F007 F009	11.8
M BLDG	CADMIUM CYANIDE PLATING RODS	D003 D006 F007 F009	24.9
M BLDG	CADMIUM CYANIDE, SODIUM HYPOCHLORITE WASTE	D002 D006 F007 F009	524.0
M BLDG	CADMIUM CYANIDE, SODIUM HYPOCHLORITE WASTE	D002 D006 F007 F009	403.5
M BLDG	CADMIUM CYANIDE, SODIUM HYPOCHLORITE WASTE	D002 D006 F007 F009	505.9
M BLDG	CHLOROFORM	D001 D022	1.0
M BLDG	CHROMIC ACID DEBRIS	D007	18.5
M BLDG	CHROMIC ACID PLATING DEBRIS	D007 F007 F009	12.0
M BLDG	CHROMIC ACID SOLUTION	D002 D007	281.7
M BLDG	CHROMIC ACID SOLUTION	D002 D007	471.5
[illegible]	CHROMIC ACID SOLUTION	D002 D007	463.3
[illegible]	CHROMIC ACID SOLUTION	D002 D007	438.0
M BLDG	CHROMIC ACID WASTE	D001 D007	125.0
M BLDG	COPPER CYANIDE	D003 P029	165.4
M BLDG	COPPER CYANIDE	D003 F007 F009	36.5
M BLDG	COPPER CYANIDE ANODES	F007 F009	605.9
M BLDG	COPPER CYANIDE PLATING ELECTRODES	D003 F007 F009	12.2
M BLDG	COPPER CYANIDE PLATING RODS	D003 F007 F009	187.4
M BLDG	COPPER CYANIDE PLATING RODS	D003 D006 F007 F009	52.3
M BLDG	COPPER CYANIDE PLATING RODS	D003 F007 F009	45.6
M BLDG	COPPER CYANIDE PLATING RODS	D003 F007 F009	100.0
M BLDG	COPPER CYANIDE WASTE	F007 F009	27.4
M BLDG	COPPER CYANIDE, EMPTY DRUM (FORMERLY LP93-391)	D003 P029	90.2
M BLDG	COPPER CYANIDE, SODIUM CYANIDE WASTE, M-212	D003 F007	240.0
M BLDG	COPPER CYANIDE, SODIUM CYANIDE WASTE, M-223	D003 F007	240.0
M BLDG	COPPER CYANIDE, WATER WASTE	F007 F009	466.5
M BLDG	COPPER CYANIDE, WATER WASTE	F007 F009	539.5
M BLDG	COPPER CYANIDE, WATER WASTE	F007 F009	431.8
M BLDG	COPPER CYANIDE, WATER WASTE	F007 F009	419.7
M BLDG	COPPER CYANIDE, WATER WASTE	F007 F009	425.4
M BLDG	COPPER PHOSPHATE RINSE WATER	D002	462.1
M BLDG	COPPER PHOSPHATE RINSE WATER	D002	332.9
[illegible]	COPPER PHOSPHATE RINSE WATER	D002	532.9
[illegible]	CYANIDE CONTAMINATED DEBRIS	F007 F009	8.1

9.18-57
Bldg. M

M BLDG	CYANIDE RINSE WATERS	F007 F009	434.0
M BLDG	DOWTHERM, WATER	NONE	46.6
M BLDG	DYE TANK DEBRIS	D006 D007	66.5
[illegible]DG	DYE TANK DEBRIS	D006 D007	61.1
M BLDG	DYE TANK DEBRIS	D006 D007	65.8
[illegible]LDG	DYE TANK DEBRIS	D006 D007	71.8
M BLDG	DYE TANK DEBRIS	D006 D007	66.1
M BLDG	DYE TANK DEBRIS	D006 D007	65.1
M BLDG	DYE TANK DEBRIS	D006 D007	65.9
M BLDG	DYE TANK DEBRIS	D006 D007	66.7
M BLDG	DYE TANK DEBRIS	D006 D007	65.5
M BLDG	DYE TANK DEBRIS	D006 D007	65.0
M BLDG	DYE TANK DEBRIS	D006 D007	64.9
M BLDG	DYE WASTE	D007	242.6
M BLDG	DYE WASTE	D007	453.7
M BLDG	DYE WASTE	D007	266.9
M BLDG	DYE WASTE	D007	279.4
M BLDG	DYE WASTE	D007	258.1
M BLDG	DYE WASTE DEBRIS	D006 D007	3.7
M BLDG	E-BRITE 30/30 WASTE	NONE	234.8
M BLDG	ELECTRO POLISH WITH METALS, M-299	D002 D006 D007	339.0
M BLDG	ELECTRO POLISH WITH METALS, M-315	D002 D006 D007	245.0
M BLDG	ETHANOL	D001	43.6
M BLDG	ETHYLENE GLYCOL CLEANUP	NONE	3.9
M BLDG	ETHYLENE GLYCOL RAGS	NONE	4.7
M BLDG	ETHYLENE GLYCOL, XYLENE WASTE	D001 D007 F003	131.0
M BLDG	FERRIC CHLORIDE WASTE	D002	574.2
M BLDG	FERRIC CHLORIDE WASTE	D002	558.8
[illegible]DG	FREON WASTE, M-196	F001	343.2
[illegible]DG	FREON WASTE, M-232	F001	563.2
[illegible]LDG	FREON WASTE, M-264	F001	287.0
M BLDG	FREON WASTE, M-291	F001	244.5
M BLDG	GOLD CYANIDE (DRY)	D003	20.0
M BLDG	GOLD CYANIDE FILTERS, DEBRIS WASTE	D003 F007	12.3
M BLDG	GOLD CYANIDE PUMP, FILTER UNIT	D003 F007 F009	17.0
M BLDG	GOLD CYANIDE SOLUTION	D003 F007	239.0
M BLDG	HEAT TRANSFER CEMENT	NONE	75.8
M BLDG	HEXANE, METHANOL, WATER WASTE	D001 F003	277.0
M BLDG	HYDROCHLORIC ACID RINSE WATER	D002 D006 D007 D008	425.1
M BLDG	HYDROCHLORIC, SULFURIC, NITRIC ACIDS RINSE WATER	D002	468.3
M BLDG	HYDROCHLORIC, SULFURIC, NITRIC ACIDS RINSE WATER	D002	454.9
M BLDG	LEAD ANODES	D008	120.3
M BLDG	LEAD ANODES	D008	157.1
M BLDG	LEAD TAPE	D008	25.0
M BLDG	LEAD, CHROMIUM PLATING RODS	D007 D008 F007 F009	52.3
M BLDG	M DYE WASTE, M-210	D006 D007	451.0
M BLDG	M DYE WASTE, M-214	D006 D007	488.4
M BLDG	M DYE WASTE, M-222	D006 D007	473.0
M BLDG	M DYE WASTE, M-225	NONE	473.0
M BLDG	M DYE WASTE, M-231	D006 D007	470.8
M BLDG	M DYE WASTE, M-236	D006 D007	457.6
M BLDG	M DYE WASTE, M-241	D006 D007	462.0
[illegible]DG	M DYE WASTE, M-308	D006 D007	281.0

9.18-58

Bldg. M

M BLDG	M FLOOR WASTE, M-242	NONE	400.4
M BLDG	M FLOOR WASTE, M-253	NONE	60.0
M BLDG	M FLOOR WASTE, M-253	NONE	50.0
[illegible]G	M FLOOR WASTE, M-267	NONE	55.0
[illegible]DG	M FLOOR WASTE, M-268	NONE	60.0
M BLDG	M WASTE WATER COOLANT	NONE	495.1
M BLDG	M WASTE WATER COOLANT	NONE	497.4
M BLDG	M WASTE WATER COOLANT	NONE	496.1
M BLDG	M WASTE WATER COOLANT	NONE	274.3
M BLDG	M WASTE WATER COOLANT	NONE	472.2
M BLDG	M WASTE WATER COOLANT	NONE	389.8
M BLDG	M WASTE WATER COOLANT	NONE	437.3
M BLDG	M WASTE WATER COOLANT	NONE	391.9
M BLDG	M WASTE WATER COOLANT	NONE	454.2
M BLDG	M WASTE WATER COOLANT	NONE	234.4
M BLDG	M WASTE WATER COOLANT	NONE	504.8
M BLDG	M WASTE WATER COOLANT	NONE	451.1
M BLDG	M WASTE WATER COOLANT	F002	400.0
M BLDG	M WASTE WATER COOLANT	F002	450.0
M BLDG	M WASTE WATER COOLANT	F002	442.2
M BLDG	M WASTE WATER COOLANT	F002	447.0
M BLDG	M WASTE WATER COOLANT, M-195	F002	488.4
M BLDG	M WASTE WATER COOLANT, M-195	F002	444.4
M BLDG	M WASTE WATER COOLANT, M-195	F002	490.6
M BLDG	M WASTE WATER COOLANT, M-195	F002	501.6
M BLDG	M WASTE WATER COOLANT, M-195	F002	506.0
M BLDG	M WASTE WATER COOLANT, M-195	F002	457.6
M BLDG	M WASTE WATER COOLANT, M-195	F002	433.4
[illegible]DG	M WASTE WATER COOLANT, M-195	F002	490.6
[illegible]DG	M WASTE WATER COOLANT, M-226	F002	308.0
M BLDG	M WASTE WATER COOLANT, M-229	F002	448.8
M BLDG	M WASTE WATER COOLANT, M-234	F002	440.0
M BLDG	M WASTE WATER COOLANT, M-235	F002	493.9
M BLDG	M WASTE WATER COOLANT, M-243	F002	466.4
M BLDG	M WASTE WATER COOLANT, M-245	F002	479.6
M BLDG	M WASTE WATER COOLANT, M-247	F002	451.0
M BLDG	M WASTE WATER COOLANT, M-258	F002	475.2
M BLDG	M WASTE WATER COOLANT, M-260	F002	470.0
M BLDG	M WASTE WATER COOLANT, M-261	F002	464.2
M BLDG	M WASTE WATER COOLANT, M-262	F002	356.3
M BLDG	M WASTE WATER COOLANT, M-272	F002	463.4
M BLDG	M WASTE WATER COOLANT, M-277	F002	465.7
M BLDG	M WASTE WATER COOLANT, M-278	F002	501.9
M BLDG	M WASTE WATER COOLANT, M-281	F002	448.2
M BLDG	M WASTE WATER COOLANT, M-286	F002	442.0
M BLDG	M WASTE WATER COOLANT, M-287	F002	457.0
M BLDG	M WASTE WATER COOLANT, M-288	F002	479.0
M BLDG	M WASTE WATER COOLANT, M-292	F002	468.0
M BLDG	M WASTE WATER COOLANT, M-294	F002	452.0
M BLDG	M WASTE WATER COOLANT, M-295	F002	460.8
M BLDG	M WASTE WATER COOLANT, M-316	F002	453.6
M BLDG	M WASTE WATER COOLANT, M-317	F002	464.5
[illegible] BLDG	M WASTE WATER COOLANT, M-318	F002	452.9
[illegible]BLDG	M WASTE WATER COOLANT, M-320	F002	456.6
[illegible]G	M WASTE WATER COOLANT, M-321	F002	488.8

9.18-59
Bldg. W

M BLDG	M WASTE WATER COOLANT, M-322	F002	452.4
M BLDG	M WASTE WATER COOLANT, M-323	F002	452.6
M BLDG	M WASTE WATER COOLANT, M-324	F002	465.0
[illegible]	M WASTE WATER COOLANT, M-326	F002	474.3
M BLDG	M WASTE WATER COOLANT, M-327	F002	446.2
M BLDG	M WASTE WATER COOLANT, M-345	F002	434.7
[illegible]	M&T BLACK LABEL 2	NONE	23.6
M BLDG	M&T BLACK LABEL 2	NONE	20.0
M BLDG	M&T GREEN LABEL 2 NICKEL ADDITIVE	NONE	10.3
M BLDG	MACUBOND	D001 D002	9.1
M BLDG	MACUBOND 9804	D002	48.7
M BLDG	MACUBOND 9805	D002	48.5
M BLDG	MERCURY	D009	30.1
M BLDG	MERCURY, ASBESTOS MATERIAL	D009	64.0
M BLDG	METHYLENE CHLORIDE	F002 U080	116.6
M BLDG	MINERAL OIL TRANSFORMERS (1)	NONE	630.0
M BLDG	NICKEL ACETATE TETRAHYDRATE	NONE	42.8
BLDG	NICKEL ACETATE TETRAHYDRATE	NONE	10.0
BLDG	NICKEL ACETATE TETRAHYDRATE	NONE	10.0
BLDG	NICKEL ACETATE TETRAHYDRATE	NONE	10.0
BLDG	NICKEL ACETATE TETRAHYDRATE	NONE	10.0
M BLDG	NICKEL ACETATE WASTE	NONE	463.7
M BLDG	NICKEL ACETATE WASTE	NONE	258.2
M BLDG	NICKEL ACETATE WASTE	NONE	257.6
M BLDG	NICKEL ACETATE WASTE	NONE	264.1
M BLDG	NICKEL ACETATE WASTE	NONE	252.8
M BLDG	NICKEL ACETATE, M-306	D007 D009	286.0
M BLDG	NICKEL ACETATE, SODIUM HYDROXIDE RINSE WATER	D002	334.4
[illegible]	NICKEL ADDITIVE SA-1	NONE	48.3
[illegible]	NICKEL ADDITIVE Y-17	NONE	20.5
[illegible]	NICKEL ADDITIVE Y-17	NONE	21.0
M BLDG	NICKEL BRIGHT WASTE	D002 D004 D007 D008	531.7
M BLDG	NICKEL BRIGHT WASTE	D002 D004 D007 D008	590.5
M BLDG	NICKEL CHLORIDE, HYDROCHLORIC ACID WASTE	D002 D004 D006	552.9
M BLDG	NICKEL CHLORIDE, M-314	D002 D007	450.0
M BLDG	NICKEL SULFAMATE	D002	400.0
M BLDG	NICKEL WASTE, BORIC ACID, NICKELOUS CHLORIDE, M-206	NONE	240.0
M BLDG	NICKEL WASTE, M-259	D002	200.0
M BLDG	NICKEL WASTE, M-279	D002	147.4
M BLDG	NICKEL WASTE, M-282	NONE	271.0
M BLDG	NITRIC ACID DUCT RINSE WASTE, M-319	D002 D006 D007	148.2
M BLDG	NITRIC ACID RINSE WATER	D002	498.2
M BLDG	NITRIC ACID RINSE WATER	D002 D007 D008	531.5
M BLDG	NITRIC ACID WASTE, M-238	D002 D006 D007	286.0
M BLDG	NITRIC ACID WASTE, M-311	D002 D006 D007	462.0
M BLDG	OAKITE 191	NONE	198.0
M BLDG	OAKITE 30	NONE	34.5
M BLDG	OAKITE 30	NONE	7.3
M BLDG	OAKITE 30 RINSE WATER	D002	501.2
M BLDG	OAKITE 30 RINSE WATER	D002	519.4
M BLDG	OAKITE 30 RINSE WATER	D002	488.4
[illegible]	OAKITE 30 RINSE WATER	D002	472.7

M BLDG	OAKITE 30 RINSE WATER	D002	493.2
M BLDG	OAKITE 30 RINSE WATER	D002	618.4
M BLDG	OAKITE ALUMINUM CLEANER	D002	145.3
[illegible]JG	OAKITE CITRIDET	D001	40.3
[illegible] DG	OIL WASTE	NONE	400.9
M BLDG	OIL WASTE	NONE	302.4
M BLDG	OIL WASTE	NONE	433.2
M BLDG	OIL WASTE	NONE	434.4
M BLDG	OIL WASTE	NONE	233.6
M BLDG	OIL WASTE	NONE	415.1
M BLDG	OIL WASTE, ABSORBED	D004	120.7
M BLDG	OIL WASTE, HYDRAULIC OIL	NONE	235.0
M BLDG	OIL WASTE, M-746	NONE	282.1
M BLDG	OIL WASTE, SILICON, MINERAL OIL	NONE	307.1
M BLDG	OIL, WATER WASTE	NONE	412.0
M BLDG	OXIDE REMOVAL DEBRIS	NONE	58.0
M BLDG	PASSIVATING WASTE DEBRIS	D007	9.3
M BLDG	PASSIVATING WASTE DEBRIS	D007	28.3
M BLDG	PERCHLOROETHYLENE	D039 F001	408.5
M BLDG	PERCHLOROETHYLENE DEBRIS	D039	2.2
M BLDG	PETROLEUM NAPHTHA	D001 D018 D039	86.0
M BLDG	PETROLEUM NAPHTHA	D001 D018 D039	86.0
M BLDG	PETROLEUM NAPHTHA	D001 D018 D039	45.0
M BLDG	PETROLEUM NAPHTHA	D001 D018 D039	45.0
M BLDG	PETROLEUM NAPHTHA	D001 D018 D039	86.0
M BLDG	PETROLEUM NAPHTHA	D001 D018 D039	45.0
M BLDG	PETROLEUM NAPHTHA	D001 D018 D039	45.0
M BLDG	PETROLEUM NAPHTHA	D001 D018 D039	86.0
[illegible]DG	PETROLEUM NAPHTHA	D001 D018 D039	45.0
[illegible] DG	PETROLEUM NAPHTHA	D001 D018 D039	45.0
M BLDG	PETROLEUM NAPHTHA	D001 D018 D039	86.0
M BLDG	PETROLEUM NAPHTHA	D001 D018 D039	86.0
M BLDG	PETROLEUM NAPHTHA	D001 D018 D039	45.0
M BLDG	PETROLEUM NAPHTHA	D001 D018 D039	45.0
M BLDG	PETROLEUM NAPHTHA	D001 D018 D039	86.0
M BLDG	PETROLEUM NAPHTHA	D001 D018 D039	86.0
M BLDG	PETROLEUM NAPHTHA	D001 D018 D039	86.0
M BLDG	PETROLEUM NAPHTHA	D001 D018 D039	45.0
M BLDG	PETROLEUM NAPHTHA, UNIT 341-01314	D001 D018 D039	75.0
M BLDG	PETROLEUM NAPHTHA, UNIT 341-01314	D001 D018 D039	75.0
M BLDG	PETROLEUM NAPHTHA, UNIT 341-01314	D001 D018 D039	75.0
M BLDG	PETROLEUM NAPHTHA, UNIT 341-01330	D001 D018 D039	75.0
M BLDG	PETROLEUM NAPHTHA, UNIT 341-01330	D001 D018 D039	75.0
M BLDG	PETROLEUM NAPHTHA, UNIT 341-01330	D001 D018 D039	75.0
M BLDG	PETROLEUM NAPTHA	D001 D018 D039	86.0
M BLDG	PETROLEUM NAPTHA	D001 D018 D039	86.0
M BLDG	PETROLEUM NAPTHA	D001 D018 D039	86.0
M BLDG	PETROLEUM NAPTHA	D001 D018 D039	45.0
M BLDG	PETROLEUM NAPTHA	D001 D018 D039	86.0
M BLDG	PETROLEUM NAPTHA	D001 D018 D039	86.0
M BLDG	PETROLEUM NAPTHA	D001 D018 D039	45.0
M BLDG	PETROLEUM NAPTHA	D001 D018 D039	45.0
M BLDG	PETROLEUM NAPTHA	D001 D018 D039	86.0
[illegible] G	PHOSPHORIC ACID DEBRIS	NONE	27.1
[illegible]DG	PHOSPHORIC ACID DEBRIS	NONE	30.0

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Bldg M

M BLDG	PHOSPHORIC ACID RINSE WATER	D002	530.6
M BLDG	PHOSPHORIC ACID RINSE WATER	D002	640.3
M BLDG	PHOSPHORIC ACID, M-250	D002	100.0
M BLDG	POTASSIUM PERMANGANATE WASTE, M-276	D002	393.3
M BLDG	PYROLITE ADDITION AGENT	D002	14.6
M BLDG	RINSE WATER	NONE	456.2
M BLDG	RINSE WATER	NONE	480.5
M BLDG	SAHOOOL BLACK POWDER	NONE	47.0
M BLDG	SCRAP DYE TANK	D006 D007	11.4
M BLDG	SODIUM CYANIDE	D003 P106	103.0
M BLDG	SODIUM CYANIDE DEBRIS	D003	11.1
M BLDG	SODIUM HYDROXIDE DEBRIS	NONE	93.6
M BLDG	SODIUM HYDROXIDE POTASSIUM HYDROXIDE DEBRIS	NONE	4.7
M BLDG	SODIUM HYDROXIDE RINSE WATER	D002	614.4
M BLDG	SODIUM HYDROXIDE RINSE WATER	D002	457.3
M BLDG	SODIUM HYDROXIDE RINSE WATER	D002	496.8
M BLDG	SODIUM HYDROXIDE SOLUTION	D002	543.7
M BLDG	SODIUM HYDROXIDE SOLUTION, M-289	NONE	182.0
M BLDG	SODIUM HYDROXIDE WASTE, M-283	NONE	402.0
M BLDG	SODIUM HYDROXIDE, POTASSIUM HYDROXIDE DEBRIS	NONE	4.0
M BLDG	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE	D002	482.8
M BLDG	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE	D002	525.8
M BLDG	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE	D002	199.7
M BLDG	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE	D002	286.0
M BLDG	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE	D002	225.0
M BLDG	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE, M-204	D002	240.0
M BLDG	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE, M-207	D002	240.0
M BLDG	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE, M-215	D002	240.0
M BLDG	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE, M-218	D002	240.0
M BLDG	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE, M-225	D002	240.0
M BLDG	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE, M-230	D002	240.0
M BLDG	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE, M-233	D002	240.0
M BLDG	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE, M-240	D002	240.0
M BLDG	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE, M-251	D002	450.0
M BLDG	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE, M-257	D002	200.0
M BLDG	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE, M-263	D002	265.5
M BLDG	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE, M-269	D002	258.0

M BLDG	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE, M-270	D002	243.2
M BLDG	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE, M-271	D002	250.5
[illegible]DG	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE, M-273	D002	239.6
M BLDG	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE, M-300	D002	232.2
M BLDG	SODIUM HYDROXIDE, RINSE WATER	D002	588.7
M BLDG	SODIUM HYDROXIDE, ZINC OXIDE RINSE WATER	D002	507.8
M BLDG	SOIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE, M-248	D002	240.0
M BLDG	SPARTAN DC-13 CLEANER	D002	38.9
M BLDG	STODDARD SOLVENT, M-266	D001	103.9
M BLDG	SULFURIC ACID	D002	28.6
M BLDG	SULFURIC ACID RINSE WATER	D002	523.6
M BLDG	SULFURIC ACID SOLUTION	D002	330.1
M BLDG	TETRA ETCH	D001	1.1
M BLDG	TRIM-SOL WASTE	NONE	134.2
M BLDG	TURCO KWIK SOLVE	D001	108.0
M BLDG	TURCO NITRAD	D002	66.5
M BLDG	UNICROME C11-X-B	D007	72.2
M BLDG	VINYL PYRROLIDONE	NONE	3.2
M BLDG	WOODS NICKEL RINSE WATER	D004	573.6
M BLDG	WOODS NICKEL, BRIGHT NICKEL DEBRIS	NONE	571.8
M BLDG	WOODS NICKEL, BRIGHT NICKEL DEBRIS	NONE	167.4
M BLDG	WOODS NICKEL, BRIGHT NICKEL DEBRIS	NONE	446.9
[illegible]DG	ZINCATE WASTE	D002	63.8
[illegible]DG	ZINCATE WASTE, M-244	D002	110.0
M BLDG	ZINCATE WASTE, M-265	D002	250.0
M BLDG (PS-01)	ACETONE, ALCOHOL WASTE	D001 F003	265.0
M BLDG (PS-01)	ACETONE, ALCOHOL WASTE, M-484	D001 F003	295.2
M BLDG (PS-01)	ACETONE, ALCOHOL WASTE, M-493	D001 F003	235.0
M BLDG (PS-01)	ACETONE, ALCOHOL WASTE, M-706	D001 F003	413.5
M BLDG (PS-02)	RINSE WATER, NITRIC	D002 D006 D007 D008	480.0
M BLDG (PS-02)	RINSE WATER, NITRIC, M-449	D002	253.0
M BLDG (PS-02)	RINSE WATER, NITRIC, M-473	D002	596.6
M BLDG (PS-02)	RINSE WATER, NITRIC, M-474	D002 D006 D007	559.5
M BLDG (PS-02)	RINSE WATER, NITRIC, M-518	D002 D006 D007 D008	491.3
M BLDG (PS-02)	RINSE WATER, NITRIC, M-560	D002 D007	466.4
M BLDG (PS-02)	RINSE WATER, NITRIC, M-73	D002 D006 D007 D008	532.0
M BLDG (PS-02)	RINSE WATER, SULFURIC, M-477	D002	361.6
M BLDG (PS-02)	RINSE WATER, SULFURIC, M-478	D002	366.6
M BLDG (PS-02)	RINSE WATER, SULFURIC, M-483	D002	462.0
M BLDG (PS-03)	CHROMIC ACID SOLUTION, M-487	D002 D007	645.3
M BLDG (PS-03)	CHROMIC ACID SOLUTION, M-488	D002 D007	601.4
M BLDG (PS-03)	RINSE WATER, FLOOR WASTE	D007 D008	414.0
M BLDG (PS-03)	RINSE WATER, FLOOR WASTE	D007 D008	407.0
M BLDG (PS-03)	RINSE WATER, FLOOR WASTE	D007 D008	411.0
M BLDG (PS-03)	RINSE WATER, FLOOR WASTE	D007 D008	433.0
M BLDG (PS-03)	RINSE WATER, FLOOR WASTE	D007 D008	421.0
M BLDG (PS-03)	RINSE WATER, FLOOR WASTE	D007 D008	398.0
[illegible]LDG (PS-03)	RINSE WATER, FLOOR WASTE	D007 D008	402.0
[illegible]DG (PS-03)	RINSE WATER, FLOOR WASTE	D007 D008	451.0

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Bldg. M1

M BLDG (PS-05)	RINSE WATER, M-69	NONE	508.4
M BLDG (PS-05)	RINSE WATER, M-70	NONE	474.0
M BLDG (PS-05)	RINSE WATER, M-71	NONE	242.4
M BLDG (PS-08)	RINSE WATER, COPPER CYANIDE	F007 F009	451.2
M BLDG (PS-08)	RINSE WATER, COPPER CYANIDE	F007 F009	535.7
M BLDG (PS-09)	BRIGHTENER BATH WASTE WATER, M-491	D004 D006 F007 F009	475.6
M BLDG (PS-09)	BRIGHTENER BATH WASTE WATER, M-497	D004 D006 F007 F009	456.3
M BLDG (PS-09)	BRIGHTENER BATH WASTE WATER, M-498	D004 D006 F007 F009	462.6
M BLDG (PS-09)	BRIGHTENER BATH WASTE WATER, M-499	D004 D006 F007 F009	461.0
M BLDG (PS-09)	BRIGHTENER BATH WASTE WATER, M-500	D004 D006 F007 F009	475.6
M BLDG (PS-09)	BRIGHTENER BATH WASTE WATER, M-501	D004 D006 F007 F009	468.2
M BLDG (PS-09)	BRIGHTENER BATH WASTE WATER, M-502	D004 D006 F007 F009	476.6
M BLDG (PS-09)	BRIGHTENER BATH WASTE WATER, M-503	D004 D006 F007 F009	475.4
M BLDG (PS-09)	BRIGHTENER BATH WASTE WATER, M-504	D004 D006 F007 F009	475.5
M BLDG (PS-09)	BRIGHTENER BATH WASTE WATER, M-505	D004 D006 F007 F009	476.7
M BLDG (PS-09)	BRIGHTENER BATH WASTE WATER, M-506	D004 D006 F007 F009	476.6
M BLDG (PS-09)	BRIGHTENER BATH WASTE WATER, M-507	D004 D006 F007 F009	474.3
M BLDG (PS-09)	BRIGHTENER BATH WASTE WATER, M-508	D004 D006 F007 F009	474.8
M BLDG (PS-09)	BRIGHTENER BATH WASTE WATER, M-509	D004 D006 F007 F009	476.9
M BLDG (PS-09)	BRIGHTENER BATH WASTE WATER, M-510	D004 D006 F007 F009	476.8
M BLDG (PS-09)	BRIGHTENER BATH WASTE WATER, M-511	D004 D006 F007 F009	476.8
M BLDG (PS-09)	BRIGHTENER BATH WASTE WATER, M-512	D004 D006 F007 F009	476.6
M BLDG (PS-09)	BRIGHTENER BATH WASTE WATER, M-513	D004 D006 F007 F009	478.5
M BLDG (PS-09)	BRIGHTENER BATH WASTE WATER, M-514	D004 D006 F007 F009	468.2
M BLDG (PS-09)	BRIGHTENER BATH WASTE WATER, M-515	D004 D006 F007 F009	476.0
M BLDG (PS-09)	BRIGHTENER BATH WASTE WATER, M-516	D004 D006 F007 F009	475.4
M BLDG (PS-09)	BRIGHTENER BATH WASTE WATER, M-519	D004 D006 F007 F009	477.4
M BLDG (PS-09)	BRIGHTENER BATH WASTE WATER, M-520	D004 D006 F007 F009	482.2
M BLDG (PS-09)	BRIGHTENER BATH WASTE WATER, M-521	D004 D006 F007 F009	484.4
M BLDG (PS-09)	BRIGHTENER BATH WASTE WATER, M-522	D004 D006 F007 F009	484.4
M BLDG (PS-09)	BRIGHTENER BATH WASTE WATER, M-523	D004 D006 F007 F009	481.1
M BLDG (PS-09)	BRIGHTENER BATH WASTE WATER, M-524	D004 D006 F007 F009	487.2
M BLDG (PS-09)	BRIGHTENER BATH WASTE WATER, M-525	D004 D006 F007 F009	484.0
M BLDG (PS-09)	BRIGHTENER BATH WASTE WATER, M-526	D004 D006 F007 F009	474.2
M BLDG (PS-09)	BRIGHTENER BATH WASTE WATER, M-527	D004 D006 F007 F009	480.2
M BLDG (PS-09)	BRIGHTENER BATH WASTE WATER, M-528	D004 D006 F007 F009	474.8
M BLDG (PS-09)	BRIGHTENER BATH WASTE WATER, M-529	D004 D006 F007 F009	481.8
M BLDG (PS-09)	BRIGHTENER BATH WASTE WATER, M-530	D004 D006 F007 F009	228.4
M BLDG (PS-09)	BRIGHTENER BATH WASTE WATER, M-531	D004 D006 F007 F009	472.1
M BLDG (PS-09)	BRIGHTENER BATH WASTE WATER, M-532	D004 D006 F007 F009	486.6
M BLDG (PS-09)	CYANIDE PIT WASTE	D006 D007 F007 F009	132.4
M BLDG (PS-10)	DYE WASTE, M-481	D007	475.4
M BLDG (PS-10)	DYE WASTE, M-562	D006 D007	426.5
M BLDG (PS-10)	DYE WASTE, M-75	D007	446.6
M BLDG (PS-12)	PHOSPHORIC ACID RINSE WASTE, M-475	D002	623.3
M BLDG (PS-12)	PHOSPHORIC ACID RINSE WASTE, M-476	D002	801.6
M BLDG (PS-13)	FREON WASTE, M-088	F001	638.6
M BLDG (PS-13)	FREON WASTE, M-468	F001	622.6
M BLDG (PS-13)	FREON WASTE, M-495	F001	734.0
M BLDG (PS-14)	NICKEL ACETATE WASTE	D006 D007	488.2
M BLDG (PS-14)	NICKEL ACETATE WASTE, M-479	NONE	496.6
M BLDG (PS-15)	NICKEL FLOOR WASTE	D002 D007	172.5
M BLDG (PS-15)	NICKEL FLOOR WASTE, M-489	D002 D007	474.7
M BLDG (PS-16)	OAKITE POWDER	NONE	433.4
M BLDG (PS-17)	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE	D002	504.1

M BLDG (PS-17)	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE, M-469	D002	400.0
M BLDG (PS-17)	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE, M-480	D002	498.2
G (PS-17)	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE, M-482	D002	480.4
M BLDG (PS-17)	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE, M-485	D002 D007	651.3
M BLDG (PS-17)	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE, M-486	D002 D007	415.4
M BLDG (PS-17)	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE, M-490	D002	489.1
M BLDG (PS-17)	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE, M-492	D002	450.3
M BLDG (PS-17)	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE, M-494	D002	507.5
M BLDG (PS-17)	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE, M-496	D002 D007	501.4
M BLDG (PS-17)	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE, M-535	D002	275.7
M BLDG (PS-17)	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE, M-542	D002	411.0
M BLDG (PS-17)	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE, M-551	D002	422.0
M BLDG (PS-17)	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE, M-552	D002	377.0
M BLDG (PS-17)	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE, M-555	D002	424.0
OG (PS-17)	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE, M-558	D002	428.9
BLDG (PS-17)	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE, M-559	D002	471.2
M BLDG (PS-17)	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE, M-564	D002	489.1
M BLDG (PS-17)	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE, M-68	D002	437.4
M BLDG (PS-17)	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE, M-72	D002	489.6
M BLDG (PS-17)	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE, M-87	D002	494.4
M BLDG (PS-21)	BIOACT EC-7 WASTE, M-696	D001	446.5
M BLDG SUBSTATION	PCB CAPACITORS >500PPM, SN: 50K-2764GG, -2876C, -2758GG, -2866C, -2016B, -2807A	PCB1	356.4
M BLDG SUBSTATION	PCB DEBRIS >500PPM, FROM SN: PAV024001	PCB2	99.0
M BLDG SUBSTATION	PCB OIL >500PPM, FROM SN: PAV024001	PCB2	688.6
M BLDG SUBSTATION	PCB OIL >500PPM, FROM SN: PAV024001	PCB2	627.0
M BLDG SUBSTATION	PCB OIL >500PPM, FROM SN: PAV024001	PCB2	688.6
M BLDG SUBSTATION	PCB OIL >500PPM, FROM SN: PAV024001	PCB2	688.6
M BLDG SUBSTATION	PCB TRANSFORMER >500PPM, SN: PAV024001, OUT OF SERVICE DATE 12-09-91	PCB1	5288.8
G, BLDG 27	EXPLOSIVE PROCESS SOLVENT WASTE	D001 F003	187.7
G, PS-01	ACETONE, ALCOHOL WASTE	D001 F003	131.5

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Bldg. M

M BLDG, PS-01	ACETONE, ALCOHOL WASTE	D001 F003	241.1
M BLDG, PS-09	CYANIDE PIT WASTE	D003 D006 D007 D011 F007 F009	213.1
M BLDG, PS-10	DYE WASTE	D007	477.5
M BLDG, PS-10	DYE WASTE	D006 D007	357.7
M BLDG, PS-10	DYE WASTE	D007	472.7
M BLDG, PS-10	DYE WASTE	D006 D007	493.6
M BLDG, PS-10	DYE WASTE, M-77	D007	427.5
M BLDG, PS-13	FREON WASTE	F001	283.8
M BLDG, PS-13	FREON WASTE	F001	510.3
M BLDG, PS-14	NICKEL ACETATE WASTE	NONE	471.4
M BLDG, PS-14	NICKEL ACETATE WASTE	NONE	355.5
M BLDG, PS-14	NICKEL ACETATE WASTE	NONE	479.1
M BLDG, PS-16	OAKITE 30 WASTE	D002	430.3
M BLDG, PS-17	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE	D002	461.7
M BLDG, PS-17	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE	D002	501.8
M BLDG, PS-17	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE	D002	476.3
M BLDG, PS-17	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE	D002	486.3
M BLDG, PS-17	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE	D002	493.3
M BLDG, PS-21	BIOACT EC7 WASTE	D001	318.4
M BLDG- BRINE LINE	ASBESTOS WASTE, DEBRIS, PIPE	NONE	7100.0
M BLDG- BRINE LINE	ASBESTOS WASTE, DEBRIS, PIPE	NONE	5600.0
M BLDG- BRINE LINE	ASBESTOS WASTE, DEBRIS, PIPE	NONE	8000.0
M BLDG- BRINE LINE	ASBESTOS WASTE, DEBRIS, PIPE	NONE	8000.0
M BLDG- BRINE LINE	ASBESTOS WASTE, DEBRIS, PIPE	NONE	8000.0
M BLDG- BRINE LINE	ASBESTOS WASTE, DEBRIS, PIPE	NONE	8000.0
M-008	ETHYLENE GLYCOL, XYLENE CLEANUP	F003	44.1
M-008	FREON WASTE	F001	388.1
M-008	FREON WASTE, M-331	F001	492.6
M-008	FREON WASTE, M-415	F001	625.0
M-008	FREON WASTE, M-450	F001	571.8
M-008	M WASTE WATER COOLANT	NONE	464.8
M-008	M WASTE WATER COOLANT	NONE	484.8
M-008	M WASTE WATER COOLANT, M-346	F002	468.6
M-008	M WASTE WATER COOLANT, M-354	F002	467.1
M-008	M WASTE WATER COOLANT, M-355	F002	493.2
M-008	M WASTE WATER COOLANT, M-361	F002	434.0
M-008	M WASTE WATER COOLANT, M-365	F002	419.0
M-008	M WASTE WATER COOLANT, M-366	F002	461.0
M-008	M WASTE WATER COOLANT, M-370	F002	461.0
M-008	M WASTE WATER COOLANT, M-381	F002	461.5
M-008	M WASTE WATER COOLANT, M-386	F002	467.3
M-008	M WASTE WATER COOLANT, M-387	F002	473.0
M-008	M WASTE WATER COOLANT, M-388	F002	487.0
M-008	M WASTE WATER COOLANT, M-392	F002	409.0
M-008	M WASTE WATER COOLANT, M-393	F002	449.0
M-008	M WASTE WATER COOLANT, M-395	F002	492.9
M-008	M WASTE WATER COOLANT, M-397	F002	462.7
M-008	M WASTE WATER COOLANT, M-398	F002	465.3
M-008	M WASTE WATER COOLANT, M-399	F002	497.0
M-008	M WASTE WATER COOLANT, M-400	F002	473.2

M-008	M WASTE WATER COOLANT, M-401	F002	487.8
M-008	M WASTE WATER COOLANT, M-402	F002	465.9
M-008	M WASTE WATER COOLANT, M-405	F002	475.0
[illegible]	M WASTE WATER COOLANT, M-406	F002	455.0
[illegible]	M WASTE WATER COOLANT, M-411	F002	452.6
M-008	M WASTE WATER COOLANT, M-414	F002	466.1
M-008	M WASTE WATER COOLANT, M-418	F002	431.8
M-008	M WASTE WATER COOLANT, M-420	F002	483.8
M-008	M WASTE WATER COOLANT, M-448	F002	486.7
M-008	M WASTE WATER COOLANT, M-452	NONE	485.8
M-008	M WASTE WATER COOLANT, M-457	NONE	476.0
M-008	M WASTE WATER COOLANT, M-459	NONE	476.2
M-008	M WASTE WATER COOLANT, M-464	NONE	282.2
M-008	M WASTE WATER COOLANT, M-465	NONE	483.3
M-008	M WASTE WATER COOLANT, M-467	NONE	485.1
M-008	OIL WASTE	NONE	427.1
M-008	OIL WASTE	NONE	436.5
M-008	OIL WASTE	NONE	420.1
M-008	OIL WASTE	NONE	375.1
M-008	OIL WASTE	NONE	369.8
M-008	OIL WASTE	NONE	434.1
M-008	OIL WASTE	NONE	331.2
M-008	OIL WASTE	NONE	354.6
M-008	PETROLEUM NAPHTHA	D001 D018 D039	62.6
M-008	PETROLEUM NAPHTHA	D001 D018 D039	62.6
M-008	PETROLEUM NAPHTHA	D001 D018 D039	62.6
M-008	PETROLEUM NAPHTHA	D001 D018 D039	62.6
M-008	PETROLEUM NAPHTHA	D001 D018 D039	62.6
[illegible]	PETROLEUM NAPHTHA	D001 D018 D039	62.6
[illegible]	PETROLEUM NAPHTHA	D001 D018 D039	62.6
M-008	PETROLEUM NAPHTHA	D001 D018 D039	65.5
M-008	PETROLEUM NAPHTHA	D001 D018 D039	65.5
M-008	PETROLEUM NAPHTHA	D001 D018 D039	62.6
M-008	PETROLEUM NAPHTHA	D001 D018 D039	65.5
M-008	PETROLEUM NAPHTHA	D001 D018 D039	65.5
M-008	PETROLEUM NAPHTHA	D001 D018 D039	65.5
M-008	PETROLEUM NAPHTHA	D001 D018 D039	62.6
M-008	PETROLEUM NAPHTHA	D001 D018 D039	65.5
M-008	PETROLEUM NAPHTHA	D001 D018 D039	62.6
M-008	PETROLEUM NAPHTHA	D001 D018 D039	62.6
M-008	PETROLEUM NAPHTHA	D001 D018 D039	62.6
M-008	PETROLEUM NAPHTHA	D001 D018 D039	62.6
M-008	PETROLEUM NAPHTHA	D001 D018 D039	62.6
M-008	PETROLEUM NAPHTHA	D001 D018 D039	62.6
M-008	PETROLEUM NAPHTHA	D001 D018 D039	62.6
M-008	PETROLEUM NAPHTHA	D001 D018 D039	62.6
M-008	PETROLEUM NAPHTHA	D001 D018 D039	62.6
M-008	PETROLEUM NAPHTHA	D001 D018 D039	62.6
M-008	PETROLEUM NAPHTHA	D001 D018 D039	62.6
M-008	PETROLEUM NAPHTHA	D001 D018 D039	62.6
M-008	PETROLEUM NAPHTHA	D001 D018 D039	62.6
M-008	PETROLEUM NAPHTHA	D001 D018 D039	62.6
[illegible]	PETROLEUM NAPHTHA	D001 D018 D039	62.6
[illegible]	PETROLEUM NAPHTHA	D001 D018 D039	62.6
[illegible]	PETROLEUM NAPHTHA	D001 D018 D039	62.6

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M-008	PETROLEUM NAPHTHA	D001 D018 D039	62.6
M-008	PETROLEUM NAPHTHA	D001 D018 D039	62.6
M-008	PETROLEUM NAPHTHA	D001 D018 D039	62.6
[illegible]3	PETROLEUM NAPHTHA	D001 D018 D039	62.6
M-008	PETROLEUM NAPHTHA	D001 D018 D039	62.6
M-008	PETROLEUM NAPHTHA	D001 D018 D039	62.6
[illegible]008	PETROLEUM NAPHTHA	D001 D018 D039	65.5
M-008	PETROLEUM NAPHTHA	D001 D018 D039	86.0
M-008	PETROLEUM NAPHTHA	D001 D018 D039	65.5
M-008	PETROLEUM NAPHTHA	D001 D018 D039	65.5
M-008	PETROLEUM NAPHTHA	D001 D018 D039	65.5
M-008	PETROLEUM NAPHTHA	D001 D018 D039	62.6
M-019	CHROMIUM SLUDGE WITH NITRIC ACID	D007	618.4
M-019	CHROMIUM SYSTEM DEBRIS (#28)	D007	154.7
M-019	CHROMIUM SYSTEM DEBRIS (#29)	D007	160.9
M-019	CHROMIUM SYSTEM DEBRIS (#30)	D007	116.2
M-019	CHROMIUM SYSTEM DEBRIS (#63)	D007	230.0
M-019	CLEANUP MATERIALS AND PPE (#26)	D006 D007 D010	96.6
M-019	CLEANUP MATERIALS AND PPE (#27)	D006 D007 D010	94.7
M-019	CLEANUP MATERIALS AND PPE (#53)	D006 D007 D010	88.9
M-019	PCB BALLASTS >500PPM, (24) OUT OF SERVICE DATE 04-07-92	PCB2	241.5
M-019	PLATING SHOP CLEANUP MATERIALS (#104)	D006 D007 D010	86.4
M-019	PLATING SHOP CLEANUP MATERIALS (#105)	D006 D007 D010	82.5
M-019	PLATING SHOP CLEANUP MATERIALS (#94)	D006 D007 D010	104.0
[illegible]19	PLATING SHOP FLOOR DEBRIS (#102)	D006 D007 D010	216.6
[illegible]19	PLATING SHOP WASH WATER (#100)	D007	423.0
[illegible]019	PLATING SHOP WASH WATER (#101)	D006 D007 D008	120.5
[illegible]019	PLATING SHOP WASH WATER (#103)	D006 D007	356.0
M-019	PLATING SHOP WASH WATER (#19)	D006	503.7
M-019	PLATING SHOP WASH WATER (#20)	D006	466.9
M-019	PLATING SHOP WASH WATER (#25)	D006 D007	459.8
M-019	PLATING SHOP WASH WATER (#31)	D006 D007	484.1
M-019	PLATING SHOP WASH WATER (#33)	D006 D007 D008	504.7
M-019	PLATING SHOP WASH WATER (#35)	D006 D007 D008	493.5
M-019	PLATING SHOP WASH WATER (#37)	D008	469.3
M-019	PLATING SHOP WASH WATER (#38)	D006 D007 D008	402.1
M-019	PLATING SHOP WASH WATER (#39)	D006 D007 D008	332.3
M-019	PLATING SHOP WASH WATER (#40)	D006 D007 D008	460.9
M-019	PLATING SHOP WASH WATER (#41)	D006 D007 D008	489.2
M-019	PLATING SHOP WASH WATER (#43)	D006 D007	460.2
M-019	PLATING SHOP WASH WATER (#44)	D006 D007 D008	489.2
M-019	PLATING SHOP WASH WATER (#45)	D007	479.7
M-019	PLATING SHOP WASH WATER (#49)	D007	154.7
M-019	PLATING SHOP WASH WATER (#54)	D007 D008	475.9
[illegible]-019	PLATING SHOP WASH WATER (#57)	D006	484.0
M-019	PLATING SHOP WASH WATER (#58)	D006 D007 D008	465.0
M-019	PLATING SHOP WASH WATER (#59)	D006 D007	476.0
M-019	PLATING SHOP WASH WATER (#61)	D006	484.0
M-019	PLATING SHOP WASH WATER (#62)	D006 D007	439.0
M-019	PLATING SHOP WASH WATER (#65)	D006 D007	501.1
[illegible]9	PLATING SHOP WASH WATER (#66)	D006 D007 D008	478.6

M-019	PLATING SHOP WASH WATER (#71)	D006 D007 D008	502.3
M-019	PLATING SHOP WASH WATER (#73)	D007	431.9
M-019	PLATING SHOP WASH WATER (#79)	D006 D007	489.3
[illegible]	PLATING SHOP WASH WATER (#87)	D007	473.5
[illegible]9	PLATING SHOP WASH WATER (#88)	D006 D007 D008	486.2
[illegible].9	PLATING SHOP WASH WATER (#88)	D007	485.5
M-019	PLATING SHOP WASH WATER (#89)	D006	481.1
M-019	PLATING SHOP WASH WATER (#95)	D007	491.0
M-019	PLATING SHOP WASH WATER (#96)	D007	489.3
M-019	PLATING SHOP WASH WATER (#97)	D006 D007	483.5
M-019	PLATING SHOP WASH WATER (#98)	D006 D007	487.0
M-019	PLATING SHOP WASH WATER (#99)	D006 D007	476.6
M-019	PLATING SHOP WASH WATER- ACID (#21)	D002 D006 D007	461.5
M-019	PLATING SHOP WASH WATER- ACID (#22)	D002 D006 D007	517.5
M-019	PLATING SHOP WASH WATER- ACID (#23)	D002 D006 D007	485.9
M-019	PLATING SHOP WASH WATER- ACID (#24)	D002 D006 D007	487.6
M-019	PLATING SHOP WASH WATER- ACID (#34)	D002 D006 D007 D008	468.6
M-019	PLATING SHOP WASH WATER- BASE (#14)	D002 D006	304.4
M-019	PLATING SHOP WASH WATER- BASE (#15)	D002 D006	490.0
M-019	PLATING SHOP WASH WATER- BASE (#16)	D002 D006	486.0
M-019	PLATING SHOP WASH WATER- CYANIDES (#36)	D006 D007 D008 F007 F009	480.8
M-019	PLATING SHOP WOOD DEBRIS (#92)	D006 D007 D010	189.6
M-019	PLATING SHOP WOOD DEBRIS (#93)	D006 D007 D010	431.0
M-019	WOOD DEBRIS, CLEANUP DEBRIS (#1)	D006 D007 D010	162.7
M-019	WOOD DEBRIS, CLEANUP DEBRIS (#10)	D006 D007 D010	140.6
M-019	WOOD DEBRIS, CLEANUP DEBRIS (#11)	D006 D007 D010	207.5
M-019	WOOD DEBRIS, CLEANUP DEBRIS (#12)	D006 D007 D010	194.6
[illegible]19	WOOD DEBRIS, CLEANUP DEBRIS (#13)	D006 D007 D010	113.0
[illegible]	WOOD DEBRIS, CLEANUP DEBRIS (#2)	D006 D007 D010	183.9
[illegible]19	WOOD DEBRIS, CLEANUP DEBRIS (#3)	D006 D007 D010	169.2
M-019	WOOD DEBRIS, CLEANUP DEBRIS (#4)	D006 D007 D010	169.0
M-019	WOOD DEBRIS, CLEANUP DEBRIS (#46)	D006 D007 D010	92.0
M-019	WOOD DEBRIS, CLEANUP DEBRIS (#47)	D006 D007 D010	146.7
M-019	WOOD DEBRIS, CLEANUP DEBRIS (#48)	D006 D007 D010	65.1
M-019	WOOD DEBRIS, CLEANUP DEBRIS (#5)	D006 D007 D010	185.6
M-019	WOOD DEBRIS, CLEANUP DEBRIS (#6)	D006 D007 D010	157.2
M-019	WOOD DEBRIS, CLEANUP DEBRIS (#60)	D006 D007 D010	180.0
M-019	WOOD DEBRIS, CLEANUP DEBRIS (#7)	D006 D007 D010	164.6
M-019	WOOD DEBRIS, CLEANUP DEBRIS (#8)	D006 D007 D010	136.9
M-019	WOOD DEBRIS, CLEANUP DEBRIS (#9)	D006 D007 D010	155.2
M-038	PETROLEUM NAPHTHA	D001 D018 D039	65.5
M-038	PETROLEUM NAPHTHA	D001 D018 D039	65.5
M-038	PETROLEUM NAPHTHA	D001 D018 D039	65.5
M-038	PETROLEUM NAPHTHA	D001 D018 D039	65.5
M-102	ASPHALT	NONE	89.3
M-103	EPON 828 RESIN	NONE	1.4
M-103	MARKER BOARD CLEANER	D002	2.5
M-103	VERSAMID 140	NONE	0.9
M-108	ACETONE, ISOPROPANOL WASTE, M-347	D001 F003	227.1
M-108	ACETONE, ISOPROPANOL WASTE, M-379	D001 F003	353.0
M-108	ACETONE, ISOPROPANOL WASTE, M-409	D001 F003	364.2
M-108	ACETONE, ISOPROPANOL, TRACE PCB WASTE	PCB2 D001 F001 F003	426.5
[illegible]	CHROMATE SOLUTION	D007	197.7

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M-108	CHROMIUM SYSTEM DEBRIS	D007	160.9
M-108	CYANIDE RINSE WATER, M-330	D006 D007 F007 F009	445.7
M-108	CYANIDE WASTE SOLUTION, M-296	D011 F007 F009	387.7
[illegible]3	DYE WASTE, M-350	D006 D007	274.7
M-108	DYE WASTE, M-385	D007	462.0
[illegible]108	DYE WASTE, M-389	D007	487.8
[illegible]108	DYE WASTE, M-396	D007	437.0
M-108	DYE WASTE, M-444	NONE	261.0
M-108	FERRIC CHLORIDE	D002	586.0
M-108	FERRIC CHLORIDE	D002	536.0
M-108	FERRIC CHLORIDE	D002 D006 D007 D008	574.7
M-108	FERRIC CHLORIDE	D002 D006 D007 D008	643.1
M-108	FREON WASTE, M-364	F001	741.9
M-108	M DYE WASTE, M-380	D007	378.0
M-108	M DYE WASTE, M-382	D007	100.0
M-108	M FLOOR WASTE, M-442	D007 F003	198.3
M-108	M RINSE WATER, M-334	NONE	479.1
M-108	M RINSE WATER, M-335	NONE	482.7
M-108	M RINSE WATER, M-338	NONE	265.6
M-108	M RINSE WATER, M-340	NONE	281.0
M-108	M RINSE WATER, M-344	NONE	231.6
M-108	M RINSE WATER, M-348	NONE	427.5
M-108	M RINSE WATER, M-349	NONE	498.5
M-108	M RINSE WATER, M-352	NONE	480.5
M-108	M RINSE WATER, M-353	NONE	498.5
M-108	M RINSE WATER, M-356	D002	355.2
M-108	M RINSE WATER, M-357	D006 D007	115.0
M-108	M RINSE WATER, M-367	D002	262.0
M-108	M RINSE WATER, M-371	NONE	176.0
[illegible]8	M RINSE WATER, M-383	NONE	400.5
[illegible]108	M RINSE WATER, M-384	D002 D006 D007	272.0
[illegible]108	M RINSE WATER, M-410	NONE	133.1
M-108	M RINSE WATER, M-416	NONE	283.1
M-108	M RINSE WATER, M-419	NONE	279.2
M-108	M RINSE WATER, M-421	D007 F003	75.3
M-108	M RINSE WATER, M-422	NONE	277.7
M-108	M RINSE WATER, M-423	NONE	279.9
M-108	M RINSE WATER, M-424	NONE	280.9
M-108	M RINSE WATER, M-425	NONE	278.8
M-108	M RINSE WATER, M-426	NONE	282.0
M-108	M RINSE WATER, M-427	NONE	281.2
M-108	M RINSE WATER, M-428	NONE	255.7
M-108	M RINSE WATER, M-429	NONE	498.1
M-108	M RINSE WATER, M-438	NONE	341.6
M-108	M RINSE WATER, M-451	D002	269.5
M-108	M RINSE WATER, M-454	D002	234.4
M-108	M RINSE WATER, M-461	NONE	368.4
M-108	M RINSE WATER, M-462	NONE	465.8
M-108	M RINSE WATER- ACID, M-333	D002	482.7
M-108	M RINSE WATER- ACID, M-336	D002	264.4
M-108	M RINSE WATER- ACID, M-337	D002	262.4
M-108	M RINSE WATER- ACID, M-341	D002	280.4
M-108	M RINSE WATER- ACID, M-342	D002	169.6
M-108	M RINSE WATER- ACID, M-343	D002	258.4
[illegible]8	M RINSE WATER- ACID, M-439	D002	202.3

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M-108	M RINSE WATER- ACID, M-447	D002	260.0
M-108	M RINSE WATER- BASE, M-329	D002	257.6
M-108	M RINSE WATER- CYANIDES, M-373	D006 D007 F007 F009	494.0
[illegible]18	NICKEL ACETATE WASTE, M-435	NONE	470.0
[illegible]9	NICKEL ACETATE WASTE, M-436	NONE	271.9
[illegible]8	NICKEL ACETATE, M-351	D006 D007	110.0
M-108	NICKEL SULFATE CLEANUP MATERIAL	NONE	96.7
M-108	NICKEL SULFATE, M-441	NONE	306.0
M-108	NITRIC ACID RINSE WATER, M-412	D001 D002 D007	371.7
M-108	NITRIC ACID WASTE, M-456	D001 D002	298.3
M-108	OAKITE 30 WASTE, M-358	D002	200.0
M-108	PERCHLOROETHYLENE, M-275	D039	174.5
M-108	PHOSPHORIC ACID WASTE, M-443	D002 D006 D007 F003	226.7
M-108	PHOSPHORIC ACID WASTE- M-332	D002 D006 D007	342.8
M-108	SCUBBER FLOOR WASTE, M-360	NONE	186.0
M-108	SODIUM HYDROXIDE WASTE, M-328	D002	554.6
M-108	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE, M-339	D002	130.9
M-108	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE, M-359	D002	254.0
M-108	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE, M-378	D002	461.2
M-108	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE, M-390	D002	453.0
M-108	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE, M-394	D002	506.7
M-108	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE, M-407	D002	488.2
M-108	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE, M-408	D002	425.9
[illegible]	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE, M-413	D002	491.7
M-108	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE, M-417	D002	492.5
M-108	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE, M-430	D002	500.2
M-108	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE, M-445	D002	509.2
M-108	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE, M-453	D002	510.4
M-108	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE, M-455	D002	511.6
M-108	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE, M-458	D002	283.7
M-108	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE, M-460	D002	284.7
M-108	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE, M-463	D002	504.2
M-108	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE WASTE, M-466	D002	430.5
M-108	SODIUM HYDROXIDE, POTASSIUM PERMANGANATE, M-437	D002	449.8
M-108	SULFURIC ACID RINSE WASTE, M-374	D002	400.0
M-[illegible]	SULFURIC ACID RINSE WASTE, M-375	D002	400.0
[illegible]	SULFURIC ACID WASTE, M-362	D002 D007	290.0

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M-108	SULFURIC ACID WASTE, M-363	D002 D007	531.0
M-108	TASBLACK BL-11	D001	287.8
M-108	WATTS NICKEL, M-440	D002 D008	299.8
[illegible]8	ZINCATE WASTE, M-377	D002	98.0
M-223	GLYCERIN	NONE	1.5
M-225	CITRIC ACID SOLUTION	D002	6.9
M-225	GC CEMENT SOLVENT	D001 D035 F005	0.8
M-225	PDS PIGMENT	NONE	8.4
M-225	PHOSPHORIC ACID	D002	0.1
M-226	MERCURY SWITCHES	D009	4.0
M BLDG	3M LAPPING VEHICLE	D001	32.2
M BLDG	ACETONE	D001 F003 U002	19.5
M BLDG	ACETONE, ISOPROPANOL WASTE	D001 F003	240.0
M BLDG	ACETONE, ISOPROPANOL WASTE	D001 F003	219.0
M BLDG	ACETONE, ISOPROPANOL WASTE	D001 F003	158.3
M BLDG	ACETONE, ISOPROPANOL WASTE, M-221	D001 F003	444.4
M BLDG	ACETONE, ISOPROPANOL WASTE, M-235	D001 F003	240.0
[illegible]DG	ACETONE, ISOPROPANOL WASTE, M-256	D001 F003	216.7
[illegible]DG	ALCOHOL WASTE, M-89	D001	154.2
M BLDG	ALODINE 1200S	D007 F007 F009	30.0
M BLDG	ALODINE 1200S	D007 F007 F009	23.8
M BLDG	ALODINE DYE WASTE	D006 D007	1.2
[illegible]DG	ALODINE WASTE SOLUTION	D007 F007 F009	467.3
[illegible]LDG	ALODINE WASTE SOLUTION	D007 F007 F009	397.8
M BLDG	ALODINE WASTE, M-307	D007 F007	146.0
M BLDG	ALUMINUM BLUE POWDER	NONE	7.2
M BLDG	ALUMINUM FAST RED POWDER	NONE	3.4
M BLDG	ALUMINUM TURQUOISE POWDER	NONE	5.8
M BLDG	ALUMINUM VIOLET POWDER	NONE	5.0
M BLDG	ALUMINUM VIOLET POWDER	NONE	5.2
M BLDG	AMMONIUM BIFLUORIDE ACID WASTE	D002	209.0
M BLDG	AMMONIUM HYDROXIDE	D002	1.7
M BLDG	AMMONIUM PERSULFATE	D001	10.1
M BLDG	ANODIZE CHROME DEBRIS	D007	89.7
M BLDG	ANODIZE PIT WASTE	NONE	5.3
M BLDG	ANODOL MS-1 NICKEL ACETATE	NONE	43.4
M BLDG	AROJET ATC ACCELERATOR	NONE	3.1
M BLDG	ASBESTOS WASTE	NONE	85.0
M BLDG	ASBESTOS WASTE	NONE	210.0
M BLDG	BARRET ADDITIVE A	NONE	27.3
M BLDG	BARRETT SNAC	NONE	43.7
M BLDG	BIOACT EC-7	D001	8.4
M BLDG	BIOACT EC-7 WASTE	D001	230.1
[illegible]DG	BIOACT EC-7, ACETONE WASTE, M-534	D001 F003	510.1

PLATING SHOP	DILUTE HCL	D002	36.2
PLATING SHOP	DILUTE NITRIC ACID	D002	31.6
PLATING SHOP	DOW THERM SR-1	NONE	4.0
[illegible]ING SHOP	DURO SUPER GLUE REMOVER	D001	3.0
[illegible]NG SHOP	DYCHEM LAYOUT FLUID	D001 F003	2.2
PLATING SHOP	DYE TANKS	D006 D007	33.8
PLATING SHOP	E BRITE 20/20	NONE	86.0
PLATING SHOP	E BRITE 20/20	NONE	143.4
PLATING SHOP	E-BRIGHT 30/31	NONE	10.9
PLATING SHOP	E-BRIGHT 30/32	NONE	9.5
PLATING SHOP	ELECTROLESS NICKEL WASTE	NONE	1.7
PLATING SHOP	ELECTROLYTE	NONE	0.2
PLATING SHOP	ELECTROLYTE	NONE	0.3
PLATING SHOP	ELECTROLYTE	NONE	0.3
PLATING SHOP	ELECTROLYTE LNC-3	NONE	2.0
PLATING SHOP	ELECTROLYTE MSC-4	D002	1.5
PLATING SHOP	ELECTROLYTE STAINLESS STEEL	NONE	0.6
PLATING SHOP	ELECTROPHORIC SOLUTION	D001	4.9
PLATING SHOP	EMERSON ECCOCOAT CC-2	D001 D011 F005	0.5
PLATING SHOP	ENGRAVERS ENAMEL PAINT	D001	2.0
PLATING SHOP	ETHYLENE GLYCOL RAGS	NONE	4.5
PLATING SHOP	FERRIC CHLORIDE	NONE	1.8
PLATING SHOP	FERRIC CHLORIDE	NONE	1.0
PLATING SHOP	FLEXCO EPOXY RESIN	NONE	3.0
PLATING SHOP	FLEXIBLE FOAM ADHESIVE	D040 F002	2.2
PLATING SHOP	FLOOR WASTE- ACID	D002	8.1
PLATING SHOP	GRAPHITE	NONE	25.6
PLATING SHOP	GRIND SAFE CUTTING FLUID	NONE	1.0
[illegible]NG SHOP	HYDROCHLORIC ACID	D002	0.2
[illegible]NG SHOP	HYDROFLUORIC ACID	D002 U134	2.0
PLATING SHOP	HYDROFLUORIC ACID	D002 U134	1.9
PLATING SHOP	LAMP BLACK	NONE	1.0
PLATING SHOP	LEAD	D008	25.0
PLATING SHOP	LOCTITE WATER PROOFING SOLUTION	D001 D035 F005	7.0
PLATING SHOP	M&T BLACK LABEL	NONE	25.0
PLATING SHOP	M&T GREEN LABEL	NONE	32.0
PLATING SHOP	M&T MAKEUP BRIGHTNER	NONE	7.8
PLATING SHOP	M&T NICKEL ADDITIVE	NONE	32.5
PLATING SHOP	M&T NICKEL ADDITIVE	NONE	16.0
PLATING SHOP	MARKER BOARD CLEANER 202	D001	2.2
PLATING SHOP	MERCURIC CHLORIDE	D009	0.1
PLATING SHOP	MERCURY SALTS	D009	1.0
PLATING SHOP	MERCURY WASTE	D009	2.1
PLATING SHOP	MERCURY WASTE	D009	1.8
PLATING SHOP	METHYL ETHYL KETONE PEROXIDE	D001 D003	0.1
PLATING SHOP	MICROCLEANER	NONE	2.6
PLATING SHOP	MORPLAS ERO BLUE	NONE	12.2
PLATING SHOP	NEUTROLAIR	F002	0.6
PLATING SHOP	NIBCO CPVC PIPE CEMENT	D001 D035 F003 F005	0.6
PLATING SHOP	NICKEL ACETATE	NONE	102.6
PLATING SHOP	NICKEL ACETATE SOLID	NONE	106.0
PLATING SHOP	NICKEL ADDITIVE B	NONE	42.9
PL[illegible]G SHOP	NICKEL CHLORIDE	NONE	42.0
[illegible] SHOP	NICKEL CHLORIDE	NONE	10.0
[illegible]ING SHOP	NICKEL CHLORIDE	NONE	10.0

PLATING SHOP	NICKEL CHLORIDE	NONE	10.0
PLATING SHOP	NICKEL CHLORIDE	NONE	10.0
PLATING SHOP	NICKEL CHLORIDE	NONE	20.0
PLATING SHOP	NICKEL CHLORIDE	NONE	15.0
PLATING SHOP	NICKEL CHLORIDE	NONE	23.0
PLATING SHOP	NICKEL CHLORIDE	NONE	15.0
PLATING SHOP	NICKEL CHLORIDE	NONE	20.0
PLATING SHOP	NICKEL CHLORIDE	NONE	20.0
PLATING SHOP	NICKEL CHLORIDE	NONE	15.0
PLATING SHOP	NICKEL CHLORIDE	NONE	25.0
PLATING SHOP	NICKEL CHLORIDE	NONE	15.0
PLATING SHOP	NICKEL FILTERS	NONE	60.0
PLATING SHOP	NICKEL FLOOR WASTE	NONE	10.8
PLATING SHOP	NICKEL SULFAMATE	NONE	7.2
PLATING SHOP	NICKEL SULFAMATE	NONE	0.7
PLATING SHOP	NICKEL SULFAMATE	NONE	24.1
PLATING SHOP	NICKEL SULFATE	NONE	6.4
PLATING SHOP	NICKEL WASTE	NONE	9.7
PLATING SHOP	NICKEL, CADMIUN PLATES	D006	30.0
PLATING SHOP	NITRIC ACID FLOOR WASTE	NONE	5.4
PLATING SHOP	NITRIC ACID, >40%	D001 D002	63.7
PLATING SHOP	NITRIC ACID, PHOSPHORIC ACID, WATER, ALUMINUM	D001 D002	17.6
PLATING SHOP	OAKITE 30 CLEANUP RAGS	NONE	4.0
PLATING SHOP	OAKITE DYNANET	NONE	0.8
PLATING SHOP	OTASSIUM PERMANGANATE	D001	1.2
PLATING SHOP	OX 311	D002	6.6
PLATING SHOP	OXIDE WASTE	D001	1.3
PLATING SHOP	PANNIER BLACK INK 1001	D001	2.8
PLATING SHOP	PANNIER INK SOLVENT	D001	1.7
PLATING SHOP	PHOSPHORIC ACID	D002	4.5
PLATING SHOP	PHOSPHORIC ACID	D002	20.0
PLATING SHOP	PHOSPHORIC ACID	D002	9.5
PLATING SHOP	PHOSPHORIC ACID WASTE	D002	0.9
PLATING SHOP	PHOSPHORIC WASTE	D002	1.9
PLATING SHOP	PLIOBOND ADHESIVE	D001 D035	0.5
PLATING SHOP	PLIOBOND ADHESIVE	D001 D035 F005	2.2
PLATING SHOP	POTASSIUM PERSULFATE	D001	0.2
PLATING SHOP	RAGS WITH HCL	NONE	10.9
PLATING SHOP	RECORDER INK	D001	0.1
PLATING SHOP	ROBOND CU BLACK	D002	43.1
PLATING SHOP	ROCHELLE SALT	NONE	4.6
PLATING SHOP	RTV 102	NONE	1.2
PLATING SHOP	RTV 630 PART A	NONE	3.0
PLATING SHOP	RTV 630 PART B	NONE	0.2
PLATING SHOP	SANDOZ DYE WITH CHROMIUM	D007	8.5
PLATING SHOP	SANDOZ DYES, VARIOUS	NONE	12.0
PLATING SHOP	SEL REX AUROBOND TN	NONE	84.6
PLATING SHOP	SEL REX AUTRONEX 55 GV	D003	56.8
PLATING SHOP	SILICON CARBIDE	NONE	30.8
PLATING SHOP	SILVER CYANIDE SOLID	D011	1.6
PLATING SHOP	SILVER NITRATE	D001 D011	4.0
PLATING SHOP	SILVER PERMANGANATE	D001 D011	0.2
PLATING SHOP	SILVER SOLDER FLUX	D011	0.8
PLATING SHOP	SODIUM BICARBONATE	NONE	1.0

PLATING SHOP	ACETIC ACID	D002	0.2
PLATING SHOP	ACETIC ACID	D001 D002	3.7
PLATING SHOP	ACETONE, ETHANOL WASTE	D001 F003	18.0
PLATING SHOP	ACTANE 70	NONE	1.0
PLATING SHOP	ALCODINE 1200S	D001 D005	9.1
PLATING SHOP	ALCODINE 1200S	D001 D007	1.0
PLATING SHOP	ALUMINUM CLEANER	NONE	1.0
PLATING SHOP	AMMONIOUM FLUORIDE	NONE	0.1
PLATING SHOP	AMMONIUM ACETATE SOLUTION	NONE	0.1
PLATING SHOP	AMMONIUM HYDROXIDE	D002	12.0
PLATING SHOP	AMMONIUM HYDROXIDE	D002	1.5
PLATING SHOP	AMMONIUM THIOCYANATE	D003	0.2
PLATING SHOP	AMMONIUM THIOCYANATE	NONE	1.0
PLATING SHOP	ANTISTATIC PLASTIC POLISH	NONE	2.2
PLATING SHOP	AREMCO BASE	NONE	0.5
PLATING SHOP	ARSENIC TRIOXIDE	D004	0.5
PLATING SHOP	BARRET SNAP	NONE	10.9
PLATING SHOP	BERRYLIUM, COPPER ALLOY	P015	13.7
PLATING SHOP	BIOACT EC-7	D001	2.2
PLATING SHOP	BIOACT EC-7	D001	8.0
PLATING SHOP	BIOACT EC7	D001	2.2
PLATING SHOP	BIOACT EC7	D001	23.6
PLATING SHOP	BIOACT EC7	D001	23.0
PLATING SHOP	BORIC ACID	NONE	1.6
PLATING SHOP	BORON CARBIDE	NONE	3.8
PLATING SHOP	CADMIUM METAL	D006	0.1
PLATING SHOP	CADMIUM WASTE	D006	0.5
PLATING SHOP	CADMIUM WIRE	D006	8.2
PLATING SHOP	CERIUM OXIDE	NONE	0.5
PLATING SHOP	CHROMIC ACID	D001 D007	34.4
PLATING SHOP	CHROMIC ACID SOLUTION	D002 D007	0.9
PLATING SHOP	CHROMIC ACID, PHOSPHORIC ACID, AND ALUMINUM WASTE	D002	9.6
PLATING SHOP	CHROMIUM METAL	D007	0.1
PLATING SHOP	CHROMIUM TRAYS	D007	58.1
PLATING SHOP	CHROMIUM WASTE	D007	4.1
PLATING SHOP	CLEAR ARCRYLIC 670C16	D001	46.0
PLATING SHOP	COOL SPAR CUTTING FLUID	NONE	1.8
PLATING SHOP	COPPER CYANIDE	D003	8.7
PLATING SHOP	COPPER CYANIDE	D003	7.9
PLATING SHOP	COPPER CYANIDE CLEANUP RAGS	D003	2.0
PLATING SHOP	COPPER CYANIDE WASTE RAGS	D003	0.9
PLATING SHOP	COPPER CYANIDE WASTE RAGS, FILTERS	D003 F007	5.6
PLATING SHOP	CRAFTICS SUPER GLUE REMOVER	D001	2.2
PLATING SHOP	CRYSTAL CAST	D001	13.0
PLATING SHOP	CYANIDE PLATING WASTE	D003 F007	2.4
PLATING SHOP	CYANIDE WASTE	D003	2.5
PLATING SHOP	DIETHYL (2) AMINOETHANOL	D001	2.2

PLATING SHOP	SODIUM DICHROMATE	D001 D007	1.0
PLATING SHOP	SODIUM DICHROMATE	D001 D007	9.2
PLATING SHOP	SODIUM DICHROMATE	D007	2.4
PLATING SHOP	SODIUM DICHROMATE	D007	0.7
PLATING SHOP	SODIUM FERROCYANIDE	NONE	0.1
PLATING SHOP	SODIUM HYDROXIDE PELLETS	NONE	32.8
PLATING SHOP	SODIUM HYDROXIDE SOLID	NONE	31.4
PLATING SHOP	SODIUM HYDROXIDE SOLUTION	D002	47.9
PLATING SHOP	SODIUM HYDROXIDE WASTE	D002	6.8
PLATING SHOP	SODIUM HYPOCHLORITE, <10%	D001	4.8
PLATING SHOP	SODIUM HYPOCHLORITE, >10%	D001	9.6
PLATING SHOP	SODIUM SULFITE	NONE	1.3
PLATING SHOP	SPARTAN CLEANER	D002	183.0
PLATING SHOP	STAY CLEAN FLUX	NONE	0.8
PLATING SHOP	STOP-OFF LACQUER	D001 D035 F005	14.0
PLATING SHOP	STOP-OFF LACQUER	D001 D035 F005	14.9
PLATING SHOP	SULFAMATE SNAP-AM	D002	42.0
PLATING SHOP	SULFURIC ACID	D002	29.0
PLATING SHOP	SULFURIC ACID MIX	D002	6.7
PLATING SHOP	TAP MAGIC	D001	1.8
PLATING SHOP	TERGITOL 7	D002	2.0
PLATING SHOP	THERMAL COMPOUND	NONE	0.5
PLATING SHOP	TOUCH UP PAINT	D001 D008	0.7
PLATING SHOP	TRICHLOROETHYLENE	D040 F002 U228	10.5
PLATING SHOP	TURCO AQUASORB	D001	5.0
PLATING SHOP	UNICHROME CR-110	D001 D007	101.0
PLATING SHOP	WELD-ON 3 PIPE SOLVENT	D001 D035 F003 F005	0.8
PLATING SHOP	WELDWOOD CONTACT CEMENT	D001 F002 F005	1.6
PLATING SHOP	ZINC OXIDE	NONE	3.0

Building Manager's Questionnaire

Building Name: M Building Manager: W.H. Whitelow Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

28. Does the building have abandoned process equipment such as tanks, piping, containers, etc.? (Yes) No

29. Is waste material stored in or around the building for more than 90 days?
Yes (No)

30. Has the building been identified as a 90-day waste accumulation area?
Yes (No)

31. Has any area in the building been identified as a satellite accumulation area?
(Yes) ~~No~~ printed circuit boards — potentially lead contaminate.

32. Is mixed waste generated, stored, or disposed of from the bu #31. NOT ANYMORE
Where are logs found? NO

#32 NO.

Process	Waste	Stored	Dispose	
		Y / N	Y / N	TK.
		Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N

Source: _____

9.18-77

Building Manager's Questionnaire

Building Name: M Building Manager: W.H. Whitelow Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

33. Is TRU radioactive waste generated, stored, or disposed of from the building?
Yes No
Where are logs found?

Process	Waste	Stored	Disposed	Logs
		Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N

Source: _____

9.18-78

Building Manager's Questionnaire

Building Name: M Building Manager: W.H. Whitelow Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

34. Is low-level radioactive waste generated, stored, or disposed of from the building? Yes No.
Where are logs found? #34 NO.

Process	Waste	Stored	[	
		Y / N		TK.
		Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N

Source: _____

35. Identify all administrative orders, temporary or permanent injunctions, civil administrative penalties, or criminal activities issued against the building.

NONE

9.18-79

Building Name: M Building Manager: W.H. Whitelow Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

36. Is there a waste minimization program in the building? Yes (No)
Discuss your ideas about how to minimize waste.

#36 NO.

TK.

37. Has a pollution prevention program been developed for the bu

UNKNOWN

Integrated Environmental Management Program (IEMP) Appraisal

Finding Number: M - 10

I hereby certify that the corrective action(s) for the above finding has been completed and request that the finding be closed.

Gary J. Wiedenbach	BLDG MGR	10-14-96
Assignee - WIEDENBACH, GARY	Title	Date

Closure documentation custodian: WIEDENBACH, GARY

I have reviewed the corrective actions and concur that they have been completed.

Curtis M. Watson	10/14/96
Core Team Leader	Date

Reviewers Comments:

☐ PBA closure verification requested

From: Gary Weidenbach
To: BARNBV
Date: 10/7/96 3:45pm
Subject: IEMP Finding M-10, Bag House/Dust Collectors.

Finding M-10, Bag Houses should be checked.....

Corrective Action Narrative:

These Bag Houses where also identified as a RCRA Audit Finding in May, 96. RCRA Finding No. 96-007 and 96-010, identified there as Dust Collectors.

Samples from the collection drums where taken by Waste Management and determined to be non-RCRA material.

The collection drums have been removed and the Dust Collectors tagged with an Administrative Tag: Do Not UseThis Equipment at both the drum location and the electrical service breaker.

I contend that this finding be closed effective 10-07-96.

CC: CLARWB

EG&G Mound Applied Technologies

INTEROFFICE CORRESPONDENCE

Date: 8/12/96

Subject: Integrated Environmental Management Program (IEMP)
Corrective Action Plan

TO: WIEDENBACH, GARY

YOUR IMMEDIATE ATTENTION REQUIRED

You have been identified as the owner of IEMP finding number M -10 . As the owner of this finding, you are responsible for developing a corrective action plan and target completion date. For your convenience, a form has been attached with the IEMP finding description and an area for recording your corrective action description and target completion date. EG&G MAT Senior Management is committed to have findings completed as soon as possible with a target completion of all IEMP findings by March, 1997. If funding or resource allocation will extend your target completion date beyond March, 1997, please identify the problem area on the back of the attached form.

EG&G MAT Senior Management has required that you complete the attached form and return to Brady Barnhart, DS-248, by COB 08/30/96. If you have specific questions regarding this finding, please contact me at extension 4047 or AOS: BARNBV.

The Integrated Environmental Management Program (IEMP) is the result of an independent environmental appraisal/audit conducted several months ago. These findings deal primarily with environmental issues and will be reviewed by regulators. Therefore, these findings are being placed into a formal tracking and reporting system, CARS. In order to bring the program back on schedule, it is imperative that your corrective action be returned by the above date. I apologize for the short notice and inconvenience and thank you for your support.

Sincerely,

Brady V. Barnhart
T&FM IEMP Project Manager

Scott Group
10/07/96
For Closure

EG&G Mound Applied Technologies

INTEROFFICE CORRESPONDENCE

IEMP T&FM FINDING/CORRECTIVE ACTION REPORT

Responsible Individual:	Building:	Finding No.:	T&FM Proj. Code:	Project Manager:
WIEDENBACH, GARY	M	10	WST-5-A	Barnhart, Brady

IEMP Finding:

Bag-houses should be checked for wastes and managed accordingly.

Corrective Action Narrative

The Bag Houses (Dust Collectors) where identified as a RCRA Audit Finding in May 96.

Finding numbers RCRA 96-007 and 96-010.

Samples from the collection drums where taken and determined to be NON-RCRA material, see attached sheets from Waste Management.

Requests are in place to empty the drums.

Units have been tagged with an Administrative Tag: Do Not Use this Equipment.

TARGET COMPLETION DATE 9-5-96

Return completed form by COB 08/30/96
TO:

Brady V. Barnhart
DS-248

Gary J. Wiedenbach 9-5-96

Signature - WIEDENBACH, GARY Date

M o u n d Electronic Message/AOS

From :Mike Isper
ISPEMP
Dept. :Administration
Tel. No :
Date :24-Jun-1996 11:58am EST
Subject :Samples

TO :Gary Weidenbach (WEIDGL)

CC :David Adkins (ADKIDS)

Gary,

I recieved the analytical results from those dust collector units that Steve King and I sampled. They were referenced in your audit response as RCRA 96-007 and 96-010. Based upon the analytical and generator knowledge of the process, the dust in the collection drums are non hazardous and non regulated. The contents of the drums can be emptied/disposed of through Mound's regular trash. I would suggest, though, to make life less dirtier, empty the drums into poly bags prior to dumping in the trash.

If you need anything else, give me a yell.

Mike
[illegible]26

From: Gary Weidenbach
To: BARNBV
Subject: IEMP Finding M-10, Bag House/Dust Collectors.

Finding M-10, Bag Houses should be checked.....

Corrective Action Narrative:

These Bag Houses where also identified as a RCRA Audit Finding in May, 96.
RCRA Finding No. 96-007 and 96-010, identified there as Dust Collectors.

Samples from the collection drums where taken by Waste Management and determined to be non-RCRA material.

The collection drums have been removed and the Dust Collectors tagged with an Administrative Tag: Do Not UseThis Equipment at both the drum location and the electrical service breaker.

I contend that this finding be closed effective 10-07-96.

CC: CLARWB

Appendix G

Radiological Summary/Information

RADIOLOGICAL SURVEY PLAN

FOR THE

DEMOLITION OF M BUILDING

July 6, 1999

1.0 Introduction

This document defines the radiological sampling requirements for M Building. The final disposition of the building is demolition. Therefore, these radiological sampling requirements are those determined to be necessary prior to demolition activities. The debris from demolition activities is planned to be dispositioned by: 1) Recycling the metal, 2) Staging the concrete and masonry at the Spoils Area for future crushing and use as on-site backfill, 3) Placing unusable insulation, building debris in rolloffs and sent offsite.

This plan will describe the methodology for obtaining radiological data and the criteria from which to evaluate the radiological data. All structural components will be radiologically evaluated and surveyed as appropriate. Survey methods will include direct and removable contamination surveys, large area wipes, dose rate measurements, core asbestos samples and core roof samples. The results of the data obtained will be used to see if the debris can be dispositioned as planned.

2.0 Scope

The physical boundary of the building consists of the building and a fifteen-foot perimeter surrounding the exterior of the building. The scope of this plan includes the building and 15 foot perimeter, which primarily consists of concrete. It does not include the entire building foundation, sumps and piping connected with the sumps, nor the soils. These items will be addressed in another plan, once demolition of the building has been completed.

The building has a known history of machining of uranium in the high bay area. Extensive amounts of fixed contamination were detected on the flooring of the high bay area using portable radiological monitoring instrumentation. Isotopic analysis results showed that depleted uranium was present throughout the high bay area floor. The entire wood flooring in the high bay area was removed and disposed as low-level radioactive waste. Isolated spots of fixed contamination were detected on the flooring underneath the wood bricks. The fixed contamination from these isolated areas was removed by scabbling and disposed as low-level radioactive waste. As a result of the building process history of radioactivity and the confirmation of depleted uranium in the high bay area, a verification survey was performed in the high suspect areas, along with a confirmatory survey in the low suspect areas. The building was posted as a Radioactive Material Management Area (RMMA).

3.0 Building Description

M Building was constructed in 1948 and is a two-story structure of concrete block with brick facing. The roof is metal and build-up membrane of coal tar and asphalt. M Building is one of the original buildings located on the main hill of the Mound site. Adjacent buildings are P Building to the east, DS Building to the south, E Building to the west. The former C Building was to the north of M Building.
The total area of M Building is 56,000 square feet, including two mezzanine office areas of 5,800 square feet.

4.0 Radiological Survey Requirements

The "Generic Process for the Disposition of Buildings that have Potential or Actual Radiological Contamination" was used as guidance to perform the confirmatory and verification surveys. Regulatory Guide 1.86 and DOE Order 5400.5 "Radiation Protection of the Public and the Environment were used to ensure that radiation and contamination levels met the acceptable criteria. Additionally, radiological surveys were also performed in accordance with Mound site procedures, MD-80043 "Radiological Work Requirements" and MD-80036 "Radiological Operations Procedures." One of the primary requirements from the site manuals was to perform RMMA deposting surveys prior to the demolition process. Pre-disposition (demolition) surveys were performed as well as roll-off surveys. Property waste release evaluations (P/WREs) were utilized for equipment that was removed from the building at the time it was posted as an RMMA.

The purpose of the confirmatory surveys was to verify that the building, or portions thereof, are radiologically clean based on the evaluation of existing information. The surveys were non-destructive surveys and served as a final check that the building does not have unexpected radiological contamination. The portions of the building, in which verification surveys were performed, served to determine if radioactive constituents above background and above existing radiological criteria (Regulatory Guide 1.86, DOE Order 5400.5) existed.

Provided no anomalies (e.g. elevated readings) are detected, confirmatory survey should be adequate to verify that the building is radiologically clean. If anomalies are detected, then verification surveys are required.

5.0 Sampling

The main objectives of this radiological survey plan are to:

1. Verify that any surface contamination values are below the guidelines of Figure IV-1 of DOE 5400.5 and Regulatory Guide 1.86.

2. Verify that no radiation dose measurements exceed the dose limits specified in DOE 5400.5. (Gamma radiation must not exceed background radiation by more than 20 uR/hour (0.02 mrem/hr).

3. Ensure that the site procedural survey requirements associated with RMMA deposting, pre-disposition (demolition) and rolloffs are met.

5.1 Interior Radiological Surveys

Confirmatory surveys were performed throughout the building interior. The confirmatory surveys included the floor, air vents and floor drains. Direct measurements were performed on 100 % of the floor area, using portable NE Electra instrumentation for alpha and beta radioactivity. Representative swipes were taken and analyzed for gross alpha, beta and tritium radioactivity. Biased sampling was performed at all vent ducts and floor drain locations within the building. The biased sampling included both direct and swipe measurements.

If contamination was detected during the performance of the confirmatory surveys, then the radiological survey requirements were expanded to include components of the verification surveys. The additional surveys supported the verification survey process and included wall and overhead surveys. The verification survey components involved surveys of the overhead and walls (from the floor vertically upward 6 feet). The surveys performed by room are summarized in Attachment 1 of this section. Radiation dose rate measurements were performed in each room of M Building. Rooms identified with having alpha and or beta-gamma fixed contamination in which wall and overhead surveys were completed included: 7, 7A, 7B, 7C, 20, 31, ST 4, 8, 225. The fixed contamination was removed from each of these areas by scabbling, removal of floor tile, stair steps, etc. until no detectable contamination was obtained using NE Electra portable radiological instrumentation.

Radiological surveys were completed to support RMMA deposting survey efforts. RMMA deposting surveys were performed prior to asbestos removal. These surveys consisted of a representative direct survey of horizontal surfaces, representative removable contamination survey of horizontal surfaces and large area wipes. The surveys were analyzed for alpha, beta and tritium contamination, with the exception of the large area wipes, which were analyzed for alpha and beta contamination only. A summarization of the surveys performed as part of the RMMA deposting efforts appears on Attachment 2 of this section. Note that "Warning signs" were not posted

since pre-demolition activities have already started, and the actual demolition is scheduled this summer.

Eighteen core asbestos samples were obtained and isotopically analyzed prior to asbestos removal activities. The core asbestos samples provided radiological information necessary as part of the pre-disposition (demolition) process of performing surveys in previously inaccessible areas.

5.2 Exterior Radiological Surveys

Exterior building surveys were performed on the building foundation and 15 foot perimeter concrete area surrounding the building. These surveys included a 100% direct alpha and beta frisk of the foundation and surrounding concrete. Representative swipes were also taken in these areas and analyzed for alpha, beta and tritium radioactivity. There is approximately 12 more feet of the foundation, which remains to be surveyed in the southeast area exterior to the building. Efforts are being made to move equipment in order to complete the foundation survey as well as the concrete area where the paint collectors, EPDM roof membrane, asphalt felt and cabinets are located. Manhole covers, which were within the 15-foot perimeter area, were surveyed for both removable and direct alpha and beta contamination. Radiation dose measurements were taken in the fifteen-foot perimeter area surrounding the building.

Representative direct and removable surveys were performed on the roof of M Building for alpha and beta radioactivity. Biased sampling was performed on all exhaust vents, scrubbers, and ventilation units. Twelve core roof samples were obtained to provide a representative indication of radioactivity, if present.

6.0 Discussion of Results

The known results of the radiological survey efforts support the planned disposition of the debris from M Building. The objectives identified in Section 5 of this report are met, as summarized here.

Objective 1: Verify that any surface contamination values are below the guidelines of Figure IV-1 of DOE 5400.5 and Regulatory Guide 1.86.

All fixed contamination detected during the extensive survey efforts was removed from the building and disposed as low-level radioactive waste. Therefore, the surface contamination values on the remaining building structures are below the guidelines of Figure IV-1 of DOE 5400.5 and Regulatory Guide 1.86.

The exceptions to the direct and removable contamination surveys not meeting DOE 5400.5 and Mound's Radiological Control Program criteria are on six manhole covers and one drain shroud and extensive rusted surfaces on the roof. The highest fixed alpha contamination level on the manhole covers is 180 dpm/100 cm^2.

The drain shroud had 241 dpm/100 cm^2 of fixed alpha contamination. The highest fixed alpha contamination level detected on the roof was approximately 1000 dpm/100 cm^2. Plans are underway to survey the underside of the manholes and the manholes themselves to determine if contamination if present there. Isotopic analysis results are pending for the manhole and roof samples.

Objective 2: Verify that no radiation dose measurements exceed the dose limits specified in DOE 5400.5. (Gamma radiation must not exceed background radiation by more than 20 uR/hour (0.02 mrem/hr).

The interior and exterior radiation dose rates are all well below the 0.02 mrem/hour criteria specified in DOE 5400.5.

Objective 3: Ensure that the site procedural survey requirements associated with RMMA deposting, pre-disposition (demolition) and rolloffs are met.

The site procedural survey requirements associated with RMMA deposting efforts and pre-disposition surveys have been met. The core asbestos sample results were all less than the Lower Detection Level (LDL) of 3.60 pCi/gram. Rolloff surveys are ongoing and being performed in accordance with established site procedures.

Based on the extensive radiological survey efforts and the results obtained, the planned disposition of M Building should be determined acceptable, pending results of the manhole covers and the core roof samples.

7.0 References

1) DOE Order 5400.5 Radiation Protection of the Public and the Environment, 1/7/93.

2) Generic Process for the Disposition of Buildings that have Potential or Actual Radiological Contamination, March 1997.

3) Sampling and Analysis Plan for the Characterization of E Building and Surrounding Soils, September 22, 1998.

GENERIC DISPOSITION PROCESS -- "M" BLDG.

FIRST FLOOR

RM. #	VENTS	DRAINS	DOSE RATES	FLOORS		FCA	WALLS	OVER-HEAD
2	99M153	99M058	99M227	99M058		N/A	→	→
4	99M164	N/A	99M227	99M040		N/A	→	→
5	99M164	N/A	99M227	99M040		N/A	→	→
5A	99M164	N/A	99M227	99M040		N/A	→	→
6	99M171	N/A	99M227	99M041		N/A	→	→
6A	99M171	N/A	99M227	99M041		N/A	→	→
7	99M109	N/A	99M227	99M221		99M221	99M220	99M228
7A	99M109	N/A	99M227	99M221		99M221	99M220	99M221
7B	99M109	N/A	99M227	99M221		99M221	99M220	99M221
7C	99M109	N/A	99M227	99M221		99M221	99M220	99M221
9	N/A	99M058	99M227	99M058		N/A	→	→
10	N/A	N/A	99M227	99M058		N/A	→	→
10A	N/A	N/A	99M227	99M074		N/A	→	→
11	99M251	99M251	99M227	99M058		N/A	→	→
12	99M099	N/A	99M227	99M012		N/A	→	→
12A M	N/A	N/A	99M227	99M059		N/A	→	→
14	99M099	N/A	99M227	99M012		N/A	→	→
15	N/A	N/A	99M227	99M044		N/A	→	→
16	N/A	N/A	99M227	99M044		N/A	→	→
16A	99M101	N/A	99M227	99M044		N/A	→	→
17A	99M101	N/A	99M227	99M044		N/A	→	→
16A M	N/A	N/A	99M227	99M108		N/A	→	→
17A M	N/A	N/A	99M227	99M108		N/A	→	→

FLOOR TILE

GENERIC DISPOSITION PROCESS -- "M" BLDG.

FIRST FLOOR

	RM. #	VENTS	DRAINS	DOSE RATES	FLOORS		FCA	WALLS	OVER-HEAD
	19	N/A	N/A	99 M 227	99 M 046		N/A	→	→
WALL →	20	N/A	N/A	99 M 227	99 M 049		99 M 091	99 M 249	99 M 249
	21	99 M 282	N/A	99 M 227	99 M 065		N/A	→	→
	22	99 M 107	N/A	99 M 227	99 M 053		N/A	→	→
	22A	99 M 107	N/A	99 M 227	99 M 053		N/A	→	→
	25	99 M 107	N/A	99 M 227	99 M 053		N/A	→	→
	26	99 M 107	99 M 053	99 M 227	99 M 053		N/A	→	→
	27	99 M 033	N/A	99 M 227	99 M 033		N/A	→	→
	28	99 M 110	N/A	99 M 227	99 M 071		N/A	→	→
	28A	99 M 110	N/A	99 M 227	99 M 071		N/A	→	→
LOOR →	31	99 M 279	N/A	99 M 227	99 M 035		068-060 99 M 072	99 M 232	99 M 232
	32	99 M 276	N/A	99 M 227	99 M 035		N/A	→	→
	33	99 M 226	N/A	99 M 227	99 M 035		N/A	→	→
	35	99 M 275	N/A	99 M 227	99 M 035		N/A	→	→
	35A	99 M 278	N/A	99 M 227	99 M 035		N/A	→	→
	36	99 M 280	N/A	99 M 227	99 M 035		N/A	→	→
	36A	99 M 281	N/A	99 M 227	99 M 035		N/A	→	→
	37	N/A	N/A	99 M 227	99 M 044		N/A	→	→
	38	99 M 100	N/A	99 M 227	99 M 026		N/A	→	→
	38A	99 M 100	N/A	99 M 227	99 M 015		N/A	→	→
	39	99 M 166	N/A	99 M 227	99 M 064		N/A	→	→
	41	99 M 099	N/A	99 M 227	99 M 039		N/A	→	→
	42	99 M 099	N/A	99 M 227	99 M 019		N/A	→	→

GENERIC DISPOSITION PROCESS -- "M" BLDG.

FIRST FLOOR

RM. #	VENTS	DRAINS	DOSE RATES	FLOORS		FCA	WALLS	OVER-HEAD
42 A	99 M 246	N/A	99 M 227	99 M 155		N/A	→	→
44	N/A	N/A	99 M 227	99 M 242		N/A	→	→
45	99 M 111	N/A	99 M 227	99 M 037		N/A	→	→
45A	99 M 111	N/A	99 M 227	99 M 283		N/A	→	→
46	99 M 111	N/A	99 M 227	99 M 037		N/A	→	→
47	99 M 111	N/A	99 M 227	99 M 050 99 M 069		N/A	→	→
48	99 M 111	N/A	99 M 227	99 M 045		N/A	→	→
48 A	99 M 111	N/A	99 M 227	99 M 045		N/A	→	→
49	99 M 111	N/A	99 M 227	99 M 045		N/A	→	→
50	99 M 111	N/A	99 M 227	99 M 045		N/A	→	→
51	99 M 111	N/A	99 M 227	99 M 045		N/A	→	→
101	99 M 165	N/A	99 M 227	99 M 036		N/A	→	→
103	99 M 165	N/A	99 M 227	99 M 036		N/A	→	→
107	N/A	N/A	99 M 227	99 M 224		N/A	→	→
108	99 M 111	N/A	99 M 227	99 M 047 99 M 067		N/A	→	→
109	99 M 111	N/A	99 M 227	99 M 047 99 M 067		N/A	→	→
110	99 M 111	N/A	99 M 227	99 M 047 99 M 067		N/A	→	→
111	N/A	N/A	99 M 227	99 M 066		N/A	→	→
ST. # 1	N/A	N/A	99 M 227	99 M 070		N/A	→	→
ST # 2	N/A	N/A	99 M 227	99 M 284		N/A	→	→
ST # 3	N/A	N/A	99 M 227	99 M 224		N/A	→	→
STEP → ST # 4	N/A	N/A	99 M 227	99 M 059		99 M 059	99 M 248	99 M 248
ELEV.	N/A	N/A	99 M 227	99 M 062		N/A	→	→

NOTE: 99 M 067 UNDER FLOOR GRATING

RADIOACTIVE MATERIAL MANAGEMENT AREA (RMMA) ROLLBACK FOR "M" BLDG.

FIRST FLOOR

RM. #	REPRESENTATIVE DIRECT SURVEY OF HORIZ. SURFACES	REPRESENTATIVE REMOVABLE SURVEY OF HORIZ. SURFACES	LARGE AREA WIPE SURVEY
2	99 M 153	99 M 153	99 M 153
4	99 M 164	99 M 164	99 M 164
5	99 M 164	99 M 164	99 M 164
5A	99 M 164	99 M 164	99 M 164
6	99 M 171	99 M 171	99 M 171
6A	99 M 171	99 M 171	99 M 171
7	99 M 219	99 M 219	99 M 219
7A	99 M 220	99 M 220	99 M 220
7B	99 M 220	99 M 220	99 M 220
7C	99 M 220	99 M 220	99 M 220
9	99 M 153	99 M 153	99 M 153
10	99 M 153	99 M 153	99 M 153
10A	99 M 259	99 M 259	99 M 259
11	99 M 251	99 M 251	99 M 251
12	99 M 159	99 M 159	99 M 159
12A	99 M 207	99 M 207	99 M 207
14	99 M 159	99 M 159	99 M 159
15	99 M 243	99 M 243	99 M 243
16	99 M 160	99 M 160	99 M 160
16A	99 M 160	99 M 160	99 M 160
17A	99 M 160	99 M 160	99 M 160
16A L	99 M 265	99 M 265	99 M 265

RADIOACTIVE MATERIAL MANAGEMENT AREA (RMMA) ROLLBACK FOR "M" BLDG.

FIRST FLOOR

RM. #	REPRESENTATIVE DIRECT SURVEY OF HORIZ. SURFACES	REPRESENTATIVE REMOVABLE SURVEY OF HORIZ. SURFACES	LARGE AREA WIPE SURVEY
17A M	99 M 265	99 M 265	99 M 265
19	99 M 161	99 M 161	99 M 161
20	99 M 162	99 M 162	99 M 162
21	99 M 282	99 M 282	99 M 282
22	99 M 173	99 M 173	99 M 173
22A	99 M 173	99 M 173	99 M 173
25	99 M 173	99 M 173	99 M 173
26	99 M 173	99 M 173	99 M 173
27	99 M 172	99 M 172	99 M 172
28	99 M 170	99 M 170	99 M 170
28A	99 M 170	99 M 170	99 M 170
31	99 M 232	99 M 232	99 M 232
32	99 M 225	99 M 225	99 M 225
33	99 M 226	99 M 226	99 M 226
35	99 M 226	99 M 226	99 M 226
35A	99 M 226	99 M 226	99 M 226
36	99 M 226	99 M 226	99 M 226
36A	99 M 226	99 M 226	99 M 226
37	99 M 243	99 M 243	99 M 243
38	99 M 163	99 M 163	99 M 163
38A	99 M 163	99 M 163	99 M 163
39	99 M 166	99 M 166	99 M 166

RADIOACTIVE MATERIAL MANAGEMENT AREA (RMMA) ROLLBACK FOR "M" BLDG.

FIRST FLOOR

RM. #	REPRESENTATIVE DIRECT SURVEY OF HORIZ. SURFACES	REPRESENTATIVE REMOVABLE SURVEY OF HORIZ. SURFACES	LARGE AREA WIPE SURVEY
41	99 M 155	99 M 155	99 M 155
42	99 M 155	99 M 155	99 M 155
42 A	99 M 246	99 M 246	99 M 246
44	99 M 242	99 M 242	99 M 242
45	99 M 154	99 M 154	99 M 154
45 A	99 M 154	99 M 154	99 M 154
46	99 M 154	99 M 154	99 M 154
47	99 M 151	99 M 151	99 M 151
48	99 M 152	99 M 152	99 M 152
48 A	99 M 152	99 M 152	99 M 152
49	99 M 152	99 M 152	99 M 152
50	99 M 152	99 M 152	99 M 152
51	99 M 152	99 M 152	99 M 152
101	99 M 165	99 M 165	99 M 165
103	99 M 165	99 M 165	99 M 165
107	99 M 235	99 M 235	99 M 235
108	99 M 150	99 M 150	99 M 150
109	99 M 150	99 M 150	99 M 150
110	99 M 150	99 M 150	99 M 150
111	99 M 252	99 M 252	99 M 252
N/A			
N/A			

GENERIC DISPOSITION PROCESS -- "M" BLDG.

FIRST FLOOR

	RM. #	VENTS	DRAINS	DOSE RATES	FLOORS		FCA	WALLS	OVER-HEAD
FLOOR	LOW BAY 8 11-12	SEE RMMA RB	N/A	99 M 227	99 M 052		99 M 029	99 M 094	99 M 119
	8 10-11		N/A	99 M 227	99 M 052		99 M 029	99 M 094	99 M 122
	8 9-10		N/A	99 M 227	99 M 052		99 M 029	99 M 094	99 M 123
	8 8-9		N/A	99 M 227	99 M 052		99 M 029	99 M 094	99 M 124
	8 7-8		N/A	99 M 227	99 M 052		99 M 029	99 M 094	99 M 125
	LOW BAY 3 5-6		N/A	99 M 227	99 M 052		N/A	→	→
	3 4-5		N/A	99 M 227	99 M 052		N/A	→	→
	3 3-4		N/A	99 M 227	99 M 052		N/A	→	→
	3 2-3		N/A	99 M 227	99 M 052		N/A	→	→
	3 1-2		N/A	99 M 227	99 M 052		N/A	→	→
FLOOR	HIGH BAY 8 5-6		N/A	99 M 227	99 M 029		99 M 029	99 M 094	99 M 118
	8 6-7		N/A	99 M 227	99 M 029		99 M 029	99 M 094	99 M 118
	8 7-8		N/A	99 M -227	99 M 029		99 M 029	99 M 094	99 M 113
	8 8-9		N/A	99 M 227	99 M 029		99 M 029	99 M 094	99 M 114
	8 9-10		N/A	99 M 227	99 M 029		99 M 029	99 M 094	99 M 115
	8 10-11		N/A	99 M 227	99 M 029		99 M 029	99 M 094	99 M 116
	8 11-12		N/A	99 M 227	99 M 029		99 M 029	99 M 094	99 M 117
	8 12-13		N/A	99 M 227	99 M 056		99 M 029	99 M 094	99 M 120

GENERIC DISPOSITION PROCESS-- "M" BLDG.

SECOND FLOOR

RM. #	VENTS	DRAINS	DOSE RATES	FLOORS		FCA	WALLS	OVER-HEAD
201	99 M 098	N/A	99 M 227	99 M 075		N/A	→	→
202	99 M 098	N/A	99 M 227	99 M 075		N/A	→	→
203	99 M 098	N/A	99 M 227	99 M 075		N/A	→	→
204	99 M 098	N/A	99 M 227	99 M 075		N/A	→	→
204 COR	99 M 098	N/A	99 M 227	99 M 075		N/A	→	→
205	99 M 098	N/A	99 M 227	99 M 079		N/A	→	→
206	99 M 098	N/A	99 M 227	99 M 075		N/A	→	→
207	99 M 098	N/A	99 M 227	99 M 075		N/A	→	→
209	99 M 098	N/A	99 M 227	99 M 075		N/A	→	→
210	99 M 098	N/A	99 M 227	99 M 075		N/A	→	→
212	99 M 098	N/A	99 M 227	99 M 079		N/A	→	→
213	99 M 098	N/A	99 M 227	99 M 079		N/A	→	→
214	99 M 098	N/A	99 M 227	99 M 079		N/A	→	→
220	99 M ~~098~~ 097	N/A	99 M 227	99 M 080		N/A	→	→
220A	99 M 097	N/A	99 M 227	99 M 080		N/A	→	→
221	99 M 097	N/A	99 M 227	99 M 080		N/A	→	→
222	99 M 097	N/A	99 M 227	99 M 080		N/A	→	→
223	99 M 097	N/A	99 M 227	99 M 080		N/A	→	→
224	99 M 097	N/A	99 M 227	99 M 080		N/A	→	→
225	99 M 097	N/A	99 M 227	99 M 080		99 M 163	99 M 194	99 M 212 99 M 213
226	99 M 097	N/A	99 M 227	99 M 080		N/A	→	→
227	99 M 097	N/A	99 M 227	99 M 080		N/A	→	→

GENERIC DISPOSITION PROCESS-- "M" BLDG.

SECOND FLOOR

RM. #	VENTS	DRAINS	DOSE RATES	FLOORS		FCA	WALLS	OVER-HEAD
228	99M097	99M080	99M227	99M080		N/A	→	→
230	99M097	N/A	99M227	99M080		N/A	→	→
250	99M086	99M086	99M227	99M086		N/A	→	→
251	99M085	99M085	99M0227	99M085		N/A	→	→
252	99M081	99M081	99M227	99M081		N/A	→	→
253	99M081	99M081	99M227	99M081		N/A	→	→
254	99M084	99M084	99M227	99M084		N/A	→	→
ST.1	N/A	N/A	99M227	99M075		N/A	→	→
ST.2	N/A	N/A	99M227	99M079		N/A	→	→
ST.3	N/A	N/A	99M227	99M012		N/A	→	→
ELEV.	N/A	N/A	99M227	99M062		N/A	→	→
			N					
				A				
A								

RADIOACTIVE MATERIAL MANAGEMENT AREA (RMMA) ROLLBACK FOR "M" BLDG.

FIRST FLOOR

RM. #	REPRESENTATIVE DIRECT SURVEY OF HORIZ. SURFACES	REPRESENTATIVE REMOVABLE SURVEY OF HORIZ. SURFACES	LARGE AREA WIPE SURVEY
LOW BAY 8 11-12	99 M 198	99 M 198	99 M 198
8 10-11	99 M 198	99 M 198	99 M 198
8 9-10	99 M 198	99 M 198	99 M 198
8 8-9	99 M 198	99 M 198	99 M 198
8 7-8	99 M 198	99 M 198	99 M 198
LOW BAY 3 5-6	99 M 222	99 M 222	99 M 222
3 4-5	99 M 209	99 M 209	99 M 209
3 3-4	99 M 240	99 M 240	99 M 240
3 2-3	99 M 239	99 M 239	99 M 239
3 1-2	99 M 223	99 M 223	99 M 223
HIGH BAY 8 5-6	99 M 195	99 M 195	99 M 195
8 6-7	99 M 196	99 M 196	99 M 196
8 7-8	99 M 197	99 M 197	99 M 197
8 8-9	99 M 200	99 M 200	99 M 200
8 9-10	99 M 202	99 M 202	99 M 202
8 10-11	99 M 214	99 M 214	99 M 214
8 11-12	99 M 229	99 M 229	99 M 229
8 12-13	99 M 230	99 M 230	99 M 230
ST. 4	99 M 207/248	99 M 207/248	99 M 207/248
CRANE	99 M 208	99 M 208	99 M 208
HIGH BAY DOORS	99 M 244	99 M 244	99 M 244

RADIOACTIVE MATERIAL MANAGEMENT AREA (RMMA) ROLLBACK FOR "M" BLDG.

SECOND FLOOR

RM. #	REPRESENTATIVE DIRECT SURVEY OF HORIZ. SURFACES	REPRESENTATIVE REMOVABLE SURVEY OF HORIZ. SURFACES	LARGE AREA WIPE SURVEY
201	99 M 175	99 M 175	99 M 175
202	99 M 175	99 M 175	99 M 175
203	99 M 175	99 M 175	99 M 175
204	99 M 250	99 M 250	99 M 250
204 cor	99 M 267	99 M 267	99 M 267
205	99 M 174	99 M 174	99 M 174
206	99 M 175	99 M 175	99 M 175
207	99 M 175	99 M 175	99 M 175
209	99 M 175	99 M 175	99 M 175
210	99 M 175	99 M 175	99 M 175
212	99 M 174	99 M 174	99 M 174
213	99 M 174	99 M 174	99 M 174
214	99 M 174	99 M 174	99 M 174
220	99 M 176	99 M 176	99 M 176
220Δ	99 M 176	99 M 176	99 M 176
221	99 M 176	99 M 176	99 M 176
222	99 M 176	99 M 176	99 M 176
223	99 M 176	99 M 176	99 M 176
224	99 M 176	99 M 176	99 M 176
225	176 / 99 M 212 / 213 / 247	176 / 99 M 212 / 213 / 247	176 / 99 M 212 / 213 / 247
226	99 M 176	99 M 176	99 M 176
227	99 M 176	99 M 176	99 M 176

RADIOACTIVE MATERIAL MANAGEMENT AREA (RMMA) ROLLBACK FOR "M" BLDG.

SECOND FLOOR

RM. #	REPRESENTATIVE DIRECT SURVEY OF HORIZ. SURFACES	REPRESENTATIVE REMOVABLE SURVEY OF HORIZ. SURFACES	LARGE AREA WIPE SURVEY
228	99-M 241	99 M 241	99 M 241
230	99 M 253	99 M 253	99 M 253
250	99 M 182	99 M 182	99 M 182
251	99 M 181	99 M 181	99 M 181
252	99 M 184	99 M 184	99 M 184
253	99 M 184	99 M 184	99 M 184
254	99 M 183	99 M 183	99 M 183
ST. 1	99 M 224	99 M 224	99 M 224
ST. 2	99 M 284	99 M 284	99 M 284
ST. 3	99 M 224	99 M 224	99 M 224
ST. 4	N/A		
ELEV.	99 M 224	99 M 224	99 M 224
		N	
		A	

Attachment 3

PG OF

GENERIC DISPOSITION PROCESS -- "M" BLDG.

ROOF

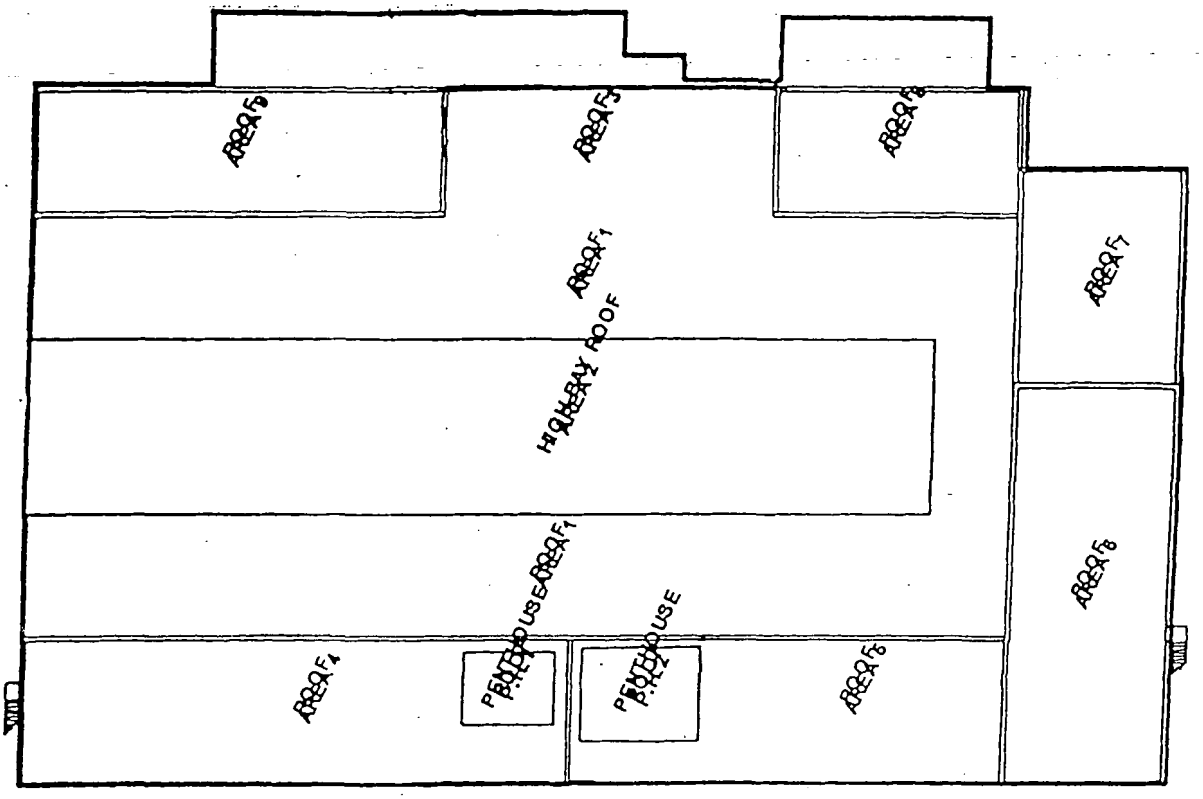
AREA/ SECTION	VENTS	DRAINS	DOSE RATES	ACCESSIBLE ROOF TOP SURFACE		FCA	COMMENTS
AREA 1-9	99-M-095	99-M-095	99-M-323	N/A		N/A	→
AREA 1 SEC. 9				99-M-292		X	SEE LAB. ISOTOPIC ANAL. LAB I.D. 9906118 0.17 Pci/g - Pu 238, 239
AREA 1 SEC. 12				99-M-292		X	SEE NOTE 1
AREA 1 SEC. 10				99-M-291		N/A	→
AREA 1 SEC. 11				99-M-295		X	SEE NOTE 1
AREA 1 SEC 14				99-M-296		N/A	→
AREA 2 SEC. 8				99-M-288		X	SEE NOTE 1
AREA 3 SEC. 6				99-M-286		X	SEE NOTE 1
AREA 4 SEC. 1				99-M-272		X	SEE NOTE 1
AREA 4 SEC 2				99-M-270		X	SEE NOTE 1
AREA 5 SEC. 3				99-M-273		N/A	→
AREA 5 SEC. 15				99-M-290		N/A	→
AREA 6 SEC. 13				99-M-289		X	SEE NOTE 1
AREA 7 SEC. 4				99-M-271		X	SEE NOTE 1
AREA 8 SEC. 5				99-M-274		N/A	→
AREA 9 SEC. 7	↓	↓	↓	99-M-287		N/A	→

NOTE 1: REFER TO RSDS 99-M-312 - SAMPLING FOR ROOF. LABORATORY ISOTOPIC ANALYSIS - SEE ATTACHMENT EXTERIOR RADIOLOGICAL SURVEYS HAVE LABORATORY ISOTOPIC RESULTS STILL PENDING.

RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM) "M" BLDG. ROOF ALL INCLUSIVE	SURVEY NO. 99-M-324
PURPOSE: REFERENCE DRAWING / MAP	RWP NO. N/A
	DATE: 13 JUL 99
	TIME: 1200

MAP/DRAWING



LEGEND: # = mrem/hr (γ) whole body
E = mrem/hr (β+η+γ) extremity on contact
△# = mrem/hr neutron
[#] = air sample number
(#) = swipe number
(#/α) or /β = direct cont. measurement in dpm/100cm^2

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
	N	
	A	

[redacted]

HP# 7875	Date: 13 JUL 99
HP#	Date:
HP# 8996	Date: 7-13-99

ML-9620 (2-98)

Survey No. 99-M-324

Page ___ of ___

RADIOLOGICAL SURVEY DATA SHEET (cont.)

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments

N/A

COMMENTS:

NOTES:

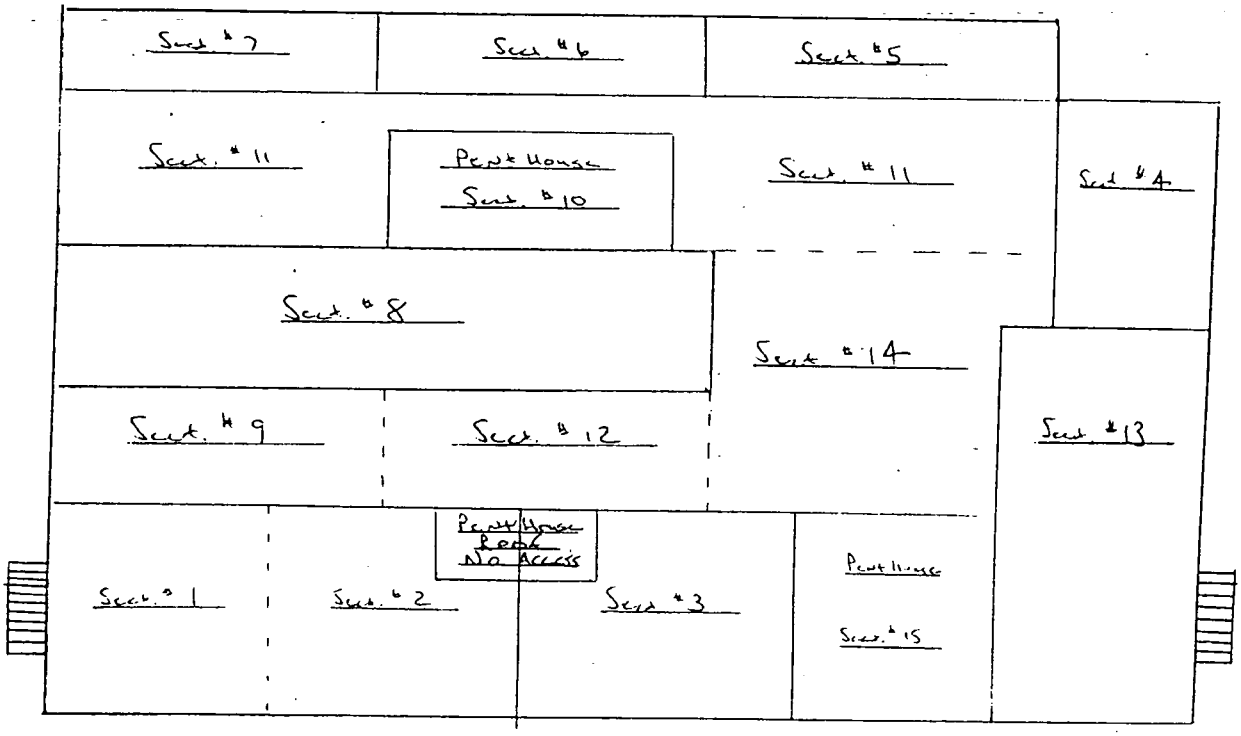
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

ML-9620 (4-98)

RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM) "M" BLDG - ROOF ALL INCLUSIVE	SURVEY NO. 99-M-324
PURPOSE: REFERENCE DRAWING/MAP	RWP NO. N/A
	DATE: 13 JUL 99
	TIME: 1200

MAP/DRAWING



LEGEND: # = mrem/hr (γ) whole body
E = mrem/hr (β+η+γ) extremity on contact
△# = mrem/hr neutron
[#] = air sample number
(#) = swipe number
(#/α) or /β = direct cont. measurement in dpm/100cm^2

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date

ML-9620 (2-98)

[redacted]

HP#	Date:
7875	13 JUL 99
HP#	Date:
HP#	Date:
5996	7-13-99

Survey No. 99-M-324

Page ___ of N/A

RADIOLOGICAL SURVEY DATA SHEET (cont.)

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments

N/A

COMMENTS:

NOTES:

1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

ML-9620 (4-98)

Attachment 4

PG OF

GENERIC DISPOSITION PROCESS -- "M" BLDG.

PERIMETER 15' SURVEY

SIDE OF BUILDING	BUILDING FOUNDATION	OUTSIDE STRUCTURES	DOSE RATES	SMEARS &DIRECT SURVEY OF WALK WAYS		FCA	COMMENTS
NORTH	99-M-318	99-M-305	99-M-112	99-M-137 99-M-121		M-019 M-021 M-022	**
SOUTH	99-M-318	99-M-305	99-M-112	99-M-137 99-M-134		M-025	**
EAST	* 99-M-318	99-M-305	99-M-112	99-M-137 99-M-134		M-023 M-024	**
WEST	99-M-318	99-M-305	99-M-112	99-M-137 99-M-133		N/A	

N

A

*- REFER TO RSDS 99-M-318 ; ALL SURVEYS OF BUILDING FOUNDATION COMPLETED, WITH THE EXCEPTION OF AREA IN SOUTH EAST CORNER, WHICH IS INACCESSIBLE AT THIS TIME.

**- REFER TO RSDS 99-I-001 & ASSOCIATED LAB ISOTOPIC ANALYSIS LABORATORY SAMPLE I.D 9906121 & 9906122 RESULTS INDICATE NATURAL THORIUM & URANIUM.

Appendix H

Radon Survey/Information

UNC Geotech

UNC Geotech
2597 B 3/4 Road
P.O. Box 14000
Grand Junction, Colorado 81502-5504
303/242-8621

April 12, 1990

Dennis Murphy
EG&G Mound Applied Technonogies
P.O. Box 3000
Mound Road
Miamisburg, OH 45343-3000

File

Dear Mr. Murphy:

I have enclosed the results of the radon measurements made at your site as part of the DOE Indoor Radon Study. A copy of these results can be provided in electronic format if desired. The results will be forwarded to the study sponsor, the DOE Office of Projects and Facilities Management, by the end of April.

Please contact me at FTS 326-6293 or commercial (303) 248-6293 if you have any questions.

Sincerely yours,

Mark D. Pearson

Mark D. Pearson
Project Manager
UNC Geotech

cc: DOE Points of Contact

Area	Bldg	Bldg Description	Room	Radon pCi/l	Radon pCi/l	Manid	Dupid	Install Date	Retrieve Date	Comments
	21		ABOVE AIR SAMPLER	161.1	125.0	1678055	1666782	12/14/89	2/16/90	MET - OLD THORIUM STORAGE
	21		ABOVE AIR SAMPLERS	116.7		1660508		12/14/89	2/16/90	MET - OLD THORIUM STORAGE
		SW	19 MID EAST WALL	4.0		1661547		12/12/89	2/19/90	HISTORY OF ELEVATED READINGS
	48		114 B CLOSET ON SPRINKLER PIPE	3.2		1671292		12/12/89	2/19/90	
	19		ROOM 1	2.6		1678051		12/13/89	2/19/90	
		OLD SO BLDG	BASEMENT RIGHT CABINET	2.4		1661595		12/14/89	2/19/90	
	55		1 BELOW THEMOSTAT ON E WALL	2.1		1661515		12/18/89	2/19/90	
	57		ROOM 1	1.9		1661565		12/12/89	2/19/90	
	87		143	1.5		1661563		12/13/89	2/19/90	
	898	FIRE STATION	ROOM 002 EQUIPMENT ROOM WITH SUMP	1.4		1654460		12/12/89	2/19/90	
	24		ROOM 1 PLANT NORTH WALL	1.3		1672087		12/12/89	2/19/90	
		PAINT SHOP	PS 4	1.2		1661516		12/12/89	2/16/90	*
	30		ROOM 3 EAST	1.1		1671262		12/12/89	2/16/90	
	100		103 MIDDLE OF NORTH WALL	1.0		1678060		12/12/89	2/19/90	
	37		6 NORTH WALL	1.0		1678046		12/12/89	2/19/90	
	34		34 A WEST WALL	.9	.6	1672062	1672042	12/12/89	2/16/90	MET
	102		123	.9		1661577		12/14/89	2/19/90	
	61		RM 221 MIDDLE OF NORTH WALL	.9		1661565		12/13/89	2/19/90	
	67		101 H	.9		1678029		12/12/89	2/19/90	
	G-13	LOG	G-514 WEST WALL	.9		1661544		12/12/89	2/16/90	
		T	CORRIDOR 28	.9		1678039		1/15/90	2/19/90	
		T	153	.9		1678067		1/15/90	2/19/90	
		T	78	.9		1678077		1/15/90	2/19/90	
		T	30	.9		1661586		1/15/90	2/19/90	
	105	PARTS MACHINING BUILDING	STAIRWELL NEXT TO ROOM 127	.8		1661564		12/12/89	2/19/90	
	25	ARAC	3 ON BOOK CASE MIDDLE	.8		1671314		12/15/89	2/19/90	
	60		1 ON DOOR TO ROOM 3	.8		1678049		12/12/89	2/19/90	
		A	153C CENTER CUBICLE WEST WALL	.8		1672056		12/14/89	2/16/90	
		C BUILDING OLD CAFETERIA	NORTHEAST SECTION INTERNAL WALL RM2	.8		1672052		12/12/89	2/16/90	
		R BUILDING	68 NORTH WALL	.8		1678068		12/13/89	2/16/90	
		SW	8 WEST WALL AT OLD RECOVERY	.8		1672057		12/11/89	2/16/90	
		WO BLDG	WO 8	.8		1678045		12/18/89	2/16/90	
	87		124	.8		1678032		12/12/89	2/19/90	
	88		ROOM 116 ON NORHT WALL RIGHT OF CEN	.7	.5	1661524	1661535	12/12/89	2/19/90	
	89		101 NEAR BACK CORNER BY ROOF DRAIN	.7	.5	1666783	1668532	12/15/89	2/19/90	
	22		RM 1 EAST CORRIDOR ON STORAGE RACK	.7		1678070		12/13/89	2/19/90	
	56	FIRE PUMP HOUSE	ROOM 1 THERE IS ONLY 1 ROOM	.7		1678066		12/12/89	2/19/90	
		E ANNEX	E 225 EAST WALL	.7		1661552		12/19/89	2/16/90	
		POWER HOUSE PH-1	REPAIR SHOP NORTH EAST CORNER	.7		1678040		12/12/89	2/19/90	
		M BLDG	M-135	.7		1661553		12/12/89	2/16/90	
	26		ROOM 84 SOUTH WEST WALL	.6	.9	1672048	1667159	12/13/89	2/16/90	
	69		RM 7 ON NORTH WALL	.6	.4	1672044	1672077	12/12/89	2/19/90	
	26		ROOM 84 SOUTH WEST WALL	.6		1671279		12/13/89	2/16/90	
	35		RM 7	.6		1654459		12/14/89	2/19/90	
	38	PP BLDG	PP CORR 136	.6		1678016		12/14/89	2/19/90	
	72		ON OVERHEAD DOOR BEAM	.6		1672069		1/03/90	2/19/90	
	93		HALLWAY 107 (MIDWAY)	.6		1661629		12/13/89	2/20/90	
	98	FIRE STATION	ROOM 114 DORM	.6		1661507		12/12/89	2/19/90	
		COS	NW STAIRWELL AT BASEMENT LEVEL	.6		1672086		12/14/89	2/19/90	
		OSW	120 C	.6		1661573		12/12/89	2/16/90	
		SW	150 WEST END GAS BOX	.6		1678043		12/11/89	2/16/90	
		A	34 EAST WALL	.5	.7	1672075	1672051	12/14/89	2/16/90	
	47		102 MIDDLE OF EAST WALL	.5	.5	1658110	1666819	12/12/89	2/16/90	

Area	Bldg	Bldg Description	Room	Avg Radon pCi/l	Duplicate Radon pCi/l	Monid	Dupid	Monitor Install Date	Monitor Retrieve Date	Comments
	45		WORK STATION AREA	.4		1681568		12/14/89	2/19/90	
	46		81 EAST WALL	.4		1672078		12/12/89	2/19/90	
	49		HALL OUTSIDE RM 125	.4		1678020		12/14/89	2/19/90	
	51		107 TOP OF FUME HOOD	.4		1681575		12/12/89	2/19/90	
	63		ROOM 134	.4		1672059		12/13/89	2/20/90	
	63W		RM 4	.4		1678078		12/14/89	2/19/90	
	65		ROOM 10 CONFERANCE ROOM	.4		1671284		12/14/89	2/19/90	
	66		OFFICE AREA	.4		1681554		12/12/89	2/19/90	
	68		EAST WALL CENTER BEAM	.4		1681555		12/14/89	2/19/90	
	69		RM 10A	.4		1681576		12/12/89	2/19/90	
	70		17D MEETING ROOM CENTER WALL	.4		1678041		12/12/89	2/19/90	
	88		ROOM 116	.4		1671285		12/12/89	2/19/90	
	95	SW/PP	95- BLD-ROOM81	.4		1661531		12/12/89	2/20/90	
		OS BUILDING	CORRIDOR 2 - 6 FT. ABOVE FLOOR	.4		1678071		12/13/89	2/19/90	
		I	I HALLWAY	.4		1667194		12/12/89	2/19/90	
		N BUILDING	N 21 WEST WALL	.4		1678057		12/15/89	2/20/90	
		POWER HOUSE PH-1	OFFICE SUPERVISOR	.4		1678036		12/12/89	2/19/90	
		R BUILDING	12 SOUTH WALL	.4		1681566		12/13/89	2/19/90	
	34		BURN ROOM			1654481		12/12/89		BURNT (NOT AVAILABLE)
	61		RM 151			1681567		12/13/89		MISSING

Bldg	Bldg Description	Room	Avg Radon pCi/l	Duplicate Radon pCi/l	Monid	Dupid	Monitor Install Date	Monitor Retrieve Date	Comments
	R BUILDING	163 NEXT TO NORTH WALL	.5	.5	1666533	1666816	12/13/89	2/16/90	
101		ROOM 5 ON SOUTH WEST WALL IN OFFSET	.5		1671288		12/12/89	2/19/90	
	"B" 175	175 WEST WALL	.5		1678040		12/12/89	2/16/90	
36		ELECTRICAL PANEL RM IN ELECTRONICS	.5		1678062		12/12/89	2/19/90	
40		100	.5		1654480		12/13/89	2/16/90	
43		1 EAST WALL OVER WATER DISPENSER	.5		1678076		12/12/89	2/20/90	
44		ON BULLETTIN BOARD	.5		1678047		12/12/89	2/16/90	
47		102 MIDDLE OF EAST WALL	.5		1678059		12/12/89	2/16/90	
50		CELL 113	.5		1681582		12/13/89	2/19/90	
79		CENTRAL HALLWAY WEST OF DOOR TO RM7	.5		1681605		12/18/89	2/16/90	
89		101 NEAR BACK CORNER BY ROOF DRAIN	.5		1678079		12/15/89	2/19/90	
91		1ST FLOOR	.5		1661525		12/15/89	2/16/90	
91		2ND FLOOR OUTSIDE RM215	.5		1681593		12/15/89	2/16/90	
92		HALLWAY RIGHT OFF ROOM 8	.5		1661509		12/12/89	2/19/90	
94		BAY 2 NORTH WALL	.5		1654477		12/12/89	2/19/90	
	A	215 WEST WALL	.5		1681572		12/14/89	2/16/90	
	A	108D WEST WALL	.5		1681580		12/14/89	2/16/90	
	COS	116 N WALL NEAR PUNCH PRESS	.5		1654456		12/12/89	2/19/90	
	COS	319 WALL CABINET TO RIGHT OF SINK	.5		1681590		12/12/89	2/19/90	
	E BUILDING	159 WEST WALL	.5		1678033		12/14/89	2/16/90	
	E BUILDING	103 WEST WALL	.5		1678072		12/14/89	2/16/90	
	E ANNEX	E 212 NORTH WALL	.5		1681587		12/18/89	2/16/90	
	GN BUILDING	ROOM 2	.5		1678065		12/12/89	2/16/90	
	GP 81	1A MIDDLE OF WEST WALL	.5		1678054		12/12/89	2/19/90	
	H BLDG	ROOM 127	.5		1681571		12/12/89	2/16/90	
	HH	HH-8	.5		1671269		12/18/89	2/19/90	
	I BUILDING	BASEMENT LEFT CRAWL SPACE DOOR	.5		1671260		12/12/89	2/19/90	
	M BUILDING	M 108	.5		1678056		12/15/89	2/19/90	
	OSE	CORRIDOR 437	.5		1661536		12/15/89	2/16/90	
	OSE	CORRIDOR 301 ACROSS FROM WATER FOUN	.5		1672084		12/15/89	2/16/90	
	OSW	4HT FLOOR	.5		1678028		12/12/89	2/16/90	
	OSE	CORR 212 SOUTH WALL NEAR 218 DOOR	.5		1678036		12/15/89	2/16/90	
	OSW	319	.5		1678069		12/13/89	2/16/90	
	OSW	2ND FLOOR	.5		1681611		12/12/89	2/16/90	
	POWER HOUSE PH-1	STATIONARY BOARD CORNER	.5		1678073		12/12/89	2/19/90	
	R BUILDING	145 WEST WALL ABOVE BALANCE	.5		1654538		12/14/89	2/16/90	
	SN/R TRITIUM COMPLEX	128 OVER LARGE METAL FLOOR DISC	.5		1678019		12/12/89	2/16/90	
	W BLDG	W135 WEST CENTRAL WALL	.5		1671293		12/12/89	2/16/90	
	WO BLDG	WOA 110	.5		1671301		12/18/89	2/16/90	
	"B" 124	EAST WALL	.5		1667189		12/12/89	2/16/90	
	OSE	113 BULLETIN BOARD OPPOSITE ELEVATO	.5		1678027		12/15/89	2/16/90	
TF-2		114 EAST WALL CENTER OF ROOM	.4		1678064		12/12/89	2/19/90	
	HH	HH-24	.4		1667187		12/14/89	2/19/90	
	OS BUILDING	CORRIDOR 7 NEXT TO ROOM 216	.4		1661514		12/13/89	2/19/90	
	GP 81	1A MIDDLE OF WEST WALL	.4	.5	1672135	1661542	12/12/89	2/19/90	
105	PARTS MACHINING BUILDING	136 QC OFFICE	.4		1678017		12/12/89	2/19/90	
27		CELL 8 - WALL	.4		1681583		12/12/89	2/19/90	
28	CERAMIC PRODUCTION	101	.4		1672061		12/12/89	2/19/90	
29		HALLWAY	.4		1672105		12/14/89	2/19/90	
	TEST FIRE BUILDING 3	3-315	.4		1672036		12/12/89	2/19/90	
38	PP BLDG	PP CORR 16/BAY 2 WALL	.4		1681570		12/14/89	2/19/90	
39		BREAK RM	.4		1678050		12/14/89	2/19/90	
42		101 B EAST WALL	.4		1678031		12/13/89	2/19/90	

Appendix I

Asbestos Summary/Information

USE CATEGORY	
C ML-9771A	This procedure shall be available to workers, though not necessarily at the work location. This procedure may be performed without referring to the procedure; however, the user is still responsible for adhering to the procedure.

TECHNICAL MANUAL

MD-10391, ISSUE 5
ASBESTOS PROGRAM MANUAL

MOUND
ML-5872(1-89)

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19–3	71–3
20–3	72–3
21–3	73–3
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T. C. Fort, DOE/MEMP

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This issue has been reviewed and approved for publication by TR, Evan Kirk.

2/23/99
Date

CHANGES INCORPORATED

- [x] Replace Pages 1, 2, 15, 16, 17, 18, 23, 24, 55, 56, 59, 60, 77 and 78
- [ ] Insert (New Pages)
- [ ] Remove
- [ ] Complete Reprint

All appropriate reviews were conducted. This issue is authorized for use by Advance Change Order on file in Technical Manuals.

M. D. Miller, Manager 11–12–98
Industrial Safety & Health

TR – TECHNICAL RESPONSIBILITY E – EDITOR

TABLE 1
BUILDING INFORMATION FOR EG&G MOUND FACILITY

Compiled by: Mound Industrial Hygiene

BUILDING NAME	YEAR CONSTRUCTED	SQUARE FOOTAGE	ACBM[1] ?
A	1948	55,582	Yes
B	1948	27,735	Yes
C	1948	13,403	Yes
COS	1986	64,654	Suspected[2]
DS	1965	47,810	Yes
E	1948	47,755	Yes
EG1	1973	240	Suspected[2]
EG2	1973	240	Suspected[2]
EG4	1958	148	Suspected[2]
EG6	1975	240	Suspected[2]
EG7	1972	80	Suspected[2]
FH1	1948	400	No
FH2	1948	400	No
G	1948	7,518	Yes
GH	1948	5,347	Yes
GH44	1963	365	Assumed[3]
GIS	1948	166	Yes
GP-1	1949	7,792	Yes
GP44	1971	365	Assumed[3]
GW	1968	9,782	Yes
H	1948	17,334	Yes
HH	1948	15,276	Yes

BUILDING NAME	YEAR CONSTRUCTED	SQUARE FOOTAGE	ACBM[1] ?
I	1948	25,736	Yes
M	1948	56,018	Yes
OSE	1986	90,072	Assumed[3]
OSW	1974	54,280	Yes
P	1948	15,143	Yes
PH	1948	646	Yes
PS	1963	2,288	Yes
R	1948	55,003	Yes
SD	1948	1,593	Yes
SST	1973	590	Suspected[2]
SW	1951	43,066	Yes
T	1948	172,963	Yes
W	1948	32,484	Yes
WD	1948	16,216	Yes
WDA	1966	5,000	Yes
WH1	1960	374	No
WH2	1960	374	No
WH3	1960	128	No
1	1957	986	Yes
2	1959	6,291	Yes
3	1964	12,391	Yes
5	1948	314	No
6	1948	90	No
7	1986	387	No
8	1986	66	No

BUILDING NAME	YEAR CONSTRUCTED	SQUARE FOOTAGE	ACBM[1] ?
10	1986	66	No
11	1986	372	No
13	1960	47	Suspected[2]
14	1986	53	Suspected[2]
16	1960	480	Yes
17	1961	1,120	Yes
19	1963	4,480	No
20	1986	303	No
21	1966	4,069	Suspected[2]
22	1966	9,090	No
23	1966	3,422	Yes
24	1966	840	Yes
25	1966	430	Yes
26	1965	800	Assumed[3]
27	1968	5,285	Yes
28	1966	11,329	Yes
29	1964	6,601	Yes
30	1964	740	Yes
31	1966	8,740	Suspected[2]
33	1965	1,344	Yes
34	1965	1,100	No
35	----	2,500	Yes
36	1968	4,255	Yes
37	1968	2,463	Yes
38	1968	44,327	Yes

BUILDING NAME	YEAR CONSTRUCTED	SQUARE FOOTAGE	ACBM[1] ?
39	1967	3,515	No
40	1968	12,227	Yes
42	1969	2,892	Yes
43	1969	1,516	Yes
44	1969	2,480	Yes
45	1970	2,775	Yes
46	1969	2,439	Yes
47	1969	3,611	Yes
48	1970	7,950	Yes
49	1970	14,929	Yes
50	1971	14,849	Yes
51	1972	3,541	Assumed[3]
52	1973	78	No
53	1986	239	No
54	1986	331	No
55	1973	330	No
56	1973	613	Yes
57	1975	510	Yes
58	1977	6,110	No
59	1978	668	Suspected[2]
60	1980	3,958	Yes
61	1983	45,490	Suspected[2]
62	1980	290	Yes
63	1981	16,461	Assumed[3]
64	----	72	No

BUILDING NAME	YEAR CONSTRUCTED	SQUARE FOOTAGE	ACBM[1] ?
65	1979	2,400	Assumed[3]
66	1979	600	Suspected[2]
67	1982	3,787	Assumed[3]
68	1979	1,990	Suspected[2]
69	1981	1,620	Suspected[2]
70	1982	3,366	Suspected[2]
71	1983	800	Suspected[2]
72	1983	2,400	No
73	1983	2,200	Suspected[2]
74	1986	400	Suspected[2]
79	1983	1,650	Suspected[2]
80	1986	314	No
81	1986	314	No
82	1986	314	No
83	1986	314	No
84	1986	314	No
85	1988	3,160	No
87	1988	38,882	No
88	1983	7,200	Assumed[3]
89	1984	4,830	Assumed[3]
90	1983	656	Suspected[2]
91	1984	8,065	Suspected[2]
92	1984	1,600	Suspected[2]
93	1984	2,936	Suspected[2]
94	1984	1,240	Assumed[3]

BUILDING NAME	YEAR CONSTRUCTED	SQUARE FOOTAGE	ACBM[1] ?
95	1985	2,000	Suspected[2]
96	----	432	Suspected[2]
98	1988	8,517	Suspected[2]
99	1989	11,412	Suspected[2]
100	1989	6,292	Suspected[2]
101	1986	1,815	Suspected[2]
102	1987	10,982	Suspected[2]
104	----	1,800	Suspected[2]
105	----	38,027	Suspected[2]
106	----	180	Suspected[2]
107	----	70	Suspected[2]
112	----	785	Suspected[2]
113	----	547	Suspected[2]
114	----	432	Suspected[2]
119	----	350	Suspected[2]
120	----	350	Suspected[2]

NOTES: (1) ACBM - Asbestos-containing building materials.

(2) Building is noted to contain "suspect" asbestos-containing building materials. Industrial hygiene building files lack building construction or asbestos survey information.

(3) Building is noted to contain "suspect" asbestos-containing flooring tile or sheet goods.

TABLE: INVENTORY OF ASBESTOS-CONTAINING MATERIALS
M BUILDING
MARCH 1999

NEW

Location of ACM	Material Description	Homo-geneous Area No.	Type ACM	Material Quantity (approx.)
The following areas were located on the ground level:				
Room 38A, pipe above ceiling	Cementitious fitting insulation between sections of fiberglass pipe insulation	1	TSI	7 ftgs.
Room 38, pipe above ceiling	Cementitious fitting insulation between sections of fiberglass pipe insulation	1	TSI	5 ftgs.
Room 39 (Mens Room), pipe above ceiling	Cementitious fitting insulation between sections of fiberglass pipe insulation	1	TSI	5 ftgs.
Room 20, pipe	Cementitious fitting insulation between sections of fiberglass pipe insulation	1	TSI	29 ftgs.
Room 20, pipe	Preformed-block pipe insulation	2	TSI	90 lf
Room 17A, walls and ceiling	Ceiling tile mastic, brown	3*	Misc.	90 sf
Room 17A, floor	Floor tile, 9"x9"	4	Misc.	75 sf
Room 16, floor	Floor tile, 9"x9"	4	Misc.	195 sf
Room 16, walls and ceiling	Ceiling tile mastic, brown	3*	Misc.	65 sf
Room 16A, floor	Floor tile, 9"x9"	4	Misc.	100 sf
Room 16A, ceiling	Ceiling tile mastic, brown	3*	Misc.	20 sf
Hallway 15, pipe	Cementitious fitting insulation between sections of fiberglass pipe insulation	1	TSI	2 ftgs.
Hallway 15, pipe	Preformed-block pipe insulation	2	TSI	35 lf
Hallway 15, pipe	Aircell-paper pipe insulation	5	TSI	7 lf
Janitors Closet 36, pipe above ceiling	Cementitious fitting insulation between sections of fiberglass pipe insulation	1	TSI	7 ftgs.
Janitors Closet 36, ceiling	Transite panel	6	Misc.	20 sf

(continued)

TABLE: INVENTORY OF ASBESTOS-CONTAINING MATERIALS
M BUILDING
MARCH 1999

Location of ACM	Material Description	Homo-geneous Area No.	Type ACM	Material Quantity (approx.)
The following areas were located on the ground level (continued):				
Room 37A, pipe above ceiling	Cementitious fitting insulation between sections of fiberglass pipe insulation	1	TSI	3 ftgs.
Room 37A, floor	Floor tile, 12"x12" white with orange and brown streaks pattern	7	Misc.	80 sf
Room 31/32, pipe above ceiling	Cementitious fitting insulation between sections of fiberglass pipe insulation	1	TSI	10 ftgs.
Room 31/32, debris above ceiling	Cementitious fitting insulation between sections of fiberglass pipe insulation	1^{α}	TSI	3 sf
Room 31/32, wall	Ceiling tile mastic, brown	3*	Misc.	100 sf
Room 31/32, floor	Floor tile, 9"x9"	4	Misc.	310 sf
Rooms 33/35/35A, pipe	Cementitious fitting insulation between sections of fiberglass pipe insulation	1	TSI	10 ftgs.
Rooms 33/35/35A, wall	Ceiling tile mastic, brown	3*	Misc.	60 sf
Rooms 33/35/35A, floor	Floor tile, 9"x9"	4	Misc.	210 sf
Room 42/42A, pipe above ceiling	Preformed-block pipe insulation	2	TSI	130 lf
Room 42/42A, debris above ceiling	Preformed-block pipe insulation	2^{α}	TSI	20 sf
Room 42/42A, wall	Ceiling tile mastic, brown	3*	Misc.	100 sf
Room 42/42A, floor	Floor tile, 9"x9"	4	Misc.	815 sf
Room 41, pipe above ceiling	Preformed-block pipe insulation	2	TSI	80 lf
Room 41, wall	Ceiling tile mastic, brown	3*	Misc.	100 sf
Room 41, floor	Floor tile, 9"x9"	4	Misc.	815 sf

(continued)

TABLE: INVENTORY OF ASBESTOS-CONTAINING MATERIALS
M BUILDING
MARCH 1999

Location of ACM	Material Description	Homo-geneous Area No.	Type ACM	Material Quantity (approx.)
The following areas were located on the ground level (continued):				
Room 12, floor	Floor tile, 9"x9"	4	Misc.	1,680 sf
Room 12, wall	Ceiling tile, 12"x12" 2-sizes of small holes and gray fill style	8	Misc.	1,205 sf
Room 12, pipe	No-drip pipe gum wrap, white	9	TSI	15 lf
Room 14, floor	Floor tile, 9"x9"	4	Misc.	690 sf
Room 14, wall	Ceiling tile, 12"x12" 2-sizes of small holes and gray fill style	8	Misc.	740 sf
Crawl spaces above Rooms 12/14, pipe	Cementitious fitting insulation between sections of fiberglass pipe insulation	1*	TSI	20 ftgs.
Crawl spaces above Rooms 12/14, pipe	Preformed-block pipe insulation	2*	TSI	220 lf
Crawl spaces above Rooms 12/14, debris	Preformed-block pipe insulation	2*[α]	TSI	35 sf
Crawl spaces above Rooms 12/14, pipe	Aircell-paper pipe insulation	5*	TSI	80 lf
Crawl spaces above Rooms 12/14, pipe	Layered-paper pipe insulation	10*	TSI	25 lf
Crawl spaces above Rooms 12/14, debris	Layered-paper pipe insulation	10*[α]	TSI	5 sf
Room 10, pipe above ceiling	Layered-paper pipe insulation	10*	TSI	2 lf
Room 10, debris above ceiling	Layered-paper pipe insulation	10*[α]	TSI	2 sf
Pipe chase between Rooms 9 and 10, pipe	Layered-paper pipe insulation	10*	TSI	25 lf

(continued)

TABLE: INVENTORY OF ASBESTOS-CONTAINING MATERIALS
M BUILDING
MARCH 1999

Location of ACM	Material Description	Homo-geneous Area No.	Type ACM	Material Quantity (approx.)
The following areas were located on the ground level (continued):				
Plenum above Rooms 2/48, pipe	Cementitious fitting insulation between sections of fiberglass pipe insulation	1	TSI	20 ftgs.
Plenum over Rooms 2/48, pipe	Preformed-block pipe insulation	2	TSI	120 lf
Plenum over Rooms 2/48, debris	Preformed-block pipe insulation	2^{α}	TSI	5 sf
Plenum over Rooms 2/48, pipe	Aircell-paper pipe insulation	5	TSI	40 lf
Plenum over Rooms 2/48, pipe	No-drip pipe gum wrap, white	9	TSI	4 lf
Corridor 44, pipe above ceiling	Cementitious fitting insulation between sections of fiberglass pipe insulation	1	TSI	8 ftgs.
Corridor 44, pipe above ceiling	Preformed-block pipe insulation	2	TSI	20 lf
Room 45A, pipe above ceiling	Cementitious fitting insulation between sections of fiberglass pipe insulation	1	TSI	1 ftg.
Room 45A, pipe above ceiling	Preformed-block pipe insulation	2	TSI	50 lf
Room 45A, wall	Ceiling tile mastic, brown	3*	Misc.	40 sf
Closet under Stairwell 1, floor	Floor tile, 9"x9"	4	Misc.	35 sf
Room 110, pipe	Cementitious fitting insulation between sections of fiberglass pipe insulation	1	TSI	1 ftg.
Room 110, pipe	No-drip pipe gum wrap, white	9	TSI	1 lf
Mezzanine area above Rooms 109/110, pipe	Cementitious fitting insulation between sections of fiberglass pipe insulation	1	TSI	20 ftgs.
Room 108, pipe above ceilings	Cementitious fitting insulation between sections of fiberglass pipe insulation	1*	TSI	8 ftgs.
Corridor by elevator, deck	Spray-applied fireproofing	11	Surfacing	70 sf

(continued)

TABLE: INVENTORY OF ASBESTOS-CONTAINING MATERIALS
M BUILDING
MARCH 1999

Location of ACM	Material Description	Homo-geneous Area No.	Type ACM	Material Quantity (approx.)
The following areas were located on the ground level (continued):				
Garage Space 103, deck	Spray-applied fireproofing	11	Surfacing	560 sf
Room 103, deck	Spray-applied fireproofing	11	Surfacing	480 sf
Room 101, floor	Mastic associated with floor tile, 12"x12" white with gray and putty smear pattern	12	Misc.	120 sf
Room 5, pipe	Aircell-paper pipe insulation	5	TSI	20 lf
Room 5, pipe	Layered-paper pipe insulation	10	TSI	20 lf
Room 5, floor	Floor tile, 12"x12" white with medium brown streaks pattern	13	Misc.	415 sf
Room 5, pipe above ceiling	Cementitious fitting insulation between sections of styrofoam pipe insulation	15	TSI	8 ftgs.
Room 4, floor	Floor tile, 9"x9"	4	Misc.	120 sf
Room 5A, pipe above ceiling	Cementitious fitting insulation between sections of fiberglass pipe insulation	1	TSI	6 ftgs.
Room 5A, debris above ceiling	Cementitious fitting insulation between sections of fiberglass pipe insulation	1^{α}	TSI	1 sf
Room 5A, pipe above ceiling	Preformed-block pipe insulation	2	TSI	60 lf
Room 5A, floor	Floor tiles, 12"x12": white with medium brown streaks pattern; olive with white streaks pattern	13/14	Misc.	510 sf
Room 5A, pipe above ceiling	Cementitious fitting insulation between sections of styrofoam pipe insulation	15	TSI	6 ftgs.
Room 27, pipe	Preformed-block pipe insulation	2	TSI	30 lf
Room 27, pipe	Cementitious fitting insulation between sections of fiberglass pipe insulation	1	TSI	2 ftgs.

(continued)

TABLE: INVENTORY OF ASBESTOS-CONTAINING MATERIALS
M BUILDING
MARCH 1999

Location of ACM	Material Description	Homo-geneous Area No.	Type ACM	Material quantity (approx.)
The following areas were located on the ground level (continued):				
High Bay Area 8, pipe	Cementitious fitting insulation between sections of fiberglass pipe insulation	1	TSI	20 ftgs.
High Bay Area 8, pipe	Preformed-block pipe insulation	2	TSI	550 lf
High Bay Area 8, pipe	Aircell-paper pipe insulation	5	TSI	825 lf
High Bay Area 8, pipe	Layered-paper pipe insulation	10	TSI	30 lf
Low section of Area 8, pipe	No-drip pipe gum wrap, white	9	TSI	120 lf
Area 3, pipe	Cementitious fitting insulation between sections of fiberglass pipe insulation	1	TSI	3 ftgs.
Area 3, pipe	Aircell-paper pipe insulation	5	TSI	60 lf
Area 3, pipe	Layered-paper pipe insulation	10	TSI	5 lf
Area 3, pipe	No-drip pipe gum wrap, white	9	TSI	10 lf
Mezzanine above Room 4, pipe	Preformed-block pipe insulation	2	TSI	20 lf
Mezzanine above Room 4, pipe	Aircell-paper pipe insulation	5	TSI	30 lf
Mezzanine above Room 4, tank	Preformed-block tank insulation	16	TSI	60 sf
Mezzanine above Room 4, debris	Pipe and tank insulations	2/5/16[α]	TSI	100 sf
Room 26, pipe above ceiling	Preformed-block pipe insulation	2	TSI	60 lf
Room 28, pipe above ceiling	Preformed-block pipe insulation	2	TSI	1 lf
The following area was located on the second floor level:				
Area 214A/B/C/D including stair-well and foyer, pipe above ceiling	Cementitious fitting insulation between sections of fiberglass pipe insulation	1	TSI	20 ftgs.

(continued)

TABLE: INVENTORY OF ASBESTOS-CONTAINING MATERIALS
M BUILDING
MARCH 1999

Location of ACM	Material Description	Homo-geneous Area No.	Type ACM	Material Quantity (approx.)
The following areas were located on the second level (continued):				
Area 214A/B/C/D including stair-well and foyer, pipe above ceiling	Preformed-block pipe insulation	2	TSI	100 lf
Area 214A/B/C/D including stair-well and foyer, pipe above ceiling	Layered-paper pipe insulation	10	TSI	100 lf
Room 207, pipe above ceiling	Preformed-block pipe insulation	2	TSI	15 lf
Room 207, debris above ceiling	Preformed-block pipe insulation	2[α]	TSI	2 sf
Room 209, pipe above ceiling	Preformed-block pipe insulation	2	TSI	10 lf
Room 209, debris above ceiling	Preformed-block pipe insulation	2[α]	TSI	2 sf
Room 210, pipe above ceiling	Preformed-block pipe insulation	2	TSI	2 lf
Room 203, pipe above ceiling	Preformed-block pipe insulation	2	TSI	40 lf
Room 203, debris above ceiling	Preformed-block pipe insulation	2[α]	TSI	5 sf
Room 203, pipe above ceiling	Layered-paper pipe insulation	10	TSI	120 lf
Room 202, debris above ceiling	Preformed-block pipe insulation	2[α]	TSI	1 sf
Room 202, pipe above ceiling	Layered-paper pipe insulation	10	TSI	30 lf
Room 201, pipe above ceiling	Layered-paper pipe insulation	10	TSI	30 lf
Room 201, pipe above ceiling	No-drip pipe gum wrap, white	9	TSI	1 lf
Room 205, pipe above ceiling	Preformed-block pipe insulation	2	TSI	20 lf
Room 205, pipe above ceiling	Layered-paper pipe insulation	10	TSI	90 lf
Stairwell 1 & Corridor 204, pipe above ceiling	Preformed-block pipe insulation	2	TSI	40 lf

(continued)

TABLE: INVENTORY OF ASBESTOS-CONTAINING MATERIALS
M BUILDING
MARCH 1999

Location of ACM	Material Description	Homo-geneous Area No.	Type ACM	Material Quantity (approx.)
The following areas were located on the second level (continued):				
Stairwell 1 & Corridor 204, pipe above ceiling	Layered-paper pipe insulation	10	TSI	55 lf
Corridor 204, debris above ceiling	Layered-paper pipe insulation	10[α]	TSI	5 sf
Stairwell 3, floor	Floor tile, 9"x9"	4	Misc.	25 sf
Janitor's Closet adjacent to Room 228, pipe	Cementitious fitting insulation between sections of fiberglass pipe insulation	1	TSI	6 ftgs.
Janitor's Closet adjacent to Room 228, debris	Cementitious fitting insulation between sections of fiberglass pipe insulation	1[α]	TSI	2 sf
The following areas were located in the roof penthouses:				
Penthouse 252P/253P, pipe	No-drip pipe gum wrap, white	9	TSI	6 lf
Penthouse 254P, pipe	No-drip pipe gum wrap, white	9	TSI	4 lf
Penthouse 251P, pipe	No-drip pipe gum wrap, black	17	TSI	2 lf
Penthouse 250P, pipe	Cementitious fitting insulation between sections of fiberglass pipe insulation	1	TSI	5 ftgs.
Penthouse 250P, pipe	Preformed-block pipe insulation	2	TSI	80 lf
Penthouse 250P, loose stock	No-drip pipe gum wrap, white	9	TSI	1 roll
Penthouse 250P, duct	Cementitious layer applied to canvas jacket over fiberglass duct insulation	18	TSI	2,200 sf
The following areas were located on the roof:				
East side of building, pipe running north-south	Preformed-block pipe insulation	2	TSI	260 lf
North-east corner of building, pipe in stanchion line	Preformed-block pipe insulation	2	TSI	50 lf

(continued)

TABLE: INVENTORY OF ASBESTOS-CONTAINING MATERIALS
M BUILDING
MARCH 1999

Location of ACM	Material Description	Homo-geneous Area No.	Type ACM	Material Quantity (approx.)
The following area was located outside on the north side of the building:				
Bewteen Utility Room 20 and Main Stanpipe Line, pipes	Preformed-block pipe insulation	2	TSI	30 lf

Notes:

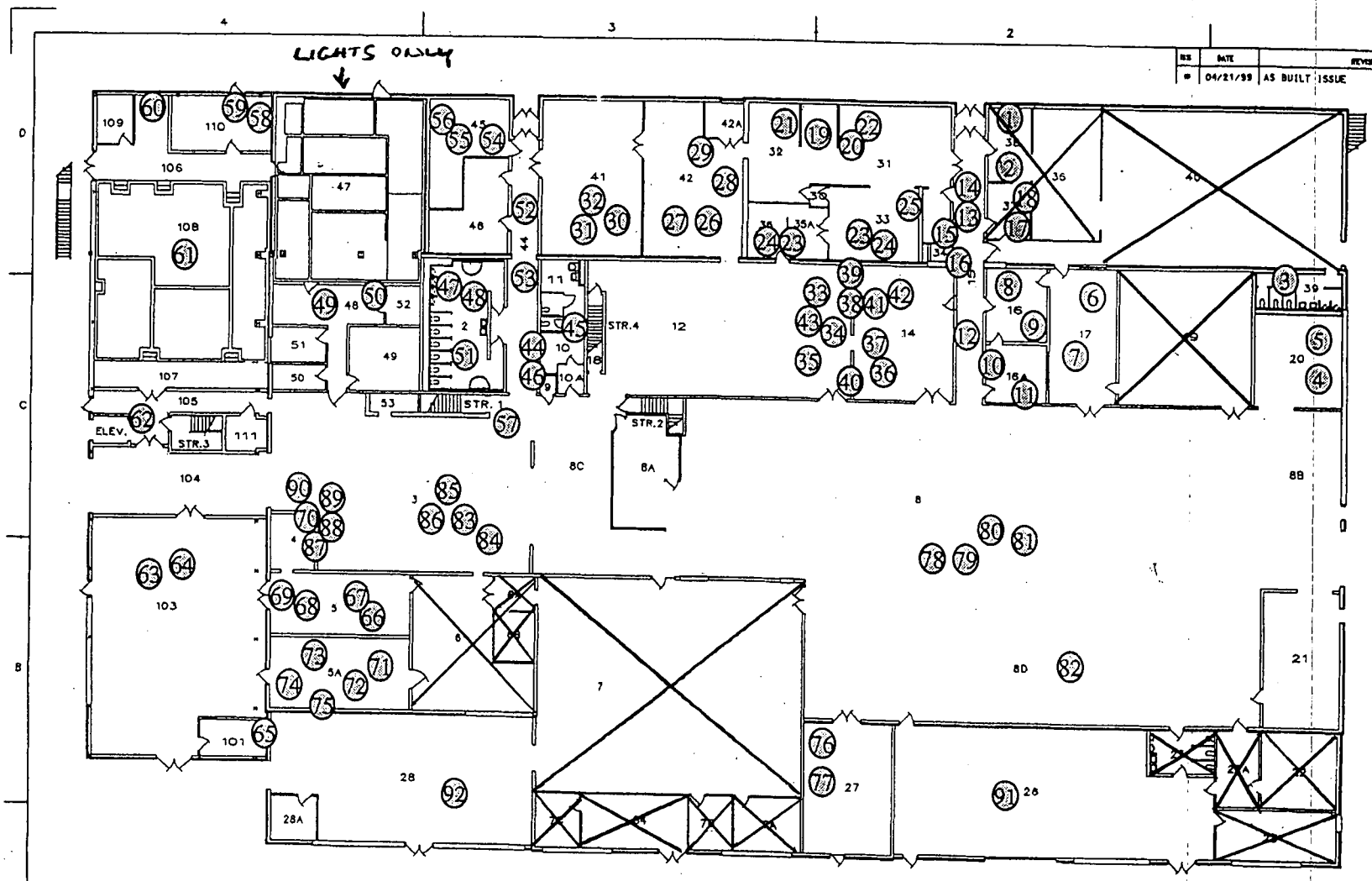
TSI = Thermal Systems Insulation
Misc. = Miscellaneous Material
Surfacing = Surfacing Material
• = This material was not fully accessible for assessment at the time of the inspection.
$^{\alpha}$ = This material was present in the form of debris resulting from previous damage to parent material.

This material is to be deleted from the scope of work

This material is to be added to the scope of work

Asbestos-containing homogeneous area number description:

1 - Cementitious fitting insulation between sections of fiberglass pipe insulation
2 - Preformed-block pipe insulation
3 - Ceiling tile mastic, brown
4 - Floor tile, 9"x9"
5 - Aircell-paper pipe insulation
6 - Transite panel
7 - Floor tile, 12"x12" white with orange and brown streaks pattern
8 - Ceiling tile, 12"x12" two-sizes of small holes and gray fill style
9 - No-drip pipe gum wrap, white
10 - Layered-paper pipe insulation
11 - Spray-applied fireproofing
12 - Mastic associated with floor tile, 12"x12" white with gray and putty smear pattern
13 - Floor tile, 12"x12" white with medium brown streaks pattern
14 - Floor tile, 12"x12" olive with white streaks pattern
15 - Cementitious fitting insulation between sections of styrofoam pipe insulation
16 - Preformed-block tank insulation
17 - No-drip pipe gum wrap, black
18 - Cementitious layer applied to canvas jacket covering fiberglass duct insulation

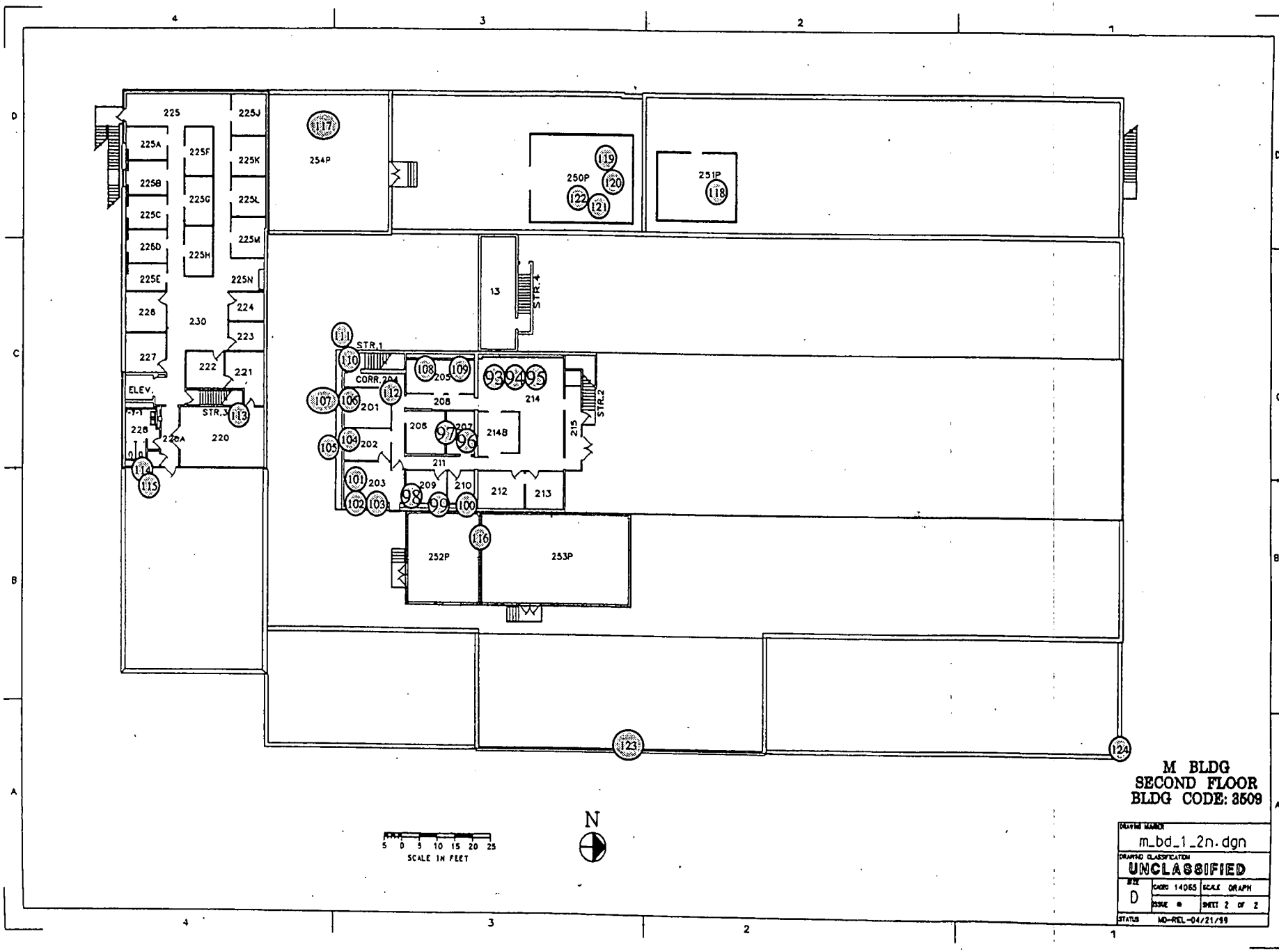


REV	DATE	REVISION	BY	CHKD	ENG	M
#	04/21/99	AS BUILT ISSUE	MR	#	#	

M BLDG
FIRST FLOOR
BLDG CODE: 3509

PROJ ENG	DATE		
PROJ MGR	DATE		

NO REQD	DESCRIPTION/MATERIAL		ITEM
SHEET	7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27		
ISSUE			
SHEET	1 2 3 4 5 6	TITLE	(U) TITLE CLASSIFICATION
ISSUE	*		M BLDG. FLOOR PLANS
PART CLASSIFICATION			
DRAWING CLASSIFICATION	UNCLASSIFIED	SIZE D	DRAWING NUMBER m_bd_1_2n.dgn
DWG TYPE ARH	PROJ	CHECK 14048	SCALE GRAPH
STATUS MD-RLL-04/21/99		ORIGIN MSTATION 95	



M BLDG
SECOND FLOOR
BLDG CODE: 3509

DRAWING NUMBER: m_bd_1_2n.dgn		
DRAWING CLASSIFICATION: UNCLASSIFIED		
SIZE: D	CADD: 14065	SCALE: GRAPH
	ISSUE: 0	SHEET 2 OF 2
STATUS: MO-REL-04/21/99		

Appendix J

Lead Summary/Information

There is no lead summary/information available.

Appendix K

Chemical Summary/Information

HOK/K

PHASE I

ENVIRONMENTAL SITE ASSESSMENT

OF

DOE MOUND, M BUILDING

DOE MOUND

MIAMISBURG, OHIO 45343-3020

EXHIBIT F

BUILDING M WASTE MANAGEMENT INFORMATION: PLATING SHOPS & LITHIUM PROGRAMS

for disposal at an approved off-plant disposal facility. Approximately one drum of waste is generated every three months. Solid trash is placed in dumpsters for disposal. The paint shop is still in operation (Parrett 1991).

3.2. PLATING SHOP

The Mound plating shop started in the M Building in the late 1940s (Figure 3.1). Plating processes and metal purification experiments were performed there. The shop itself consisted of eight to ten 150-gallon plating solution tanks that were handmade from boiler-plate steel (Shawhan 1991). Sulfuric acid anodizing solution wastes and sodium hydroxide cleaning wastes were regenerated on an infrequent basis. The plating solutions were reused and generally recycled; but, when necessary, they were dumped into a large underground tank. The tank consisted of a concrete vault structure west of the original M Building that connected to the plant sanitary sewer. Releases of solutions to the sewer would often affect the bacterial populations of the Old SD Plant (Thomas 1991). The cascade rinse systems also drained to the underground tank.

In 1962, a production plating shop and a general plating shop were installed in the M Building, and the old plating shop was dismantled. During the dismantling process, the plating solutions were removed from the equipment and neutralized. All of the old tanks and equipment were removed. The underground tank was retained and reconnected to the new equipment.

In 1981, a new production plating shop was built on the south end of the M Building. In 1985 or 1986, a new general plating shop was built next to it. The new shops were built to upgrade the old equipment and use modern technology. The old equipment still exists in the M Building, but has been cleaned out. The waste products were drummed and disposed of off-plant through the waste management system.

3.2.1. Process Description

The production plating shop was used to plate weapons parts and to develop weapons reserve products. Processes performed in the production plating shop included chrome, gold, cadmium, copper, nickel and silver plating, passivating, anodizing, and coating.

The plating process began with an etching of the component in hydrochloric acid, followed by a rinse, a nickel chloride strike, a primary and secondary rinse, a hand rinse, a cascade rinse, and a spray rinse using deionized water. The component was then immersed in the plating bath, and the rinses described above were repeated.

The passivating process consisted of a cleansing of the component in a nitric acid solution, followed by a primary and secondary rinse, a hand rinse, a cascade rinse, and a deionized water spray rinse. The object was then immersed in the passivating solution bath using a mixture of sodium dichromate and nitric acid. The bath was equipped with an ultrasound device. The series of rinses was then repeated.

The anodizing process involved cleaning with an Aceta 30 solution, conditioning in a nickel acetate bath, and application of the anodizing dye and a sealer.

The coating process consisted of cleansing the object in an alkaline solution, followed by nitric acid etching and subsequent immersion in an Alodine 1200S solution. This process was then followed by a series of rinses as described for the passivating process.

The general plating shop was used for tooling and fixture plating. Black oxidation was used as the plating process, which consisted of an electrocleaning of the object in an Oakite 190 solution, followed by an etching with hydrochloric acid and two tap-water cascading rinses. The object was then immersed in a caustic black oxide solution and rinsed again with two cascading tap-water rinses.

3.2.2. Waste Generation

Minor process changes have been made in the plating shops since they began operation. The cadmium and silver plating process has been eliminated, and the use of gold cyanide has been eliminated and replaced with gold arsenic. Wastes potentially generated in the plating shops include solutions of chromic acid, copper cyanide, Rochelle salt, sodium cyanide, sodium carbonate, electroless nickel, Woods nickel solution, Alodine waste, electrophoretic waste, dye, nickel acetate, passivating waste, sodium dichromate, acetone, isopropyl alcohol, ethanol, alkaline cleaner, freon, mixed acids (hydrofluoric, hydrochloric, nitric, sulfuric, and phosphoric), Oakite, sodium hydroxide, trichlorethene, sodium hydroxide, and potassium permanganate.

The sodium hydroxide solution and potassium permanganate were neutralized by mixing them together and then drained to the sanitary drains. In the old shop, the solutions went to the large underground tank (under the northwest corner of the M Building) and then to the sanitary sewer. A much smaller sump was installed in the new shops (under the southern end of the M Building), because the volume of waste solutions has been reduced. All other chemical wastes were drummed for pickup by Mound waste management personnel for disposal at an approved off-plant facility. Primary rinse solutions were recycled into the nickel strike bath or plating bath solutions as makeup water. Secondary and hand-rinse water were recycled for use in primary rinses. All other rinse water, including the cascade

rinses and the deionized water spray rinses, was disposed of in the sanitary sewer system. In 1989, the process of disposing of the sodium hydroxide and potassium permanganate solution in the sanitary sewer system was stopped. These solutions are now drummed and picked up by Mound waste management personnel. Currently, only the cascade rinse water drains to the small sump. The old tank is thought to still be connected to the sanitary sewer system as is the new sump. The old tank served as the sampling station for NPDES Outfall 001. The new sump in the production plating shop is currently sampled for that requirement.

Concrete containment pits with curbs are located under the plating shop process equipment to contain any spills or leaks. The pits are segregated so that acid materials do not mix with basic materials. Any material that collects in the pits is removed by pumping it into drums for disposal by Mound waste management. Floor drains within the building are connected to the sanitary sewer system. Administrative and physical controls prevent plating wastes from being disposed of in these drains (Johnson 1991).

When the original plating shop was dismantled in 1962, the plating solutions were neutralized and the solutes precipitated. The resulting wastes included sludges and a supernatant liquid. The liquid was released to the sanitary sewer through the old tank. The sludges were drummed in two 55-gallon steel drums and buried in the small parking lot on the northeast corner of the Main Hill. The old tanks were also buried at this location, as part of the expansion of the parking lot. This burial site is now known as Area F (DOE 1992g).

3.2.3. Vapor Degreaser

The vapor degreaser is in the plating shop in the M Building on the Main Hill (Figure 3.1). Small machined metal parts are cleaned by solvent vapors produced in the chamber of the degreaser. The fully enclosed metal chamber is approximately 3 ft long, 2 ft wide, and 4 ft deep and has a 15-gallon solvent capacity. The wastes produced in this unit are spent solvents. Spent solvents and vapors are retained in the degreaser cleaning chamber. The solvent used in the vapor degreaser is Perclene D. The unit began operating in the late 1970s and is still in use. Spent solvent is transferred to drums and transported to the hazardous waste storage area in Building 72.

3.3. MAINTENANCE SHOP

The Building G garage is used to maintain the automobiles, trucks, buses, and heavy-duty equipment used at Mound (Figure 3.1). The building is approximately 122 ft by 62 ft and is made of structural steel and brick with concrete floors. It has concrete floors and is located in the northwest corner of

of the B Building. Some verbal reports of the earliest operations in the WD Building state that the odors of organic decay made it an area in which it was difficult to work.

Solid wastes from the experiments included animal carcasses and parts that were in some cases preserved in formaldehyde. These are reported to have been packaged and shipped off-plant for disposal (Meyer 1991).

2.15. LITHIUM PROGRAMS

Three projects involving lithium were conducted at Mound. In early 1955, the Livermore Project got under way in the M Building. This program was concerned with the production of lithium deuteride blocks that were pressed and then canned in metal containers. The start-up of the Livermore Project was scheduled for March 1955. In August 1955, 82 kg of lithium deuteride material were pressed, canned, and shipped to the Lawrence Livermore National Laboratory (MCC 1955f).

The second program involving lithium also occurred in the 1950s. This program involved the characterization of the chemical and physical properties of lithium deuteride. This was essentially a laboratory-scale program where experiments involved small quantities of material.

In June 1965, the third lithium project got underway at Mound. This project was concerned with the development of analytical methods for lithium hydride, deuteride, and tritide.

2.15.1. Process Description

All three programs required the use of dry box operations to eliminate oxygen and water vapor. The Livermore Project was located in the M Building; and some analytical activity associated with the third project, involving development of analytical procedures, was conducted there.

The dry box atmosphere was helium. A dewpoint of -77°F was required to prepare lithium material for pressing and canning. The helium gas was treated with a number of reagents that would remove water from the helium gas stream. These reagents included barium oxide, magnesium perchlorate, and lithium hydride. A uranium furnace, operating at 350°C, was also used to remove water vapor and oxygen from the helium process gas. This system was very effective and produced dewpoints as low as -100°F. The uranium furnace proved to be unreliable, because the gasket materials developed helium leaks at high temperatures.

The lithium hydride stability studies involved the use of furnaces capable of high-temperature operation under controlled atmospheres. These studies were also performed in a dry box. The development of analytical methods for lithium hydride, deuteride, and tritide focused on the following analytes: Kjeldahl nitrogen; total hydrogen, deuterium, and tritium; lithium isotopic ratios; carbon, hydroxide, chloride, oxygen, sodium, potassium, and calcium; and free and isotopic lithium (Rhinehammer 1965).

2.15.2. Waste Generation

Compared with the size of the programs, the wastes generated by them were few. Lithium metal, lithium hydride, deuteride, tritide, hydrogen, deuterium, and tritium represent the majority of the waste produced in these studies. The analytical methods development work used methanol, sulfuric and hydrofluoric acids, ethylbromide, Karl Fisher reagent, tin, mercury, hydrochloric acid, sliver nitrate, hydroiodic acid, barium hydroxide, and Nessler reagent.

Based on activity levels, tritium-contaminated aqueous wastes would be treated and disposed of as discussed in the tritium section. Gaseous waste containing hydrogen, tritium, and deuterium would be sent to the effluent removal system to recover tritium.

Lithium metal, lithium hydride, and deuteride are extremely reactive metals and had to be reacted with water to produce a waste that could be stored or undergo further treatment. The disposal of such wastes reportedly took place at Mound. In the mid-1950s, lithium hydride materials were reported as being disposed of by burning in the swampy area along the lower reach of the plant drainage ditch. The highly reactive materials were simply reacted with the water and allowed to burn. This area was referred to as Area C in the CEARP Installation Assessment (DOE 1986). After Building 34 was constructed in the mid-1960s, the disposal activity was moved to the standing water pond at the historic landfill site, known as Area B (DOE 1992g). Any associated contamination at these areas would be dependent on the effectiveness of the isotope separation operation.

2.16. DETONATORS AND EXPLOSIVES

In July 1955, plans and proposals were prepared for a detonator facility to be constructed at Mound. Plans were made to use Building I for explosive manufacturing, and Building B was to be used for inert manufacturing (Brawley 1955). In August 1956, Mound was directed to begin work on detonator assemblies required for the weapons program (MCC 1960). Thus began a long-lived program in the development and production of detonators, igniters, and actuators; in the research, development, and manufacture of pyrotechnic material and devices; and in the surveillance testing of explosive components. These programs involved research and development of plastic, adhesive, and ceramic

There is no current chemical inventory in M Building.

Historically, the following chemicals were used in the plating shop:
Sulfuric acid anodizing solution
Sodium hydroxide cleaning solution
Chrome, gold, cadmium, copper, nickel, and silver plating solutions
Hydrochloric acid
Nickel chloride
Nitric acid
Sodium dichromate
Aceta 30 solution
Nickel acetate
Anodizing dye and sealer
Alodine 1200S solution
Oakite 190 solution
Gold cyanide
Gold arsenic
Perclene D vapor degreaser

The following wastes were generated by the Plating Shop:
Chromic acid
Copper cyanide
Rochelle salt
Sodium cyanide
Sodium carbonate
Electroless nickel
Woods nickel solution
Alodine waste
Electrophoretic waste
Nickel acetate
Passivating waste
Sodium dichromate
Acetone
Isopropyl alcohol
Ethanol
Alkaline cleaner
Freon
Mixed acids –hydrofluoric, nitric, sulfuric, phosphoric
Oakite
Sodium hydroxide
Trichlorethene
Potassium permanganate

FILE

MOUND

INTEROFFICE CORRESPONDENCE

Date: March 4, 1996

From: Matthew W. Uelen, Industrial Hygiene

Subject: M-Building Beryllium Swipe Sampling

To: William H. Whitelow, Building Manager

Activity/ Date

Industrial Hygiene swipe sampled for beryllium in the seven local exhaust ports extending from the ceiling of room# 42 in M building. A single sample (sample# 95103009) was also taken at a dusty floor area within the collection hopper closet. All sampling was completed on 10/30/95 .

The sampling was performed as a follow up to a past beryllium machining operation occurring in this room. The known cutting operation was performed while submerged in deionized water; essentially catching all loose contaminant. According to sampling reports, the equipment and waste sludge was cleaned up and disposed of in August of 1987.

The local exhaust ports were sampled to validate that no other beryllium operations had occurred in the room unbeknownst to Industrial Hygiene. The exhaust ports were the most logical place for residual sediment in the room (besides the collection hopper). Ports# 7 and #9 were not sampled, as they were sealed at the false ceiling level.

Sampling Results

Date	Location	Sample#	Contaminant	Level Detected	Clearance Level
10/30/95	Port# 1	95103001	Beryllium	<0.001 ug/sq. ft.	2 ug/sq. ft
10/30/95	Port# 2	95103002	Beryllium	<0.001 ug/sq. ft	2 ug/sq. ft.
10/30/95	Port# 3	95103003	Beryllium	<0.001 ug/sq. ft.	2 ug/sq. ft
10/30/95	Port# 4	95103004	Beryllium	<0.001 ug/sq. ft.	2 ug/sq. ft
10/30/95	Port# 5	95103005	Beryllium	<0.001 ug/sq. ft	2 ug/sq. ft.
10/30/95	Port# 6	95103006	Beryllium	<0.001 ug/sq. ft.	2 ug/sq. ft
10/30/95	Port# 8	95103007	Beryllium	<0.001 ug/sq. ft.	2 ug/sq. ft
10/30/95	Port# 10	95103008	Beryllium	<0.001 ug/sq. ft.	2 ug/sq. ft
10/30/95	floor	95103009	Beryllium	<0.001 ug/sq. ft.	2 ug/sq. ft
10/30/95	Fld. blank	95102308	Beryllium	<0.01 ug	
10/30/95	Lab blank	95102309	Beryllium	<0.01 ug	

ug/sq. ft = micrograms per square foot

Sampling Methodology

The sampling was accomplished by wiping a 100 square centimeter area using a 37 millimeter cellulose ester filter. Detected levels were converted to square feet for the purpose of comparison with recommended clearance levels. The Mound sampling procedure used, was developed following sampling guidelines set forth in the OSHA Technical Manual (1991) and the AIHA Hygienic Guide Series for Beryllium (1985).

P.O. Box 3000 Miamisburg, Ohio 45343-3000 (513) 865-4020

Recommendations

The local exhaust trunks accumulate into a collection hopper which deposits air contaminants into a 20 gallon drum beneath the hopper. It is recommended that the drum be disposed of and it's contents be sampled by Waste Management. If Waste Management samples show significant levels of beryllium, decontamination or disposal of the hopper may be required. At this time, Industrial Hygiene suspects that it will be unnecessary. Further sampling of Ports# 7, # 9 and the flexible trunk extending from the hopper to the drum will be necessary to clear this room for the City of Miamisburg's use.

Appendix L

Noted Soil Sampling, Vicinity

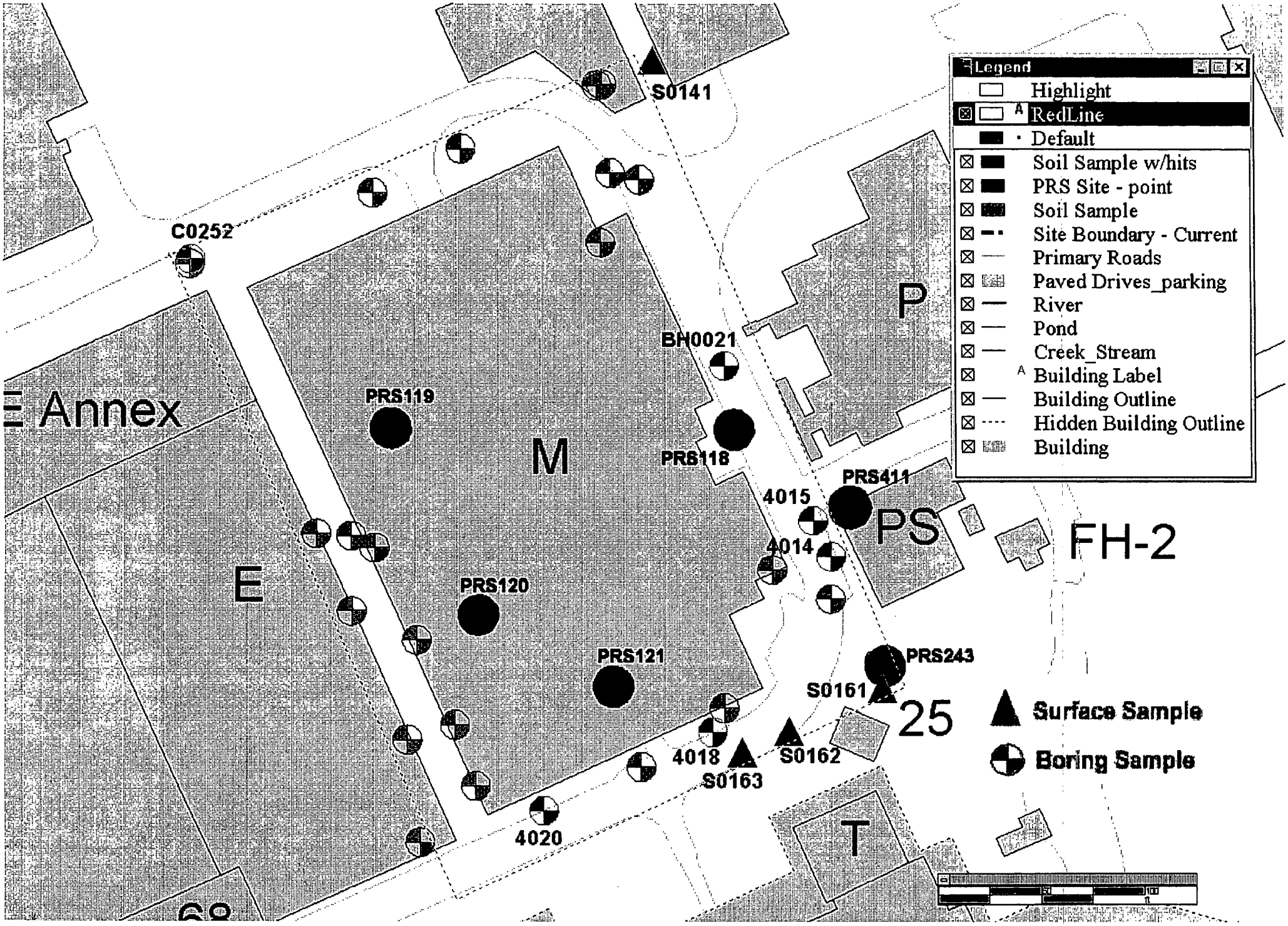
This Appendix L consists of three elements.

Element one is a graphic depiction of soil sampling in and around the subject property. Triangles signify surface sampling and circles denote boring (at dept) samples. The magenta color denotes a detection. A gray colored triangle or circle indicates a non-detection. Sampling detections are assigned a location alpha-numeric identifier.

Element two is a spreadsheet detailing the element one detections. Detections (magenta colored symbols) identified in element one are listed. The first or left-most column entries of the element two spreadsheet can be matched to the element one identifiers. Sample detections that exceed comparison values are highlighted by bold text in the "Measured Value" column of the spreadsheet. Additionally these comparison values are also identified in the "Comments" column of element two.

Element three is a table of comparison values. The constituent of concern can be found in the center column of this table, identified as "parameter name." Comparison values are located to the immediate right of these constituents. The first or left-most column of the element three table contains a single digit number identifying the basis of comparison value. Basis identification is found on the last page of the element three table, and is again, listed here:

Comparison Value Basis Number:	Comparison Value Basis Definition
1	10E-6 Risk-Based Guideline Value
2	Soil Background Value (OU9)
3	Other Criteria, Such as Mound Plant Plutonium/Thorium Protocol
5	MCL Value
6	Guideline Value Based on Hazard Index


Legend
Highlight
RedLine
Default
Soil Sample w/hits
PRS Site - point
Soil Sample
Site Boundary - Current
Primary Roads
Paved Drives_parking
River
Pond
Creek_Stream
Building Label
Building Outline
Hidden Building Outline
Building
S0141
C0252
BH0021
PRS119
PRS118
PRS411
4015
4014
PRS120
PRS121
PRS243
S0161
S0162
4018
S0163
4020
Annex
M
P
PS
FH-2
E
25
T
Surface Sample
Boring Sample

Location_n	Sample_Id	Location_typ	Collection_date	Media	Value_name	Measured_va	Value_uni	Detectio	Chem_class	Start	End_d	Deptl	Cas_number	Lab_	Project_code	Date	Comments
4014	4014-0002.5	Borehole	19940421	Other	1,1,1-Trichloroethane	5263.2	PPB		ORVOA	2.5	2.5	FT	71-55-6		SVROU2		
4014	4014-0002.5	Borehole	19940421	Other	1,1-Dichloroethane	12098.8	PPB		ORVOA	2.5	2.5	FT	75-34-3		SVROU2		
4014	4014-0002.5	Borehole	19940421	Other	1,2-cis-Dichloroethene	5808.1	PPB		ORVOA	2.5	2.5	FT	156-59-2		SVROU2		
4014	4014-0002.5	Borehole	19940421	Other	1,2-trans-Dichloroethene	6818.2	PPB		ORVOA	2.5	2.5	FT	156-60-5		SVROU2		
4014	4014-0002.5	Borehole	19940421	Other	Toluene	789.5	PPB		ORVOA	2.5	2.5	FT	108-88-3		SVROU2		
4014	4014-0002.5	Borehole	19940421	Other	Total VOC's	42027.7	PPB		ORVOA	2.5	2.5	FT	TVOC		SVROU2		
4014	4014-0002.5	Borehole	19940421	Other	Trichlorofluoromethane	11250	PPB		ORVOA	2.5	2.5	FT	75-69-4		SVROU2		
4014	4014-0005.0	Borehole	19940421	Other	Total VOC's	8394.5	PPB		ORVOA	5	5	FT	TVOC		SVROU2		
4014	4014-0005.0	Borehole	19940421	Other	Trichlorofluoromethane	5892.9	PPB		ORVOA	5	5	FT	75-69-4		SVROU2		
4015	4015-0005.0	Borehole	19940425	Other	Total VOC's	5844.4	PPB		ORVOA	5	5	FT	TVOC		SVROU2		
4015	4015-0005.0	Borehole	19940425	Other	Trichlorofluoromethane	3571.4	PPB		ORVOA	5	5	FT	75-69-4		SVROU2		
4015	4015-0007.5	Borehole	19940425	Other	1,1,1-Trichloroethane	2280.7	PPB		ORVOA	7.5	7.5	FT	71-55-6		SVROU2		
4015	4015-0007.5	Borehole	19940425	Other	1,1-Dichloroethane	3456.8	PPB		ORVOA	7.5	7.5	FT	75-34-3		SVROU2		
4015	4015-0007.5	Borehole	19940425	Other	1,2-cis-Dichloroethene	2020.2	PPB		ORVOA	7.5	7.5	FT	156-59-2		SVROU2		
4015	4015-0007.5	Borehole	19940425	Other	Total VOC's	26449.6	PPB		ORVOA	7.5	7.5	FT	TVOC		SVROU2		
4015	4015-0007.5	Borehole	19940425	Other	Trichlorofluoromethane	15892.9	PPB		ORVOA	7.5	7.5	FT	75-69-4		SVROU2		
4015	4015-0009.2	Borehole	19940425	Other	1,1-Dichloroethane	1975.3	PPB		ORVOA	9.2	9.2	FT	75-34-3		SVROU2		
4015	4015-0009.2	Borehole	19940425	Other	Total VOC's	12566.9	PPB		ORVOA	9.2	9.2	FT	TVOC		SVROU2		
4015	4015-0009.2	Borehole	19940425	Other	Trichlorofluoromethane	8571.4	PPB		ORVOA	9.2	9.2	FT	75-69-4		SVROU2		
4018	4018-0002.5	Borehole	19940428	Other	Toluene	526.3	PPB		ORVOA	2.5	2.5	FT	108-88-3		SVROU2		
4018	4018-0002.5	Borehole	19940428	Other	Total VOC's	4812	PPB		ORVOA	2.5	2.5	FT	TVOC		SVROU2		
4018	4018-0002.5	Borehole	19940428	Other	Trichlorofluoromethane	4285.7	PPB		ORVOA	2.5	2.5	FT	75-69-4		SVROU2		
4018	4018-0005.0	Borehole	19940428	Other	Tetrachloroethene	3235.3	PPB		ORVOA	5	5	FT	127-18-4		SVROU2		
4018	4018-0005.0	Borehole	19940428	Other	Total VOC's	3761.6	PPB		ORVOA	5	5	FT	TVOC		SVROU2		
4020	4020-0002.5	Borehole	19940428	Other	1,1,1-Trichloroethane	3333.3	PPB		ORVOA	2.5	2.5	FT	71-55-6		SVROU2		
4020	4020-0002.5	Borehole	19940428	Other	1,2-cis-Dichloroethene	3787.9	PPB		ORVOA	2.5	2.5	FT	156-59-2		SVROU2		
4020	4020-0002.5	Borehole	19940428	Other	1,2-trans-Dichloroethene	4292.9	PPB		ORVOA	2.5	2.5	FT	156-60-5		SVROU2		
4020	4020-0002.5	Borehole	19940428	Other	Toluene	1052.6	PPB		ORVOA	2.5	2.5	FT	108-88-3		SVROU2		
4020	4020-0002.5	Borehole	19940428	Other	Total VOC's	34966.8	PPB		ORVOA	2.5	2.5	FT	TVOC		SVROU2		
4020	4020-0002.5	Borehole	19940428	Other	Trichlorofluoromethane	22500	PPB		ORVOA	2.5	2.5	FT	75-69-4		SVROU2		
4020	4020-0005.0	Borehole	19940428	Other	Toluene	789.5	PPB		ORVOA	5	5	FT	108-88-3		SVROU2		
4020	4020-0005.0	Borehole	19940428	Other	Total VOC's	9730.9	PPB		ORVOA	5	5	FT	TVOC		SVROU2		
4020	4020-0005.0	Borehole	19940428	Other	Trichlorofluoromethane	3750	PPB		ORVOA	5	5	FT	75-69-4		SVROU2		
4020	4020-0007.5	Borehole	19940428	Other	1,2-cis-Dichloroethene	1767.7	PPB		ORVOA	7.5	7.5	FT	156-59-2		SVROU2		
4020	4020-0007.5	Borehole	19940428	Other	Toluene	789.5	PPB		ORVOA	7.5	7.5	FT	108-88-3		SVROU2		
4020	4020-0007.5	Borehole	19940428	Other	Total VOC's	13684.5	PPB		ORVOA	7.5	7.5	FT	TVOC		SVROU2		
4020	4020-0007.5	Borehole	19940428	Other	Trichlorofluoromethane	9107.1	PPB		ORVOA	7.5	7.5	FT	75-69-4		SVROU2		
4020	4020-0012.5	Borehole	19940428	Other	1,1,1-Trichloroethane	1403.5	PPB		ORVOA	12.5	12.5	FT	71-55-6		SVROU2		
4020	4020-0012.5	Borehole	19940428	Other	Total VOC's	7832.1	PPB		ORVOA	12.5	12.5	FT	TVOC		SVROU2		
4020	4020-0012.5	Borehole	19940428	Other	Trichlorofluoromethane	6428.6	PPB		ORVOA	12.5	12.5	FT	75-69-4		SVROU2		
4020	4020-0015.0	Borehole	19940428	Other	Total VOC's	8885.5	PPB		ORVOA	15	15	FT	TVOC		SVROU2		
4020	4020-0015.0	Borehole	19940428	Other	Trichlorofluoromethane	5714.3	PPB		ORVOA	15	15	FT	75-69-4		SVROU2		
4020	4020-0017.5	Borehole	19940428	Other	1,2-cis-Dichloroethene	2777.8	PPB		ORVOA	17.5	17.5	FT	156-59-2		SVROU2		
4020	4020-0017.5	Borehole	19940428	Other	Total VOC's	10333.7	PPB		ORVOA	17.5	17.5	FT	TVOC		SVROU2		
4020	4020-0017.5	Borehole	19940428	Other	Trichlorofluoromethane	5535.7	PPB		ORVOA	17.5	17.5	FT	75-69-4		SVROU2		
BH0021	93101423	Borehole	19931014	Soil	Plutonium-238	**26**	PCi/G		RAD	0	0	FT	13981-16-3		SCRDATA		Exceeds soil 10-6 GV. Exceeds background value. Exceeds other criteria.
BH0021	93101424	Borehole	19931014	Soil	Plutonium-238	**29**	PCi/G		RAD	0	0	FT	13981-16-3		SCRDATA		Exceeds soil 10-6 GV. Exceeds background value. Exceeds other criteria.
C0252	8400	Borehole	19841201	Soil	Plutonium-238	0.13	PCi/G	0.01	RAD	3	3	FT	13981-16-3		RSS		
S0141	6179	Surface loca	19840801	Soil	Plutonium-238	**0.68**	PCi/G	0.01	RAD	0	0	FT	13981-16-3		RSS		Exceeds background value.
S0161	3093	Surface loca	19831001	Soil	Plutonium-238	**1.19**	PCi/G	0.01	RAD	0	0	FT	13981-16-3		RSS		Exceeds background value.
S0162	6206	Surface loca	19840801	Soil	Plutonium-238	**0.62**	PCi/G	0.01	RAD	0	0	FT	13981-16-3		RSS		Exceeds background value.
S0163	6207	Surface loca	19840801	Soil	Plutonium-238	**0.34**	PCi/G	0.01	RAD	0	0	FT	13981-16-3		RSS		Exceeds background value.

comp_no	par_code	parameter name	comparison value	units
1	7440-41-7	Beryllium	7.00E-01	MG/KG
1	7440-43-9	Cadmium	5.00E+04	MG/KG
1	7440-47-3	Chromium	7.50E+03	MG/KG
1	121-82-4	RDX	2.70E+01	UG/KG
1	72-55-9	4,4'-DDE	9.00E+00	MG/KG
1	50-29-3	4,4'-DDT	9.00E+00	MG/KG
1	12672-29-6	Aroclor-1248	3.85E-01	MG/KG
1	11096-82-5	Aroclor-1260	3.85E-01	MG/KG
1	319-85-7	Beta-BHC	1.65E+00	MG/KG
1	60-57-1	Dieldrin	1.85E-01	MG/KG
1	56-55-3	Benzo(a)anthracene	4.10E+00	MG/KG
1	50-32-8	Benzo(a)pyrene	4.10E-01	MG/KG
1	205-99-2	Benzo(b)fluoranthene	4.10E+00	MG/KG
1	207-08-9	Benzo(k)fluoranthene	4.10E+01	MG/KG
1	117-81-7	Bis(2-ethylhexyl)phthalate	2.15E+02	MG/KG
1	218-01-9	Chrysene	4.10E+02	MG/KG
1	53-70-3	Dibenz(a,h)anthracene	4.10E-01	MG/KG
1	193-39-5	Indeno(1,2,3-cd)pyrene	4.10E+00	MG/KG
1	78-59-1	Isophorone	3.15E+03	MG/KG
1	86-30-6	N-Nitrosodiphenylamine	6.00E+02	MG/KG
1	87-86-5	Pentachlorophenol	2.50E+01	MG/KG
1	107-06-2	1,2-Dichloroethane	1.10E+01	MG/KG
1	71-43-2	Benzene	3.20E+01	MG/KG
1	75-27-4	Bromodichloromethane	4.80E+01	MG/KG
1	75-25-2	Bromoform	3.75E+02	MG/KG
1	56-23-5	Carbon Tetrachloride	1.20E+01	MG/KG
1	67-66-3	Chloroform	1.55E+01	MG/KG
1	124-48-1	Dibromochloromethane	3.55E+01	MG/KG
1	75-09-2	Dichloromethane	3.95E+02	MG/KG
1	79-01-6	Trichloroethene	1.25E+02	MG/KG
1	AC-227	Actinium-227	1.00E+00	PCI/G
1	14596-10-2	Americium-241	4.95E+00	PCI/G
1	13982-38-2	Bismuth-207	1.75E-01	PCI/G
1	BI-207	Bismuth-207	1.75E-01	PCI/G
1	10045-97-3	Cesium-137	4.60E-01	PCI/G
1	10198-40-0	Cobalt-60	1.00E-01	PCI/G
1	13981-16-3	Plutonium-238	5.50E+00	PCI/G
1	15117-48-3	Plutonium-239	5.50E+00	PCI/G
1	PU239/240	Plutonium-240	5.50E+00	PCI/G
1	13982-63-3	Radium-226	1.40E-01	PCI/G
1	10098-97-2	Strontium-90	3.00E+00	PCI/G
1	14274-82-9	Thorium-228	8.50E-01	PCI/G
1	14269-63-7	Thorium-230	4.40E+01	PCI/G
1	7440-29-1	Thorium-232	5.00E+01	PCI/G
1	10028-17-8	Tritium	2.35E+04	PCI/G
1	U-233	Uranium-233	3.70E+01	PCI/G
1	13966-29-5	Uranium-234	3.75E+01	PCI/G
1	15117-96-1	Uranium-235	3.35E+00	PCI/G
1	24678-82-8	Uranium-238	1.10E+01	PCI/G
2	7429-90-5	Aluminum	19000	MG/KG

comp_no	par_code	parameter name	comparison value	units
2	7440-38-2	Arsenic	8.6	MG/KG
2	7440-39-3	Barium	180	MG/KG
2	7440-69-9	Bismuth	ND	MG/KG
2	7440-41-7	Beryllium	1.3	MG/KG
2	7440-43-9	Cadmium	2.1	MG/KG
2	7440-70-2	Calcium	310000	MG/KG
2	7440-47-3	Chromium	20	MG/KG
2	7440-48-4	Cobalt	19	MG/KG
2	7440-50-8	Copper	26	MG/KG
2	57-12-5	Cyanide	ND	MG/KG
2	7439-89-6	Iron	35000	MG/KG
2	7439-92-1	Lead	48	MG/KG
2	7439-93-2	Lithium	26	MG/KG
2	7439-95-4	Magnesium	40000	MG/KG
2	7439-96-5	Manganese	1400	MG/KG
2	7439-97-6	Mercury	ND	MG/KG
2	7439-98-7	Molybdenum	27	MG/KG
2	7440-02-0	Nickel	32	MG/KG
2	7440-09-7	Potassium	1900	MG/KG
2	7440-22-4	Silver	1.7	MG/KG
2	7782-49-2	Selenium	ND	MG/KG
2	7440-23-5	Sodium	240	MG/KG
2	7440-28-0	Thallium	0.46	MG/KG
2	7440-31-5	Tin	20	MG/KG
2	7440-62-2	Vanadium	25	MG/KG
2	7440-66-6	Zinc	140	MG/KG
2	72-54-8	4,4'-DDD	4.2	MG/KG
2	72-55-9	4,4'-DDE	4.3	MG/KG
2	50-29-3	4,4'-DDT	13	MG/KG
2	309-00-2	Aldrin	ND	MG/KG
2	5103-71-9	Alpha Chlordane	ND	MG/KG
2	319-84-6	Alpha-BHC	ND	MG/KG
2	12672-29-6	Aroclor-1248	ND	MG/KG
2	11097-69-1	Aroclor-1254	58	MG/KG
2	11096-82-5	Aroclor-1260	ND	MG/KG
2	319-85-7	Beta-BHC	ND	MG/KG
2	60-57-1	Dieldrin	ND	MG/KG
2	959-98-8	Endosulfan I	ND	MG/KG
2	1031-07-8	Endosulfan Sulfate	ND	MG/KG
2	72-20-8	Endrin	ND	MG/KG
2	7421-93-4	Endrin Aldehyde	ND	MG/KG
2	53494-70-5	Endrin Ketone	ND	MG/KG
2	5103-74-2	Gamma Chlordane	ND	MG/KG
2	58-89-9	Gamma-BHC (Lindane)	ND	MG/KG
2	76-44-8	Heptachlor	ND	MG/KG
2	1024-57-3	Heptachlor Epoxide	ND	MG/KG
2	72-43-5	Methoxychlor	30	MG/KG
2	77-47-4	Hexachlorocyclopentadiene	ND	MG/KG
2	14596-10-2	Americium-241	ND	MG/KG
2	13982-38-2	Bismuth-207	ND	MG/KG

comp_no	par_code	parameter name	comparison value	units
2	BI-207	Bismuth-207	ND	MG/KG
2	BI-210M	Bismuth-210m	ND	MG/KG
2	10045-97-3	Cesium-137	0.42	PCI/G
2	13981-16-3	Plutonium-238	0.13	PCI/G
2	13966-00-2	Potassium-40	37	PCI/G
2	13982-63-3	Radium-226	2	PCI/G
2	10098-97-2	Strontium-90	0.72	PCI/G
2	14274-82-9	Thorium-228	1.5	PCI/G
2	14269-63-7	Thorium-230	1.9	PCI/G
2	7440-29-1	Thorium-232	1.4	PCI/G
2	10028-17-8	Tritium	1.6	PCI/G
2	13966-29-5	Uranium-234	1.1	PCI/G
2	15117-96-1	Uranium-235	0.11	PCI/G
2	24678-82-8	Uranium-238	1.2	PCI/G
3	7439-92-1	Lead	400	MG/KG
3	13982-63-3	Radium-226	5	PCI/G
3	13981-16-3	Plutonium-238	25	PCI/G
3	7440-29-1	Thorium-232	5	PCI/G
5	7440-36-0	Antimony	0.0006	MG/L
5	7440-38-2	Arsenic	0.05	MG/L
5	7440-39-3	Barium	2	MG/L
5	7440-41-7	Beryllium	0.004	MG/L
5	7440-43-9	Cadmium	0.005	MG/L
5	7440-47-3	Chromium	0.1	MG/L
5	7440-50-8	Copper	1.3	MG/L
5	57-12-5	Cyanide	0.2	MG/L
5	7439-92-1	Lead	0.015	MG/L
5	7439-97-6	Mercury	0.002	MG/L
5	7440-02-0	Nickel	0.1	MG/L
5	7782-49-2	Selenium	0.05	MG/L
5	7440-28-0	Thallium	0.002	MG/L
5	16984-48-8	Flouride	4	MG/L
5	NO3	Nitrate	10	MG/L
5	NO2	Nitrite	1	MG/L
5	57-74-9	Chlordane	0.002	MG/L
5	72-20-8	Endrin	0.002	MG/L
5	76-44-8	Heptachlor	0.0004	MG/L
5	1024-57-3	Heptachlor Epoxide	0.0002	MG/L
5	72-43-5	Methoxychlor	0.04	MG/L
5	8001-35-2	Toxaphene	0.003	MG/L
5	120-82-1	1,2,4-Trichlorobenzene	0.07	MG/L
5	95-95-4	2,4,5-Trichlorophenol	0.05	MG/L
5	50-32-8	Benzo(a)pyrene	0.002	MG/L
5	118-74-1	Hexachlorobenzene	0.001	MG/L
5	77-47-4	Hexachlorocyclopentadiene	0.05	MG/L
5	87-86-5	Pentachlorophenol	0.001	MG/L
5	71-55-6	1,1,1-Trichloroethane	0.2	MG/L
5	79-00-5	1,1,2-Trichloroethane	0.005	MG/L
5	75-35-4	1,1-Dichloroethene	0.007	MG/L
5	156-59-2	1,2-cis-Dichloroethene	0.07	MG/L

comp_no	par_code	parameter name	comparison value	units
5	107-06-2	1,2-Dichloroethane	0.005	MG/L
5	78-87-5	1,2-Dichloropropane	0.005	MG/L
5	106-46-7	1,4-Dichlorobenzene	0.075	MG/L
5	108-90-7	Chlorobenzene	0.1	MG/L
5	96-12-8	Dibromochloropropane	0.0002	MG/L
5	106-93-4	1,2-Dibromoethane	0.00005	MG/L
5	95-50-1	1,2-Dichlorobenzene	0.6	MG/L
5	75-09-2	Dichloromethane (Methylene Chloride)	0.005	MG/L
5	88-85-7	Dinoseb	0.007	MG/L
5	1746-01-6	Dioxin	0.00000003	MG/L
5	94-75-7	2,4-D	0.07	MG/L
5	156-60-5	1,2-trans-Dichloroethene	0.01	MG/L
5	71-43-2	Benzene	0.005	MG/L
5	75-27-4	Bromodichloromethane	0.008	MG/L
5	75-25-2	Bromoform	0.008	MG/L
5	56-23-5	Carbon Tetrachloride	0.005	MG/L
5	67-66-3	Chloroform	0.008	MG/L
5	100-41-4	Ethylbenzene	0.07	MG/L
5	58-89-9	Gamma-BHC (Lindane)	0.0002	MG/L
5	117-81-7	bis(2-ethylhexyl)phthalate	0.006	MG/L
5	100-42-5	Styrene	0.1	MG/L
5	127-18-4	Tetrachloroethene	0.005	MG/L
5	108-88-3	Toluene	1	MG/L
5	79-01-6	Trichloroethene	0.005	MG/L
5	75-01-4	Vinyl Chloride	0.002	MG/L
5	1330-20-7	Xylenes, Total	10	MG/L
5	AC-227	Actinium-227	0.4	PCI/L
5	14596-10-2	Americium-241	1.2	PCI/L
5	13982-38-2	Bismuth-207	1200	PCI/L
5	10045-97-3	Cesium-137	120	PCI/L
5	10198-40-0	Cobalt-60	400	PCI/L
5	13981-16-3	Plutonium-238	1.6	PCI/L
5	13982-63-3	Radium-226	4	PCI/L
5	10098-97-2	Strontium-90	40	PCI/L
5	14274-82-9	Thorium-228	16	PCI/L
5	14269-63-7	Thorium-230	12	PCI/L
5	7440-29-1	Thorium-232	2	PCI/L
5	10028-17-8	Tritium	20000	PCI/L
5	U-233	Uranium-233	20	PCI/L
5	13966-29-5	Uranium-234	20	PCI/L
5	15117-96-1	Uranium-235	24	PCI/L
5	24678-82-8	Uranium-238	24	PCI/L
6	7440-47-3	Chromium	1.10E+03	MG/KG
6	7440-36-0	Antimony	8.50E+01	MG/KG
6	7440-38-2	Arsenic	6.40E+01	MG/KG
6	7440-39-3	Barium	1.50E+04	MG/KG
6	7440-41-7	Beryllium	1.10E+03	MG/KG
6	7440-43-9	Cadmium	2.10E+02	MG/KG
6	57-12-5	Cyanide	4.30E+03	MG/KG
6	7439-96-5	Manganese	2.70E+04	MG/KG

comp_no	par_code	parameter name	comparison value	units
6	7439-97-6	Mercury	6.40E+01	MG/KG
6	7440-02-0	Nickel	4.30E+03	MG/KG
6	7440-22-4	Silver	1.10E+03	MG/KG
6	7440-62-2	Vanadium	1.50E+03	MG/KG
6	7440-66-6	Zinc	6.40E+04	MG/KG
6	2691-41-0	HMX	1.10E+04	UG/KG
6	121-82-4	RDX	6.40E+04	UG/KG
6	50-29-3	4,4'-DDT	1.10E+02	MG/KG
6	11097-69-1	Aroclor-1254	4.30E+00	MG/KG
6	60-57-1	Dieldrin	1.10E+01	MG/KG
6	106-44-5	4-Methylphenol	1.10E+03	MG/KG
6	120-12-7	Anthracene	6.40E+04	MG/KG
6	65-85-0	Benzoic Acid	8.50E+05	MG/KG
6	117-81-7	Bis(2-ethylhexyl)phthalate	4.30E+03	MG/KG
6	85-68-7	Butyl Benzyl Phthalate	4.30E+04	MG/KG
6	84-74-2	Di-n-butyl Phthalate	2.10E+04	MG/KG
6	117-84-0	Di-n-octyl Phthalate	4.30E+03	MG/KG
6	206-44-0	Fluoranthene	8.50E+03	MG/KG
6	78-59-1	Isophorone	4.30E+04	MG/KG
6	87-86-5	Pentachlorophenol	6.40E+03	MG/KG
6	108-95-2	Phenol	1.30E+05	MG/KG
6	129-00-0	Pyrene	6.40E+03	MG/KG
6	75-34-3	1,1-Dichloroethane	7.80E+00	MG/KG
6	156-60-5	1,2-trans-Dichloroethene	4.30E+03	MG/KG
6	108-10-1	2-Methyl-4-pentanone	7.00E+02	MG/KG
6	67-64-1	Acetone	2.10E+04	MG/KG
6	75-27-4	Bromodichloromethane	4.30E+03	MG/KG
6	75-25-2	Bromoform	4.30E+03	MG/KG
6	75-15-0	Carbon Disulfide	2.80E+02	MG/KG
6	56-23-5	Carbon Tetrachloride	1.50E+02	MG/KG
6	75-00-3	Chloroethane	1.60E+02	MG/KG
6	67-66-3	Chloroform	2.10E+03	MG/KG
6	124-48-1	Dibromochloromethane	4.30E+03	MG/KG
6	75-09-2	Dichloromethane	1.00E+03	MG/KG
6	100-41-4	Ethylbenzene	4.80E-01	MG/KG
6	110-54-3	Hexane	9.10E+01	MG/KG
6	127-18-4	Tetrachloroethene	2.10E+03	MG/KG
6	108-88-3	Toluene	2.50E+02	MG/KG
6	75-69-4	Trichlorofluoromethane	7.30E+02	MG/KG
6	1330-20-7	Xylenes, Total	4.30E+05	MG/KG
6	78-93-3	2-Butanone	9.30E+03	MG/KG

1 Value is 10-6 Risk-Based Guide Value
2 Value is OU9 Soil Background Value
3 Value is other criteria, I.e. 5 pCi/g for certain radionuclides
25 pCi/g plutonium
5 Value is MCL
6 Value is the Guide Value based on the hazard index

Appendix M

Occurrence Reports

Occurrence Report

All Other Facilities

(Name of Facility)

Unknown

(Facility Function)

Mound Plant EG&G Mound Applied Technologies

(Laboratory, Site, or Organization)

Name: CASTLEBERRY, V. E.
Title: DIRECTOR ENGINEERING **Telephone No.:** (513) 865-3458

(Facility Manager/Designee)

Name: MULLINS, GLENN
Title: MFG. SUPERVISOR **Telephone No.:** (513) 865-3700

(Originator/Transmitter)

Name: **Date:**

(Authorized Classifier (AC))

1. Occurrence Report Number: ALO-DA-EGGM-EGGMAT04-1990-0012

M-BLDG. FIRE PROTECTION SYSTEM FAILURE Condition Subset (E) Off-Normal Occurrence Subset (A)

2. Report Type and Date: Final

	Date	Time
Notification:	12/28/1990	
Initial Update:	01/07/1991	
Latest Update:	01/07/1991	
Final:	01/11/1991	

3. Occurrence Category: Off-Normal

4. Number of Occurrences: 1 **Original OR:**

5. Division or Project: EGG&G MOUND

6. Secretarial Office: DP - Defense Programs

7. System, Bldg., or Equipment: M BUILDING

8. UCNI?: No

9. Plant Area: MAIN MANUFACTURING A

10. Date and Time Discovered: 12/28/1990 01:17 (ETZ)

11. Date and Time Categorized: 12/28/1990 08:45 (ETZ)

12. DOE Notification:

13. Other Notifications:

14. Subject or Title of Occurrence:

M-BLDG. FIRE PROTECTION SYSTEM FAILURE Condition Subset (E) Off-Normal Occurrence Subset (A)

15. Nature of Occurrence:

16. Description of Occurrence:

MOISTURE COLLECTED IN A "DRY PIPE" SPRINKLER SYSTEM WHICH FROZE AND RUPTURED THE SYSTEM CAUSING ACTIVATION (OUTSIDE OF BUILDING). THERE WAS NO SECONDARY DAMAGE.

17. Operating Conditions of Facility at Time of Occurrence:

COLD WINTER WEATHER.

18. Activity Category:

- Unknown

19. Immediate Actions Taken and Results:

THE SYSTEM WAS SHUTDOWN AND REPAIR IS IN PROCESS.

20. Direct Cause:

9) Other
~. Other Problems Reported Prior to 04/01/91

21. Contributing Cause(s):

3) Personnel Error
~. Personnel Errors Reported Prior to 04/01/91

22. Root Cause:

4) Design Problem
~. Design Problems Reported Prior to 04/01/91

23. Description of Cause:

UPON EXAMINATION OF THE NON-THREADED TYPE FITTINGS WHICH LEAKED, NO MECHANICAL DAMAGE WAS FOUND. HOWEVER, CORROSION WAS FOUND INSIDE OF ONE FITTING ON A SEALING SURFACE. THE MOST LIKELY CAUSE WAS A COMBINATION OF EXTERNAL AND INTERNAL CONDENSATION, POOR SEAL SURFACE CONDITION AND THE BELOW AND ABOVE FREEZING TEMPERATURES ENCOUNTERED THAT DAY. FREEZING AND THAWING TEMPERATURES WITH CONDENSATE INSIDE AND OUTSIDE OF THE DRY PIPE SYSTEM WHICH RESULTED IN ACTIVATION. FIRE PROTECTION PERSONNEL MAY HAVE BEEN LESS ATTENTIVE TO DRAINING THE DRY PIPE SYSTEM LINE RESULTING IN SMALL AMOUNTS OF WATER REMAINING IN THE SYSTEM AND VULNERABLE TO FREEZING. THE ROOT CAUSE CAN BE ATTRIBUTED TO A COMBINATION OF FACTORS SUCH AS THE NON-THREADED PIPE FITTINGS, CONDENSATE INSIDE AND OUTSIDE OF THE PIPING SYSTEM AND THE FREEZING AND THAWING WINTER WEATHER. CORROSION WAS FOUND INSIDE ONE FITTING ON THE SEALING SURFACE UNDER THE RUBBER GASKET WHICH GREATLY REDUCED THE SEALING ABILITY OF THE FITTING. BY DESIGN, THE NON THREADED FITTINGS HAVE MORE INTERNAL CAVITIES WHICH CAN RETAIN MORE CONDENSATE THAN THREADED FITTINGS. THE INTERNAL DESIGN OF THE FITTINGS ALLOWS MORE OPPORTUNITY FOR CONDENSATE TO ACCUMULATE AS WELL AS LESS THAN ADEQUATE DRAINING GREATLY INCREASED CHANCES FOR FAILURE IN WINTER WEATHER. CORROSION FOUND ON THE INTERNAL SEALING SURFACE IN ALL PROBABILITY PROMPTED THE FAILURE.

24. Evaluation (by Facility Manager/Designee):

THE IMPACT OF THIS OCCURRENCE TO THE PLANT WAS MINIMAL AND REPAIR WAS COMPLETED THE SAME DAY. REPLACEMENT OF THE NON- THREADED FITTINGS WITH THREADED FITTINGS WILL GREATLY INCREASE THE INTEGRITY OF THE SYSTEM AS WELL AS PREVENT REOCCURRENCE.

25. Is Further Evaluation Required?: No

26. Corrective Actions

(* = Date added/revised since final report was approved.)

1.

MAINTENANCE PERSONNEL RELACED DEFECTIVE PIPEFITTINGS AND FIRE PROTECTION PERSONNEL REACTIVATED SYSTEM 12/28/90.	
Target Completion Date: 12/28/1990	**Completion Date:** 12/28/1990

27. Impact on Environment, Safety and Health:

NO ENVIRONMENTAL, SAFETY AND HEALTH IMPACT.

28. Programmatic Impact:

NO PROGRAMMATIC IMPACT.

29. Impact on Codes and Standards:

30. Lessons Learned:

THREADED PIPE FITTING PROVIDES A STRONGER SYSTEM AS WELL AS REDUCE INTERNAL AND EXTERNAL AREAS WHICH CONDENSATE CAN COLLECT. ADEQUATE CONDENSATE DRAINING MUST BE PERFORMED AND PERIODICALLY PROPER DRAINING PROCEDURES MUST BE RE-ENFORCED BY MANAGEMENT.

31. Similar Occurrence Report Numbers:

32. User-defined Field #1:

33. User-defined Field #2:

34. DOE Facility Representative Input:

35. DOE Program Manager Input:

36. Approvals:

Approved by: CASTLEBERRY, V. E., Facility Manager/Designee
Date: 01/08/1991
Telephone No.: (513) 865-3458

Approved by: ILLEGIBLE, Facility Representative/Designee
Date: 01/08/1991
Telephone No.:

Approved by: ILLEGIBLE, Program Manager/Designee
Date: 01/11/1991
Telephone No.:

Occurrence Report

All Other Facilities

(Name of Facility)

Balance-of-Plant

(Facility Function)

Mound Plant EG&G Mound Applied Technologies

(Laboratory, Site, or Organization)

Name: KOEHLER, KATHY G
Title: SITE GROUNDS MANAGER **Telephone No.:** (513) 865-4886

(Facility Manager/Designee)

Name: Kathy G. Koehler
Title: Site Grounds Manager **Telephone No.:** (513) 865-4886

(Originator/Transmitter)

Name: R. A. Mahan **Date:** 04/05/1995

(Authorized Classifier (AC))

1. Occurrence Report Number: OH-MB-EGGM-EGGMAT04-1995-0002

M Building - Loss of Control of CRD Material

2. Report Type and Date: Final

	Date	Time
Notification:	02/23/1995	15:03 (MTZ)
Initial Update:	03/01/1995	15:44 (MTZ)
Latest Update:	03/01/1995	15:44 (MTZ)
Final:	04/14/1995	11:17 (MTZ)

3. Occurrence Category: Off-Normal

4. Number of Occurrences: 1 **Original OR:**

5. Division or Project: EG&G Mound Applied Technologies

6. Secretarial Office: DP - Defense Programs

7. System, Bldg., or Equipment: M Building - Loss of Control of CRD Material

8. UCNI?: No

9. Plant Area: Main Hill

10. Date and Time Discovered: 02/22/1995 13:30 (ETZ)

11. Date and Time Categorized: 02/22/1995 15:30 (ETZ)

12. DOE Notification:

Date	Time	Person Notified	Organization
02/22/1995	15:30 (ETZ)	Fred B. Holbrook	DOE/MB

13. Other Notifications:

14. Subject or Title of Occurrence:

M Building - Loss of Control of CRD Material

15. Nature of Occurrence:

05) Safeguards/Security
B. Unaccounted for Classified Matter/Compromised Information

16. Description of Occurrence:

On February 22, 1995, at approximately 1330 hours (ETZ), a derivative classifier made the determination that a document and a component found in two independent excess (unlocked) safes in M Building were classified as "Confidential Restricted Data (CRD)". A CRD document was discovered by a Q Cleared Contractor employee on 2/21/95 in a hanging file folder. A CRD component was discovered by another Q Cleared contractor employee on 2/22/95 below a group of hanging file folders. Both the CRD document and CRD component were forwarded to a derivative classifier for classification verification.

The Safe Declassification labels on both safes were dated 9/94. The area in which M Building resides was converted from a Limited Security Area to an Uncleared Property Protection Area on 12/5/94.

This report was reviewed by an Authorized Derivative Classifier (R. A. Mahan, Maintenance Engineer and Plant Support) on 4/05/95 at 1100 hours (ETZ) and contains no Classified or UCNI Information.

17. Operating Conditions of Facility at Time of Occurrence:

Shut Down Operations

18. Activity Category:

05 - Shutdown

19. Immediate Actions Taken and Results:

The CRD component and document are in the control of the derivative classifier in a classified safe. A Security reminder will be distributed documenting the proper process to sanitize safes.

20. Direct Cause:

3) Personnel Error
A. Inattention to Detail

21. Contributing Cause(s):

6) Management Problem
A. Inadequate Administrative Control

22. Root Cause:

2) Procedure Problem
A. Defective or Inadequate Procedure

23. Description of Cause:

The Direct Cause of this occurrence was due to inattention to detail. CRD materials were inadvertently left in a file folder in a safe and below file folders in a safe.

The Contributing Cause of this occurrence was due to inadequate management control. The current procedure only requires the safe owner to sign off that the safe has been sanitized of classified materials.

The Root Cause of this problem is due to an inadequate procedure. When safes are declassified, the safes should be completely emptied of all contents (including file folders) to minimize the potential for human error in leaving a classified material in a safe.

24. Evaluation (by Facility Manager/Designee):

In the transition from a Defense Weapons mission to one of Economic Development and Environmental Restoration, many significant changes are taking place on plant site which include conversions of Limited Security Island Areas to Uncleared Property Protection Area. Numerous safes had to be declassified to support this effort in the Fall of 1994.

25. Is Further Evaluation Required?: No

26. Corrective Actions
(* = Date added/revised since final report was approved.)

1.

Send out notice to all personnel stating necessary steps to take in safe declassification.	
Target Completion Date: 05/01/1995	***Completion Date:** 05/02/1995

2.

Modify Policy and procedure 7207, entitled "Using and Controlling Classified Repositories to: a) Require line management sign off and the primary safe custodian sign off to signify that a safe does not contain classified materials. Exhibit A of Procedure 7207 must include signature lines for the authorized custodian and the manager/supervisor they report to. b) Require that the safe be completely empty for declassification (file folders are not to be left in the safe).	
Target Completion Date: 06/15/1995	***Completion Date:** 06/07/1995

27. Impact on Environment, Safety and Health:

None

28. Programmatic Impact:

None

29. Impact on Codes and Standards:

None

30. Lessons Learned:

In Mound's transition of a Defense Weapons production mission to one of Economic Development and Environmental Restoration combined with staffing reductions, many security repositories are no longer needed. Due to a much larger volume of security repositories being declassified, it is necessary to minimize the potential of leaving CRD materials in a safe by modifying the policy and procedure for Declassification of Classified Repositories.

31. Similar Occurrence Report Numbers:

1. None

32. User-defined Field #1:

33. User-defined Field #2:

34. DOE Facility Representative Input:

35. DOE Program Manager Input:

36. Approvals:

Approved by: KOEHLER, KATHY G, Facility Manager/Designee
Date: 04/06/1995
Telephone No.: (513) 865-4886

Approved by: HOLBROOK, FRED B, Facility Representative/Designee
Date: 04/07/1995
Telephone No.: (513) 865-4677

Approved by: KUMAR, RAMENDRA, Program Manager/Designee
Date: 04/14/1995
Telephone No.: (301) 903-2865

Occurrence Report

All Other Facilities

(Name of Facility)

Balance-of-Plant

(Facility Function)

Mound Plant EG&G Mound Applied Technologies

(Laboratory, Site, or Organization)

Name: BILLING, DAVID R
Title: BLDG. MGR. SW/R TRITIUM FACILITY **Telephone No.:** (513) 865-3086

(Facility Manager/Designee)

Name: Kathy G. Koehler
Title: Site Grounds Manager **Telephone No.:** (513) 865-4886

(Originator/Transmitter)

Name: D. W. Organ **Date:** 05/18/1995

(Authorized Classifier (AC))

1. Occurrence Report Number: OH-MB-EGGM-EGGMAT04-1995-0003

M Building CO2 Suppression System Activation

2. Report Type and Date: Final

	Date	Time
Notification:	04/21/1995	09:44 (MTZ)
Initial Update:	05/03/1995	16:01 (MTZ)
Latest Update:	05/03/1995	16:01 (MTZ)
Final:	06/01/1995	08:35 (MTZ)

3. Occurrence Category: Off-Normal

4. Number of Occurrences: 1 **Original OR:**

5. Division or Project: EG&G Mound Applied Technologies

6. Secretarial Office: DP - Defense Programs

7. System, Bldg., or Equipment: M Building - Fire Suppression System - CO2

8. UCNI?: No

9. Plant Area: Main Hill

10. Date and Time Discovered: 04/20/1995 10:55 (ETZ)

11. Date and Time Categorized: 04/20/1995 12:00 (ETZ)

12. DOE Notification:

Date	Time	Person Notified	Organization
04/20/1995	12:30 (ETZ)	Fred B. Holbrook	DOE/MB

13. Other Notifications:

14. Subject or Title of Occurrence:

M Building CO2 Suppression System Activation

15. Nature of Occurrence:

01) Facility Condition
H. Operations

16. Description of Occurrence:

On April 20, 1995, at approximately 1055 hours (ETZ), upon completion of annual function testing of a CO2 fire suppression system in the Electrical Vault of M Building, one of ten CO2 cylinders discharged 50 pounds of CO2 to the room atmosphere. The CO2 suppression system involved is a mechanical "pulley and weight" type. The previous function testing of the CO2 system had indicated that the suppression system was operating as designed.

The heat sensor which activates all ten CO2 cylinders had not detected high heat levels and therefore did not actuate the CO2 system. The activation of only one cylinder of CO2 indicates the likelihood of cylinder malfunction, possibly a faulty or failed rupture disk.

This Occurrence Report was reviewed by an Authorized Derivative Classifier (D. W. Organ, Program Manager) on 5/18/95 at 1300 hours (ETZ), and contains no Classified or UCNI Information.

17. Operating Conditions of Facility at Time of Occurrence:

Normal Plant Operations

18. Activity Category:

03 - Normal Operations

19. Immediate Actions Taken and Results:

The CO2 cylinder which discharged to room atmosphere was replaced and the suppression system was reset. Industrial hygiene monitored the room.

20. Direct Cause:

1) Equipment/Material Problem
   A. Defective or Failed Part

. Contributing Cause(s):

2) Procedure Problem
   A. Defective or Inadequate Procedure

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22. Root Cause:

4) Design Problem
   A. Inadequate Work Environment

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23. Description of Cause:

The direct cause of this occurrence was due to either a defective or failed part or a personnel error. The release of CO2 from one cylinder of a bank of ten was either caused by the failure of the rupture disk or as a result of human error associated with resetting the fire suppression system. The handle which forces the cutting tool to penetrate the rupture disk could have been accidentally bumped while the CO2 fire suppression system was being reset.

The contributing cause of this occurrence was due to an inadequate procedure for the annual maintenance testing for the CO2 fire suppression system. The procedure was in the process of being re-written when the annual testing was performed. The procedure will not be upgraded because corrective action #3 calls for mpletely disassembly of the CO2 fire suppression system.

The root cause of this occurrence was due to an inadequate design. The system design did not take into account the potential for a system malfunction which involves the release of CO2 from a cylinder without activation of a fire alarm. It is possible in a malfunction situation involving the release of CO2 to room atmosphere that personnel entering the room could become asphyxiated. It was determined that the CO2 system was more of a safety and health hazard than it was a protective device due to the potential for CO2 asphyxiation. There was no CO2 detector or CO2 alarm in the M building electrical vault.

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24. Evaluation (by Facility Manager/Designee):

Although the CO2 fire suppression system was placed back into service on April 20, 1995, it was intentionally taken back out of service on April 25, 1995. When the system malfunctioned upon completion of annual maintenance testing, personnel were present to hear the malfunction of the CO2 cylinder. Had these personnel not been present, the activation would have gone undetected. An undetected activation of the CO2 fire suppression system as a result of an equipment malfunction is a potential asphyxiant hazard. The system has been taken out of service.

In the present CO2 fire suppression system design, the heat sensor in the center of the room must activate in order to send a signal to the fire alarm computer system. When the CO2 cylinder malfunctioned, the heat sensor did not activate. There were no CO2 detection devices connected to local audio/visual alarms within the electrical vault to warn people entering the room.

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25. Is Further Evaluation Required?: No

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26. Corrective Actions
(* = Date added/revised since final report was approved.)

1.	Temporarily take the CO2 Fire Suppression system out of service due to the potential asphyxiation hazards.	
	Target Completion Date: 04/25/1995	**Completion Date:** 04/25/1995
2.	Evaluate the need to remove, re-activate, upgrade/re-activate, or replace the existing fire suppression system in the M Building electrical vault depending upon current NFPA/NEC/OSHA/DOE requirements.	
	Target Completion Date: 05/09/1995	**Completion Date:** 05/09/1995
3.	Implement the recommendation of Corrective action 2: Remove the CO2 cylinders from M building electrical vault. The heat sensor connected to fire alarm computer system will remain operational.	
	Target Completion Date: 05/15/1995	**Completion Date:** 05/15/1995

27. Impact on Environment, Safety and Health:

Removal of the CO2 fire suppression system will protect the safety and health of people entering the M building electrical vault. The construction of the M Building electrical vault meets the 3 hour fire rating requirements specified by NFPA/NEC code and therefore does not require an automatic fire suppression system.

Any fire that would take place in the M building electrical vault would likely occur as a result of a serious electrical fault resulting in an explosion. Personnel and equipment present in the electrical vault during an explosion would not have enhanced protection by having a functional CO2 fire suppression system especially if they are knocked out and unconscious.

Programmatic Impact:

None

29. Impact on Codes and Standards:

The removal of the CO2 fire suppression system is in compliance with NFPA/NEC code requirements.

30. Lessons Learned:

Designs for safety systems installed over 25 years ago should be evaluated to determine if the safety systems are truly beneficial.

31. Similar Occurrence Report Numbers:

1. None

32. User-defined Field #1:

33. User-defined Field #2:

34. DOE Facility Representative Input:

35. DOE Program Manager Input:

36. Approvals:

Approved by: BILLING, DAVID R, Facility Manager/Designee
Date: 05/18/1995
Telephone No.: (513) 865-3086

Approved by: DEV, MADAN, Facility Representative/Designee
Date: 05/23/1995
Telephone No.: (513) 865-4714

Approved by: KUMAR, RAMENDRA, Program Manager/Designee
Date: 06/01/1995
Telephone No.: (301) 903-2865

Occurrence Report

All Other Facilities

(Name of Facility)

Balance-of-Plant

(Facility Function)

Mound Plant EG&G Mound Applied Technologies

(Laboratory, Site, or Organization)

Name: Koehler, Katherine G.
Title: Site Grounds Manager **Telephone No.:** (513) 865-4886

(Facility Manager/Designee)

Name: KOEHLER, KATHY G
Title: SITE GROUNDS MANAGER **Telephone No.:** (513) 865-4886

(Originator/Transmitter)

Name: R. W. Wilson **Date:** 01/25/1996

(Authorized Classifier (AC))

1. Occurrence Report Number: OH-MB-EGGM-EGGMAT04-1995-0026

Sprinkler Line Freeze - M Building, Rooms 47 & 48

2. Report Type and Date: Final

	Date	Time
Notification:	12/12/1995	13:58 (MTZ)
Initial Update:	01/25/1996	13:11 (MTZ)
Latest Update:	01/25/1996	13:11 (MTZ)
Final:	02/02/1996	14:31 (MTZ)

3. Occurrence Category: Off-Normal

4. Number of Occurrences: 1 **Original OR:**

5. Division or Project: EG&G Mound Applied Technologies

6. Secretarial Office: EM - Environmental Management

7. System, Bldg., or Equipment: Sprinkler Line Freeze - M Building, Rooms 47 & 48

8. UCNI?: No

9. Plant Area: Main Hill

10. Date and Time Discovered: 12/11/1995 10:15 (ETZ)

11. Date and Time Categorized: 12/11/1995 10:45 (ETZ)

12. DOE Notification:

13. Other Notifications:

Date	Time	Person Notified	Organization
12/11/1995	11:00 (ETZ)	R. E. Berry	DOE/MB

14. Subject or Title of Occurrence:

Sprinkler Line Freeze - M Building, Rooms 47 & 48

15. Nature of Occurrence:

01) Facility Condition
E. Safety Structure/System/Component Degradation

16. Description of Occurrence:

On December 11, 1995, a maintenance foreman was reviewing the temperature read outs from the direct digital controls computer display for M Building (non-nuclear building) and discovered that the readings for M-47 and M-48 were 18 degrees F. Upon investigation, it was discovered that the temperature readings displayed were accurate and that the sprinkler lines in these two rooms were frozen and sections of pipe had fallen to the floor. M-47 (small lab) and M-48 (a plating shop) had undergone Phase II safe shutdown in the fall and are presently unoccupied. The cause of the sprinkler line freeze-up was due to an exhaust fan was inadvertently left on at the completion of Phase II Safe Shutdown operations completed in Fall 1995. Prior to the Phase II Safe Shutdown operations, the plating shop HVAC system (which include the exhaust fans) was shut down shortly after operations had ceased in July 1992. Radiant heat from adjacent rooms was sufficient to prevent sprinkler line freeze-up for approximately 3 years.

This Occurrence Report was reviewed by an Authorized Derivative Classifier (R. W. Wilson, Program Manager, Quality Systems) on 1/25/96 at 1530 hours (ETZ) and contains no Classified or UCNI Information.

17. Operating Conditions of Facility at Time of Occurrence:

Normal Operating Conditions

18. Activity Category:

03 - Normal Operations

19. Immediate Actions Taken and Results:

The sprinkler system in M Building will remain shut down until necessary repairs are completed. Heat was

supplied to the room to thaw sprinkler/water lines in M-47 and M-48. Security guards walked through M Building every hour on after hour shifts as a precautionary measure while the M Building sprinkler system was not functional.

Direct Cause:

7) External Phenomena
A. Weather or Ambient Condition

21. Contributing Cause(s):

3) Personnel Error
A. Inattention to Detail

22. Root Cause:

6) Management Problem
B. Work Organization/Planning Deficiency

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23. Description of Cause:

The direct cause of the occurrence was due to single digit temperatures the weekend of December 9, 1995.

The contributing cause of the occurrence was due to a personnel error. After plating tank cleaning operations were completed in August 1995 by Safe Shut Down personnel, the exhaust fan supporting the unoccupied plating shop was not turned off.

The root cause of this occurrence was due to a management problem involving a planning deficiency. At the completion of Phase II Safe Shut Down operations, supply and exhaust air should have been returned to levels that existed prior to initiation of the Phase II shut down operations.

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24. Evaluation (by Facility Manager/Designee):

The fire suppression system for M Building was inoperable for a period of three days (December 11, 1995 through December 14, 1995). The system was brought back on line on December 14, 1995, but excluded Rooms 47 and 48.

The sprinkler lines in M Building, Rooms 47 and 48, were originally installed at two elevations. The above ceiling sprinkler lines were brought back into service on December 18, 1995. The lower sprinkler lines are presently undergoing repairs. The installation of the lower sprinkler lines will be completed by February 29, 1996. M Building, Rooms 47 and 48 are not occupied, but the mezzanine level of M Building is occupied.

Had there been a fire in M Building between December 11, 1995 and December 18, 1995, the Fire Department's responses time may have been delayed due to a lack of water flow alarms resulting from portions of the M Building fire suppression system being inoperable. There are no smoke detectors located in M Building, Rooms 47 and 48. Had there been a fire in M Building after December 18, 1995, water flow alarms would have functioned and emergency response time would not have been impacted.

There were no fires in M Building between December 11, 1995 and December 18, 1995, therefore there has been no impact on the environment or the safety and health of personnel.

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25. Is Further Evaluation Required?: No

26. Corrective Actions

(* = Date added/revised since final report was approved.)

1. Safe Shut Down Personnel to update check lists for Phase I, II, and II Safe Shut Down Operations to ensure that HVAC systems have been reset to prevent freezing conditions or overheating conditions.

Target Completion Date: 02/29/1996	***Completion Date:** 02/20/1996

2. Reactivate sprinkler system for M Building excluding Rooms 47 and 48.

Target Completion Date: 12/14/1995	**Completion Date:** 12/14/1995

3. Determine extend of damage and repair sprinkler piping in M Building (Rooms 47 and 48) and complete sprinkler line repairs.

Target Completion Date: 02/29/1996	**Completion Date:** 02/01/1996

4. Develop a surveillance list of buildings which will require surveillance when daily low temperatures drop below 10 degrees F.

Target Completion Date: 12/14/1995	**Completion Date:** 12/14/1995

5. Initiate building surveillance for heat levels by powerhouse personnel when temperature drops below 10 degrees F.

Target Completion Date: 12/15/1995	**Completion Date:** 12/15/1995

6. Evaluate viability of expanding the low temperature alarms on the Direct Digital Controls System and provide a written recommendation and (if viable) a corresponding cost estimate for project authorization.

Target Completion Date: 02/29/1996	***Completion Date:** 02/27/1996

7. Issue a "Lessons Learned" memo to the Maintenance planners and foremen on the importance of returning systems to their original conditions.

Target Completion Date: 12/21/1995	**Completion Date:** 12/21/1995

27. Impact on Environment, Safety and Health:

None

28. Programmatic Impact:

None

29. Impact on Codes and Standards:

None

30. Lessons Learned:

HVAC settings must be verified for areas of buildings and/or entire buildings that are undergoing various phases of safe shut down operations to ensure freezing/overheating conditions do not occur.

31. Similar Occurrence Report Numbers:

1. None

32. User-defined Field #1:

33. User-defined Field #2:

34. DOE Facility Representative Input:

35. DOE Program Manager Input:

36. Approvals:

Approved by: Koehler, Katherine G., Facility Manager/Designee
Date: 01/25/1996
Telephone No.: (513) 865-4886

Approved by: BERRY, RONALD E, Facility Representative/Designee
Date: 01/29/1996
Telephone No.: (513) 865-4836

Approved by: WORLEY, MICHAEL NEWTON, Program Manager/Designee
Date: 02/02/1996
Telephone No.: (301) 903-2153

Occurrence Report

Main Hill Facilities

(Name of Facility)

Balance-of-Plant

(Facility Function)

Mound Plant EG&G Mound Applied Technologies

(Laboratory, Site, or Organization)

Name: Jeffrey L. Boston
Title: Facilty Manager **Telephone No.:** (937) 865-3262

(Facility Manager/Designee)

Name: BOSTON, JEFFREY L
Title: BLDG MGR EXPLOSIVE FACILITIES **Telephone No.:** (513) 865-3262

(Originator/Transmitter)

Name: D. V. Dixon **Date:** 03/27/1997

(Authorized Classifier (AC))

1. Occurrence Report Number: OH-MB-EGGM-EGGMAT03-1996-0004

Discovery of Legacy Radioactive Contamination in M-Building (ROLL-UP)

2. Report Type and Date: Final

	Date	Time
Notification:	08/01/1996	13:10 (MTZ)
Initial Update:	09/09/1996	13:14 (MTZ)
Latest Update:	03/27/1997	07:37 (MTZ)
Final:	07/11/1997	11:58 (MTZ)

3. Occurrence Category: Off-Normal

4. Number of Occurrences: 7 **Original OR:**

5. Division or Project: EG & G Mound Applied Technologies

6. Secretarial Office: EM - Environmental Management

7. System, Bldg., or Equipment: M Building

8. UCNI?: No

9. Plant Area: Main Hill Area

10. Date and Time Discovered: 07/29/1996 09:00 (ETZ)

11. Date and Time Categorized: 07/31/1996 16:00 (ETZ)

12. DOE Notification:

Date	Time	Person Notified	Organization
07/31/1996	16:00 (ETZ)	Fred Holbrook	DOE/MB

13. Other Notifications:

Date	Time	Person Notified	Organization
09/09/1996	12:35 (ETZ)	Fred Holbrook	DOE/MB
09/17/1996	07:30 (ETZ)	Fred Holbrook	DOE/MB
09/24/1996	07:24 (ETZ)	Fred Holbrook	DOE/MB
10/01/1996	07:15 (ETZ)	Fred Holbrook	DOE/MB

14. Subject or Title of Occurrence:

Discovery of Legacy Radioactive Contamination in M-Building (ROLL-UP)

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15. Nature of Occurrence:

01) Facility Condition
D. Loss of Control of Radioactive Material/Spread of Radioactive Contamination

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16. Description of Occurrence:

OCCURRENCE #1 - At approximately 1330 hours (ETZ) on July 31, 1996 a member of the Safety Department contacted the Radiological Operations Manager to inform him that he discovered a metal cabinet displaying radiological posting was laying on its side in M-building, which is not posted as a Controlled Area. A Radiological Organization representative accompanied the individual to investigate. Discussions with contractor Radiographic Control Technicians revealed that radiological contamination (9500 dpm/100 cm2 - fixed beta and 250 dpm/100 cm2 - fixed alpha) was discovered on a piece of ceramic in the cabinet at 0900 on 7/29/96. Additionally, Occurrence #2, floor contamination (14000 dpm/100 cm2 fixed - beta) was discovered at 0730 on 7/30/96 and, Occurrence #3, a steel dye containing contamination (13000 dpm/100 cm2 fixed - beta) was discovered at 1500 on 7/30/96. OCCURRENCE #4 - On September 9, 1996 at 1200 (ETZ) spectroscopic analysis determined that fixed and not removable contamination, discovered on September 4, 1996 in M-building on a drum cart, to be Pu-238, Am-241, and Th-232. The highest contamination level was imbedded in the tire and measured 10,000 dpm (alpha). Transuranics Pu-238 and Am-241 are believed to be the major constituents of the contamination. OCCURRENCE #5 - On September 16, 1996 at 0830 (ETZ) Spectrographic Analysis determined that fixed contamination, discovered during performance of radiological characterization surveys on September 12, 1996 in M-Building on a waste water sulphur determination unit contained Th-232 and U-238. The highest contamination level was fixed on a ceramic pad (4" x 4") and measured 15,000 dpm/100 cm2 beta-gamma particles and 100 - 200 dpm/100 cm2 alpha particles. OCCURRENCE #6 - At 1300 (ETZ) on September 23, 1996 Radiological Control Technicians, surveying equipment in a Controlled Area of M-Building, identified approximately 8000 dpm/100 cm2 of Total alpha contamination, including 150 /100 cm2 of removable alpha on a four drawer laboratory cabinet. Due to the

lack of gamma radiation from the contamination, spectrographic analysis for isotope identification was not possible. OCCURRENCE #7 - At 1600 (ETZ) on September 30, 1996 spectographic analysis determined that fixed radiological contamination of a bundle of glass tubing direct-measuring 110,000 dpm/100 cm2 Beta-Gamma including one individual piece measuring 35,000 dpm/100 cm2 Beta-Gamma consisted of the isotopes U-235 and U-238.

17. Operating Conditions of Facility at Time of Occurrence:

Normal day time operating conditions

18. Activity Category:

03 - Normal Operations

19. Immediate Actions Taken and Results:

OCCURRENCE 1, 2, 3, & 4 - The M-building area was posted as a Controlled Area. A survey was conducted to verify that loose contamination was not present on or around the area. The contaminated ceramic piece was sent for isotope analysis.

OCCURRENCE #5 - Upon identification of the contaminated equipment, it was moved into a posted Radioactive Materials Area. OCCURRENCE #6 - Upon identification of the contamination by direct survey, a wipe survey was performed and discovered the 150 dpm/100 cm2 removable. The contaminated area was covered and secured under plastic and the cabinet was moved to a Radioactive Materials Storage Area. OCCURRENCE #7 - Upon identification of the contaminated tubing by direct survey, a wipe survey was conducted to determine if removable contamination was present. None was found. A piece of the tubing was taken for gamma spectrographic analysis and the rest moved to a Radioactive Materials storage area.

20. Direct Cause:

8) Radiological/Hazardous Material Problem
A. Legacy Contamination

21. Contributing Cause(s):

22. Root Cause:

8) Radiological/Hazardous Material Problem
A. Legacy Contamination

23. Description of Cause:

The discovery of these "legacy material" contaminations is the result of an intensive free release survey in support of Safe-shutdown. As items are surveyed for release, relatively low level contamination has been found. The actual event that caused these items to become contaminated probably occurred years ago and is being discovered now because of increased monitoring instrumentation sensitivities.

. Evaluation (by Facility Manager/Designee):

No effect on the plant, systems, or environment is expected. The discovery of legacy contamination is expected during the monitoring and cleanup of excess equipment.

25. Is Further Evaluation Required?: No

26. Corrective Actions

(* = Date added/revised since final report was approved.)

1. Investigate known fixed contamination areas in M-Building, decontaminate and post as required.

Target Completion Date: 08/08/1996	**Completion Date:** 08/08/1996

2. Communicate with M-Building tenants the status of M-Building contamination and posting requirements.

Target Completion Date: 08/05/1996	**Completion Date:** 08/05/1996

27. Impact on Environment, Safety and Health:

No impact on the environment or worker/public safety and health as a result of this occurrence is expected.

No contamination of individuals on-site, no potential for further spread of contamination, and the affected areas or equipment have been decontaminated, removed, or posted as contamination areas.

The significance relative to applicable limits is as follows:

Occurrence #1 - 9,500 dpm/100 cm2 fixed beta contamination and 250 dpm/100 cm2 - fixed alpha contamination of an unknown radionuclide on a ceramic furnace collar. The allowable limit (from RadCon Manual Table 2-2) for an Uncontrolled Area on-site is 10,000 dpm/100 cm2 for fixed beta and 1000 dpm/100 cm2 for fixed alpha contamination.

Occurrence #2 - 14,000 dpm/100 cm2 fixed beta contamination of an unknown radionuclide on the building floor. The allowable limit (from RadCon Manual Table 2-2) for an Uncontrolled Area on-site is 10,000 dpm/100 cm2.

Occurrence #3 - 13,000 dpm/100 cm2 fixed beta contamination of an undetermined radionuclide on a steel dye. The allowable limit (from RadCon Manual Table 2-2) for an Uncontrolled Area on-site is 10,000 dpm/100 cm2.

Occurrence #4 - 10,000 dpm/100 cm2 fixed alpha contamination of Pu-238, Am-241, and Th-232 on a drum cart. The allowable limit (from RadCon Manual Table 2-2) for an Uncontrolled Area on-site is 1,000 dpm/100 cm2 for Transuranics Pu-238 and Am-241 or 2000 dpm/100 cm2 for Th-232.

Occurrence #5 - 15,000 dpm/100 cm2 fixed beta-gamma contamination from Th-232 and U-238 on a ceramic pad. The allowable limit (from RadCon Manual Table 2-2) for an Uncontrolled Area on-site is 10,000 dpm/100 cm2.

Occurrence #6 - 8000 dpm/100 cm2 total (fixed and removable) alpha contamination including 150 dpm/100 cm2 removable alpha contamination of an undetermined radionuclide on a laboratory cabinet. The allowable limit (from RadCon Manual Table 2-2) for an Uncontrolled Area on-site is 1,000 dpm/100 cm2 for fixed contamination and 40 dpm/100 cm2 for removable contamination (worst case radionuclide).

Occurrence #7 - 110,000 dpm/100 cm2 fixed beta-gamma contamination for the bundle of glass tubing including one individual piece containing 35,000 dpm/100 cm2 fixed beta-gamma contamination of U-235 and U-238. The allowable limit (from RadCon Manual Table 2-2) for an Uncontrolled Area on-site is 10,000 dpm/100 cm2.

28. Programmatic Impact:

No programmatic impact is expected.

29. Impact on Codes and Standards:

None

30. Lessons Learned:

During the planning phase of the shutdown and clean-out of excess buildings an evaluation should be conducted in order to determine if the building should be posted as a Radiological Contamination or Controlled Area before searching for legacy contamination.

As a minimum, once legacy contamination of any level is discovered, the entire building should then be posted as a Radiological Contamination and Controlled Area.

31. Similar Occurrence Report Numbers:

1. OH-MB-EGGM-EGGMAT03-1996-0001

32. User-defined Field #1:

33. User-defined Field #2:

34. DOE Facility Representative Input:

35. DOE Program Manager Input:

The following information is provided to support the close out of ORPS Reports concerning legacy radioactive contamination found at Mound:

1. EG&G Mound has completed a "wall to wall" characterization survey of M and DS Buildings.

2. All radioactive contamination identified during these characterization surveys was controlled as it was found.

3. The characterization surveys and release of any site buildings was performed using the following documents: - DOE-MEMP Radiological Protection Position Determination on

Release of Material dated May 1, 1996 and revised on January 7,

1997 - MD-80043, Operation 400 - Radioactive Material Transfer and

Unrestricted Release of Property/Waste - Generic Process for the Disposition of Buildings That Have Potential or Actual Radiological Contamination dated January 1997

Developed by the Cleanup Standards Committee for the Ohio

Federal Facilities Issues and Challenges Forum)

Entered by: TRACY, TERRANCE Date: 07/11/1997

36. Approvals:

Approved by: Jeffrey L. Boston, Facility Manager/Designee
Date: 03/27/1997
Telephone No.: (937) 865-3262

Approved by: HOLBROOK, FRED B, Facility Representative/Designee
Date: 03/27/1997
Telephone No.: (513) 865-4677

Approved by: TRACY, TERRANCE, Program Manager/Designee
Date: 07/11/1997
Telephone No.: (301) 903-2173

Occurrence Report

Main Hill Facilities

(Name of Facility)

Balance-of-Plant

(Facility Function)

Mound Plant Babcock and Wilcox of Ohio, Inc.

(Laboratory, Site, or Organization)

Name: Gary L. Weidenbach
Title: Building Mgr./Alternate Facility Mgr **Telephone No.:** (937) 865-3241

(Facility Manager/Designee)

Name: WEIDENBACH, GARY L
Title: BUILDING MANAGER **Telephone No.:** (937) 865-3241

(Originator/Transmitter)

Name: Don Dixon **Date:** 12/07/1998

(Authorized Classifier (AC))

1. Occurrence Report Number: OH-MB-BWO-BWO03-1998-0002

Entering and removing equipment from a Controlled Area and Contamination Area without proper training. (Roll-Up)

2. Report Type and Date: Final

	Date	Time
Notification:	07/15/1998	13:33 (MTZ)
Initial Update:	08/17/1998	13:28 (MTZ)
Latest Update:	12/07/1998	13:56 (MTZ)
Final:	12/23/1998	10:21 (MTZ)

3. Occurrence Category: Off-Normal

4. Number of Occurrences: 2 **Original OR:**

5. Division or Project: Babcock and Wilcox of Ohio

6. Secretarial Office: EM - Environmental Management

7. System, Bldg., or Equipment: M Building

8. UCNI?: No

9. Plant Area: Main Hill

10. Date and Time Discovered: 07/14/1998 10:30 (ETZ)

11. Date and Time Categorized: 07/14/1998 13:30 (ETZ)

12. DOE Notification:

Date	Time	Person Notified	Organization
07/14/1998	13:50 (ETZ)	Fred Holbrook	DOE/MEMP

13. Other Notifications:

14. Subject or Title of Occurrence:

Entering and removing equipment from a Controlled Area and Contamination Area without proper training. (Roll-Up)

15. Nature of Occurrence:

01) Facility Condition
F. Violation/Inadequate Procedures

16. Description of Occurrence:

Occurrence Item #1

On Tuesday, July 14, 1998 at approximately 8:15 AM Advanced Machinery Movers a company under contract with Miamisburg Mound Community Improvement Corporation (MMCIC) entered M Building. An MMCIC employee had a key to M building and unlocked it for the moving company.

At 10:30 AM a Babcock and Wilcox (B&W) employee observed two individuals removing equipment from M Building's high bay area. The high bay area is a controlled area with radiological postings in place. The individuals were identified as being employees of Advanced Machinery Movers and stated they were removing equipment at the direction of a MMCIC employee. The individuals were questioned as to whether they had received GERT training before entry into the building. Neither had received the training. GERT (general employees radiological training) is required for entry into the controlled areas of M building. Rad contamination boundary roping was affixed to a piece of equipment that was being moved. One of the individuals entered a contamination area in the process of moving the equipment, which required Rad Worker II training for entry.

A radiological control technician surveyed both individuals and the six pieces of equipment (removed from the building), one flat bed truck, and one fork lift. All readings were less than release limits. The point of contact person (POC) for radiological control gave the OK to release the individuals and their equipment.

A critique meeting of the M Building incident was held at 3:00 PM, July 14, 1998. During the meeting a second truck (Advanced Machinery Movers) was identified as having left the site. Upon contacting the movers it was found that the second truck was sent in case of need basis and was not used. The driver of the second truck entered only the rad controlled area of M building.

A similar event (unreported) is under investigation for equipment that had left the building in April, 1998. (It has been determined that the equipment in question was properly removed from the building)

Occurrence #2 Roll-Up

On July 28th 1998 at 11:30am ETZ entry into the Controlled area of M-building (the High Bay area) was made by two members of an auctioneer firm escorted by two BWO employees for the purpose of removing equipment to be auctioned at a later date.

Due to the Occurrence in item #1 above, this activity was brought to the attention of a member of the Radiological Control group by other BWO employees in the general area. The Radiological Control personnel investigated the situation immediately. He determined that the equipment was properly tagged for removal from the controlled area but the two members of the auctioneer team had not received the proper training to enter this area, GERT (General Employee Radiological Training).

17. Operating Conditions of Facility at Time of Occurrence:

Normal Operations, both item 1 and 2

18. Activity Category:

03 - Normal Operations

19. Immediate Actions Taken and Results:

Occurrence item #1

The individuals were questioned about their training history. A radiological tech, surveyed both individuals, their equipment, and the six pieces of equipment removed from the building.

Occurrence item #2

Work was stopped and the auctioneers were told of their need for training before re-entering controlled areas. The BWO employees were corrected as to their misunderstanding of being able to escort non GERT trained individuals.

20. Direct Cause:

3) Personnel Error
B. Procedure Not Used or Used Incorrectly

21. Contributing Cause(s):

5) Training Deficiency
D. Insufficient Refresher Training

6) Management Problem
A. Inadequate Administrative Control

22. Root Cause:

3) Personnel Error
C. Communication Problem

23. Description of Cause:

The Direct Cause and Root Cause relate to those involved in both Occurrence item 1 and item 2 misunderstanding the necessary requirements of entering a Controlled area. The Procedure was not used correctly and requirements were not communicated adequately to Mound personnel.

The personnel escorting the non-GERT trained individuals had received Rad Worker II training. It was their understanding they could escort these individuals into the controlled areas as visitors.

The misunderstanding of who is a general employee and who is a visitor in 10CFR835 caused this situation. In both instances those individuals being escorted would be considered as general employees and therefore they were required to have GERT training themselves. (Communication problem)

The lack of familiarization and clarification concerning General Employee Radiological Training led them to believe their actions were acceptable.(Insufficient Refresher Training)

Inadequate Administrative Control of access to M-building was a contributing cause. The key to M-building was given to a MMCIC employee for the purpose of tours, not work.

24. Evaluation (by Facility Manager/Designee):

Both Occurrences of item 1 and item 2 show a lack of familiarization and understanding concerning the Control Area of M-building. Efforts to determine the extent of this matter is being reviewed by those parties involved.

10/14/98: Direct and Root cause determination and Corrective Actions are still being evaluated. A one week extension (10-21-98) has been given by the DOE Facility Representative.

The above items were not able to be reviewed until 10/22/98, then this report was resubmitted.

25. Is Further Evaluation Required?: No

26. Corrective Actions
(* = Date added/revised since final report was approved.)

1.	Control access to M-building a. Key returned from MMCIC employee on 08/03/98 b. Key access availability will be controlled and limited for specific purposes and amount of time. c. Building Manager and Project Team to routinely monitor building access and lock building when not in use.	
	Target Completion Date: 09/01/1998	**Completion Date:** 09/01/1998
2.	Emphasize and clarify requirements for entering a Controlled area, the need for General Employee Radiological Training. a. Message via Mounds News to plant population concerning ENTRANCE INTO CONTROLLED AREAS, 07/30/98 b. Message via Mound News concerning Training requirements for subcontractors, 08/05/98 c. Message via GroupWise to all Building Managers emphasizing GERT requirement and clarification of escorting others, 08/20/98 d. Mound News to plant population emphasizing	

personnel/subcontractors/visitors of GERT prior to entering a Controlled area, 09/18/98 f. MMCIC notified of GERT requirement for entry into Controlled areas, 09/14/98	
Target Completion Date: 09/30/1998	**Completion Date:** 09/30/1998

3. The GERT policy will be outlined completely in the GERT refresher which is sent to GERT qualified individuals in the off-year, between requalification. Currently DOE mandates GERT qualification biannually. The refresher will be of the "read and sign" variety of training consisting of policy changes and reminders to individuals regarding their responsibilities.	
Target Completion Date: 10/21/1998	**Completion Date:** 10/21/1998

27. Impact on Environment, Safety and Health:

None

28. Programmatic Impact:

None

29. Impact on Codes and Standards:

None.

30. Lessons Learned:

Procedure and training requirements need to be brought to the attention of those entering Controlled areas.

Access to Controlled areas needs to be limited.

Periodic re-emphasis of General Employee Radiological Training is a good reminder to individuals regarding their responsibilities.

31. Similar Occurrence Report Numbers:

1. None

32. User-defined Field #1:

33. User-defined Field #2:

34. DOE Facility Representative Input:

35. DOE Program Manager Input:

. Approvals:

Approved by: Gary L. Weidenbach, Facility Manager/Designee
Date: 12/07/1998
Telephone No.: (937) 865-3241

Approved by: HOLBROOK, FRED B, Facility Representative/Designee
Date: 12/23/1998
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Approved by: Approval delegated to FR
Date: 12/23/1998
Telephone No.:

Appendix N

PRS/REC* Information

* Extract from Phase I Environmental Site Assessment of DOE Mound, M Building (HOK/K)

Of these 345 PRSs, four were attributed to operations at Building M (refer to Figure 2 for locations):

- PRS 118 - M Building Soils: Elevated VOCs were detected in soils (plotted on the east side of Building M) in soil gas surveys conducted in 1993. Potential hazardous substances for this PRS were listed as copper cyanide, silver cyanide, machine oils, and solvents. The Site Summary Report did not provide a rationale or confirmation as to why the M Building soils were shown to be outside an exit door on the east side of the building. The original document detailing the soil gas surveys was not readily available during our research of the DOE documents. It was also not explained as to why the cyanides were listed when these are not generally considered to be volatile compounds detectable by soil gas survey. (Refer to Exhibit C and to Photograph 1 presented in Exhibit D).

- PRS 119 - Room M-38 Metal Plating Rinse Water Sump Tank (Tank 225): Rinsewater from cascade rinse steps of the old plating operations in Building M were directed to the sanitary sewer system by first passing through this sump tank (Refer to Figure 2). It is little more than a deep manhole, measuring approximately 15 feet in depth, according to Mr. George Jones, and 350 gallons in volume. The tank is apparently still connected to the sanitary sewer line leading north of the building to a main sanitary trunk line passing east-west on the north side of Building M. However, the tank is now inactive. DOE/EG&G have indicated in the Site Summary Report that there is no evidence of release associated with this tank and that no further action is required. Tank data from the Active Underground Storage Tank Plan (November 1994) is provided in Exhibit E.

- PRS 120 - Room M-108 Metal Plating Rinse Water Tank (Tank 119): This sump tank is very similar to Tank 225, except that it is reportedly only 10 feet deep and is 250 gallons in capacity. Cascade rinsewater from the new plating operations at the south end of the building is directed first to this sump and from there to the sanitary sewer line. The tank is currently in service, although plating operations in the southern part of the site building terminated about a year ago. Mr. Jones reported that the effluent from this tank was checked daily by the plating staff, and EG&G personnel sampled the effluent monthly pursuant to the Mound Plant NPDES permit. Mr. Jones recalled that the only sampling and analysis violations of the permit of which he was aware were elevated levels of copper. OEPA suspected that this result indicated that Mound was plating with copper cyanide, according to Mr. Jones. However, Mr. Jones and Mr. Koeller indicated that this was not the case, that copper cyanide solution had not been used at Building M, but speculated that the acidic solutions were leaching out the copper from the copper piping installed in the building. Refer to Exhibit E for additional tank data.

- PRS 121 - Vapor Degreasers: Two vapor degreasers were installed for parts cleaning in the new plating shop. One is located in Room 108, and a much older one (dating from the 1950s) is located adjacent to Room 47. Both apparently used tetrachloroethylene (Perclene-D) as a solvent. Vapors from the degreasers are routed to ventilation hoods which are exhausted to air emission stacks on the roof. A 1993 OEPA air permit for these vapor degreasers was tacked to the wall of the plating shop during HOK/K's site visit; however, EG&G did not include such a permit in the package of current regulatory permits requested by HOK/K for this assessment. Presumably this is because the plating shop is no longer in operation.

4.1.3 In compliance with permit requirements under RCRA, the Clean Water Act (CWA), the Safe Drinking Water Act (SDWA), and the Clean Air Act (CAA), the Mound has applied for or has received permits for its surface water discharges, air emissions, and hazardous waste program. The Mound has submitted both a RCRA Part A and Part B Permit application and operates as a RCRA hazardous waste treatment and storage facility under interim status. Mound also maintains a NPDES surface water discharge permit with facility I.D. Number OH009857. 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. The Mound 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 nitric acid, argon, helium, and sulfuric acid are stored at Building M in quantities above regulatory thresholds.

4.1.4 DOE has legal authority derived from the Atomic Energy Act of 1954 (AEA) to conduct routine operations at Mound involving, among other things, underground tanks, equipment and other facilities. "Routine operations" include both the operation of currently active sites and the Decontamination & Decommissioning (D&D) of surplus sites. DOE has authority under the AEA to respond to any environmental contamination known or discovered for both active and inactive tanks. Because DOE has signed an FFA, it also has authority and responsibility derived from CERCLA and the FFA. The authorities of the AEA and CERCLA overlap, but CERCLA explicitly recognizes the integration of the overlapping authorities. At Mound, a D&D/ER Program agreement was established April 26, 1991, to define the soil activity responsibilities between the two programs.

7.0 FINDINGS AND CONCLUSIONS

7.1 HOK/K Industrial, Inc. has performed a Phase I Environmental Site Assessment of the DOE Mound, M Building located at DOE Mound in Miamisburg, Ohio. Any exceptions to, or deletions from, our standard procedures are described in Section 2.3 of this report.

This assessment has revealed the following evidence of Recognized Environmental Conditions:

- Three of the four potential release sites (PRS) recognized by DOE/EG&G through the FAA/ER combined program are included in our findings as RECs: the M Building soils reported to have elevated levels of volatile organic compounds (VOCs) detected by soil gas survey, the inactive metal plating rinse sump tank in Room 38; and the in-service metal plating rinse sump tank in Room 108 (corridor 107).

  The presence of VOCs in soils on the east side of Building M needs to be confirmed or denied by follow-up investigation, which may be accomplished through a second soil gas survey or subsurface soil sampling.

  The potential exists for plating solutions to have leaked or corroded through the base of the two plating rinse tanks. The integrity of these sump tanks should be determined and, if warranted, sediment within the tanks or soil below the tanks may need to be sampled for metals and other plating compounds.

  HOK/K did not include the fourth PRS, the vapor degreasers, as RECs since these units have been drained, cleaned, and are currently out-of-service, and since there is no evidence of spills or leakage related to these units. In addition, DOE/EG&G has recommended that this PRS be managed through EG&G's Operation and Maintenance program.

- Oil leaks were noted on the wood block floor of the main high bay area. Because of its history of machine shop usage, the wood block floor has the potential to be saturated in places with machine oils and possibly solvents. The potential also exists for these chemicals to have leached through the underlying concrete slab, if released in large enough quantities. When free of its equipment inventory, the wood block floor should be inspected, sampled where appropriate, and analyzed. If the wood block analyses indicate that this floor is a hazardous waste, then it will need to be properly removed.

- The integrity of the concrete slab beneath the oil quench tank in the heat treating room should also be inspected. If the slab appears fractured, the soil beneath the slab should be sampled and analyzed.

- Extensive ductwork pertaining to the machine shops exhaust collection system and the plating shop ventilation system remains in place in Building M, as well as exhaust collectors (bag houses) and air handlers. While in place these items do not represent a significant risk to public health or the environment. However, if these pieces of equipment are to be dismantled or demolished, they must be properly inspected and decontaminated of any residual plating compounds, machine oils, and milled metal dust.

- Ten cylinders marked both as "deuterium - radioactive" and "hydrogen" are stored in a cage on the east side of Building M. While these cylinders probably do not contain deuterium, but have been reused for the storage of hydrogen, they should be checked to confirm that proper storage and labelling procedures are being followed.

- The condition of the PCB-containing electrical transformers in the Building M electrical substation should be regularly inspected. If any leaks or stains are observed, proper clean-up operations should be followed. Also, fluorescent light ballasts should also be properly disposed.

- Beryllium copper plating and/or milling was reported to have been performed in Room 42. The exhaust collector in Room 42A, which presumably serviced the beryllium operation, may contain residual beryllium dust, which can present a carcinogenic and inhalation health hazard. Appropriate safety and health protocols should be followed if the Room 42A exhaust collector is renovated or demolished.

- Mound Health Physics records indicate that uranium milling or machining was performed in Building M. The exact location has not been established. Further research of Mound records is necessary to identify the uranium machining location, and to determine whether DOE Decontamination and Decommissioning (D&D) efforts were completed for this operation. If no such documentation exists, a Health Physics survey for residual radiation may be required.

- Pressing and canning of lithium deuteride for the Lawrence Livermore National Laboratory was reportedly performed in Building M. Interviews with site personnel revealed that a "Livermore box" had been located in the Heat Treating room (Room 20). Further research of Mound records is required to verify that DOE D&D was completed for this operation. If no such documentation is available, a Health Physics survey for residual contamination may be required.

- Another lithium research program was reported to have been conducted in Building M. The project concerned the development of analytical methods for lithium hydride deuteride and tritide. Our recommendation for this REC is the same as for the Livermore Project REC.

7.2 HOK/K Industrial, Inc. also has the following recommendations for the site:

- The asbestos-containing materials (ACM) present in Building M appear to be in relatively good condition and do not represent a significant risk to public health or the environment while left in place. If renovation or demolition of the facility is planned, however, the ACM must be removed in compliance with applicable federal and state regulations.

M Building Contamination Issues

DESCRIPTION	CONTAMINANT(S) OF CONCERN	CURRENT INFORMATION	COMPARISON VALUE
PRS-118 M Building Soils	Copper Cyanide, Silver Cyanide, Machine Oils, Solvents	No analysis results exceeding comparison values for Organics or Radionuclides	
PRS-119 M-38 Metal Plating Rinse Water Tank (Tank 225)	Nickel, Cadmium, Silver, Gold, Manganese, Cyanide, Aluminum, Sodium Hydroxide, Potassium Permanganate	Aluminum = 21,300 MG/KG Beryllium = 0.74 MG/KG **Cadmium = 1490 MG/KG** **Chromium = 5970 MG/KG** Cobalt = 146 MG/KG Copper = 28,400 MG/KG Iron = 127,000 MG/KG **Lead = 21,100 MG/KG** **Nickel = 22,500 MG/KG** Silver = 306 MG/KG Sodium = 4370 MG/KG Molybdenum = 121 MG/KG Tin = 963 MG/KG	Aluminum = 19,000 MG/KG: BG Beryllium = 0.7 MG/KG: BG **Cadmium = 210 MG/KG: HI** **Chromium = 1100 MG/KG: HI** Cobalt = 19 MG/KG: BG Copper = 26 MG/KG: BG Iron = 35,000 MG/KG: BG **Lead = 400 MG/KG: OC** **Nickel = 4,300 MG/KG: HI** Silver = 1.7 MG/KG: BG Sodium = 240 MG/KG: BG Molybdenum = 27 MG/KG: BG Tin = 20 MG/KG: BG
PRS-120 M-108 Metal Plating Rinse Water Tank (Tank 119)	Copper, Gold, Nickel, Aluminum, Uranium	No analysis results exceeding comparison values for Metals, Cyanide or Radionuclides with the exception of Thallium of 2.2 MG/KG	Thallium Background = 0.46 MG/KG
PRS-121 Vapor Degreasers	Perclene D (perchloroethylene)	The Vapor Degreasers are out of service. They have been drained and cleaned	
High Bay Area Wood Block Floor	Uranium, Machine Oils, Solvents	All Machine Oils and Solvents were absorbed into the wood blocks. Highest levels of Uranium found prior to removal of Wood Block Floor = 42,000 dpm which equates to a dose of 0.0438 mrem/year	Acceptable exposure to the public = 100 mrem/year

Note: BG = Background, HI = Hazard Index, OC = Other Criteria

Appendix O

Work Plan

JOB SPECIFIC WORK PLAN

Title: M Building Demolition		
MSR (If Applicable)	JSWP No. MHNR-99-07	Rev. No. 0

~ Office Master Copy (Original Approval Signatures) ~ Field Master Copy (Original Field Sign-Offs) ~ Review Copy ~ Other Copy

Reference Drawings	Rev.	Reference Procedures	Rev.

DOE Project Manager Approval:	Signature:	Date:

Draft

Approvals:

Signature	Date	Department
		Project Manager
		Project Engineer
		Project Superintendent
		Building Manager
		Rad Controls
		IS&H
		Industrial Hygiene
		Waste Management
		Environmental Compliance
See Next Page		ISM Reviews

Additional Approvals:

JOB SPECIFIC WORK PLAN

Title: M Building Demolition		
MSR (If Applicable)	JSWP No. MHNR-99-07	Rev. No. 0

Signature	Date	Department
		Howard Ellis / Heavy Duty
		Rick Lawson / Demo Tech

Work Package Preparer:	Signature:	Date:

Draft

Work Package Closure:	The work described in this work package has been satisfactorily completed.
Job Supervisor:	
Project Manager:	

NOTES:

JOB SPECIFIC WORK PLAN

Title: M Building Demolition		
MSR (If Applicable)	JSWP No. MHNR-99-07	Rev. No. 0

SIGN-OFF SHEET

I have read and understand the attached Job Specific Work Plan:

Signature	Date	Department

Draft

JOB SPECIFIC WORK PLAN

Title: **M Building Demolition**		
MSR (If Applicable)	**JSWP No. MHNR-99-07**	**Rev. No. 0**

1. Introduction

M Building has 56,000-square-feet, including two mezzanine office areas totaling 5,800-square-feet. It is a two-story structure made of concrete block with brick facing. The roof is metal with a built-up membrane of coal tar and asphalt. M Building is bordered on three sides by a roadway. The building has central steam for heat, chilled water, and electrical service of 480V.

M Building was constructed in 1948 with additions constructed later. It was used as a machine shop and electroplating facility. These process areas are now out-of-service and the majority of the building is inactive. The Electronics Maintenance Group occupied the building. The current building activities include an electrical substation and excess material staging and storing. Process history in M Building indicates that some machining of U-238 occurred within the building. No research, development, or production activities using energetic materials have occurred in the building. Unknown quantities of contaminants, consisting of arsenic, cyanide, heavy metals, and machine oils, may be present due to activites related to the Plating Shops.

Fixed contamination in the M Building high bay area was identified as U-238 when the building was being prepared for Transition. The known spots have been removed and additional spots were identified by a 100% scan of the wood block floor. As a result, the entire wood block floor was removed as LSA waste. The contamination probably came from the machining of U-238, which history indicates was performed in this building.

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2. Purpose

This project will demolish M Building. The Non-CERCLA Decontamination of M Building consists of dismantling and disposal of the structure, slab and any subsurface structures such as sumps, drains and abandoned utility conduit. The building materials will be segregated and disposed of in a manner and location determined by Waste Management. At the completion of demolition activities, the soils beneath and surrounding the building will be characterized to assure no residual contamination.

Note: Prior to the removal of the slab, environmental sampling of the soils surrounding the sump in M-38 will be conducted to determine the integrity of the sump.

3. Site Information

M Building is located in the center of the main hill area of the plant site. Buildings adjacent to M Building include: the area of former C Building to the north, Building 40 to the north-east, H Building to the north-west, E Building to the west, DS Building across the road to the south, Building 25 across the road to the south-east, the area of the former Paint Shop and the Power House to the east of M Building. Also adjacent to M Building are the overhead utility lines which run over the north-east corner of the building and along the north side, the A Sub Station on the north side, a roadway along the east and south sides of the building, the Power House substation to the east, the argon tank for T Building to the south-east, and the east tower to T Building to the south of the building.

4. Industrial Safety and Hygiene

All tasks associated with this project will concur with the JSHA(s) developed for this project. Fugitive dust emission sampling will be conducted by Industrial Hygiene.

5. Radiation Protection Requirements

All wastes exiting the plant site will be surveyed by Rad Protection prior to being permitted to leave.

6. Environmental Compliance Requirements

A NEPA checklist and NESHAP screening will be completed prior to demolition. Appropriate measures will be taken to protect the storm water collection system from water or silt run-off from the job site.

7. Chemical and Waste Management Requirements

NOTE: All demolition wastes will be segregated into the following categories: brick and concrete rubble to be transported to Mound's Spoils Area, metals to taken off-site for recycling, construction debris to be taken off-site for disposal in a landfill. See section 5.

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7.1 Overview

Waste generated from the demolition of M Building will consist primarily of non-radioactive demolition or construction debris such as brick, mortar and concrete.. The concrete debris will be utilized as either clean fill at the Mound Site, or transported off-site to a local landfill for disposal. Other construction debris, as defined by Chapter 3745-400-01 of Ohio's Administrative Code, will also be disposed at a local approved landfill. Recyclable metal will be segregated to a reasonable extent, and transported to a local metal recycler for processing. Hazardous waste such as asbestos or ballasts from fluorescent lighting will be removed for disposal prior to the building demolition. Hazardous waste or mixed waste generated from M Building will be minimal. Process knowledge and results obtained from sampling activities will provide the basis for waste characterization.

7.2 Resource Conservation and Recovery Act (RCRA) Determination

M Building formally housed a plating process in an area located on the West side of the building. Preliminary sampling indicates the presence elevated levels of undesirable metals in the sludge contained in a sump pit located in this area of the building. Any material that present a RCRA concern will be removed for proper disposal.

7.3 Waste Packaging

Construction debris will be packaged utilizing bulk conveyance methods such as roll-offs or end dumps. This type packaging provides containment during transportation to the disposal location, but does not remain part of the final waste form. Concrete, mortar and brick will be transported to the Spoils Area for crushing, while other types of construction debris will go to a local landfill for disposal.
Hazardous material will be properly packaged and transported to Building 72 by Hazardous Waste Operations. At Building 72 the hazardous waste is prepared for off site disposal as defined in Mound Manual MD-70523.

Asbestos will be packaged and placed into transport containers for disposal at a local landfill under the guidance of Occupational Safety and Health Administration's 29 CFR 1 910.145 and the Environmental Protection Agency's 40 CFR 61.150.

7.4 Waste Streams and Volumes

The primary waste streams from M Building will be an estimated 67,950 cubic feet of concrete debris, 59,031 cubic feet of construction/demolition debris and 42,468 cubic feet of recyclable metal. The asbestos identified for removal represents approximately 2,700 cubic feet of waste. Hazardous and mixed waste volumes are expected to be minimal.

7.5 Waste Minimization

Structural steel will be segregated from the demolition debris for recycling purposes. Concrete will be crushed and used on site as clean fill if needed.

7.6 Curie Value Calculation

Process knowledge and radiological surveys indicates that any radioactive waste generated during demolition will be at very low concentration levels.

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7.7 Transportation and Disposal

Trucks with roll-off containers or end dump trucks will be the primary mode of transportation for concrete debris to the spoils Area and construction/demolition debris to a local landfill. Radioactive waste will be transported by highway or rail for disposal at the Nevada Test Site or Envirocare. Hazardous and mixed waste will be shipped by highway to an approved disposal site.

8. Project Execution/General Sequence of Work

Note: Due to the complexity of and the issues associated with this demolition it will be broken down into a pre demolition phase and four demolition phases to better address the issues dealing with that phase of the building demolition.

8.1 Pre Demolition/Post Decontamination Activities

8.1.1 Traffic Reroute during Demolition

See Appendix B. This reroute of traffic will be coordinated with other B&W and MMCIC field projects occurring during the same time period.

8.1.2 M Building USQs

USQs will be completed for any project work which might affect any nuclear facilities prior to commencing any these tasks.

8.1.3 Removal of the Tritium Exit Signs

This task will be performed under a Maintenance Service Request (MSR).

8.1.4 Removal of all Government Locks

This task will be performed under an MSR.

8.1.5 Assure as much Brine has been Drained from the Lines in M Building as Possible

This task will be performed under an MSR.

8.1.6 Salvage Equipment or Metal Left in the Building

The equipment in the M-47 Plating Shop has been sold by DOE and will be removed from the building by the owner. This effort will be coordinated with the Main Hill Project.

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8.1.7 Underground Utilities Isolation

NOTE: Prior to any tasks that require soil disturbance, the Project Superintendent will issue an Excavation Permit.

8.1.7.1 Domestic Water

The domestic water supply to the building will be shut off at the valve next to the A Substation at the north end of the building.

8.1.7.2 Sanitary Sewer

All connections to the sanitary sewer system will be plugged. This will include the access to the sanitary sewer when the Plating Shop sumps are removed.

8.1.7.3 Fire Suppression Water Line

The fire sprinkler system water supply to the building will be isolated at the riser valve and a thrust block poured to protect the system from pressure surges.

8.2 Phase 1: Demolition of the Northeast corner of the building and Preserving the Stanchion Support

(CAUTION)
The manufacturer of the mechanical shear recommends a 75-foot exclusion zone to protect against personnel injury that may be cause by flying debris. No one will be permitted within a 75-foot distance of the Shear while it's cutting. (Except-Heavy Duty Operators who will remain in the equipment cabs.)

8.2.1 Stabilize the Pipe Stanchion

Weld knee braces in each corner of the north and south face of the stanchion support. Weld cross braces on the east and west ends of the stanchion support.

8.2.2 Clear the roof membrane and corrugated metal under layment from the Stanchion Support

8.2.3 Brace the North and East Walls

8.2.4 Remove the Parapet wall down to the roofline from Column 12 to Column A.

8.2.5 Starting at column 12 remove the east wall outer bricks and blocks starting at the roof line and working down to the ground.

8.2.6 Working in the northeast direction, remove the roof material and trusses so that the debris falls inward to the east. Continue to the original building at column A.

8.2.7 Remove the north wall making sure not to damage the pipe stanchion and allowing the wall to fall southward.

8.2.8 Load the building mortar and metal debris into separate roll-offs.

8.2.9 Remove floor slab to within four feet of the stanchion base.

8.2.10 Load slab debris in roll-offs.

8.3 Phase 4: Demolition of the South side Two Story (Electronics Shop and Plating Shop) and the South Addition

8.3.1 Begin demolition at East End of the south section (one story)

Remove the brick and block facing to expose the building steel. Use the grappler at center location to hold beam/bar joist to be cut with the shears. Lower the beam to the ground.

8.3.2 Segregate the steel from the brick and block.

Stage building debris for possible ramp.

8.3.3 When the one story section has been demolished, begin demolition of the two story

Using a hoe-ram or shear, remove the brick and block to expose the building steel. Begin at the top of the second story and remove the beams/joists as for the one story, but only proceed to the first column line. Once the beams/joists have been removed from the first bay of the second story, proceed to remove the beams/joists

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from the corresponding bay on the first floor. Continue alternating between the second and first stories, removing only one bay at a time.

8.3.4 After the beams/joists have been removed, begin to the south column line.

Hold each column with the grappler and sever it using the shear.

8.3.5 After the south column line has been removed, begin to remove the north column line.

Take special care not to disturb the south wall of the original M Building.

8.4 Phase 3: Demolition of the East and West Single Story Additions, Including the West side Penthouses

8.4.1 Single Story West and East Addition

8.4.1.1 Single Story West Addition

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Begin demolition at the south end of the single story addition to the building. Using the hoe ram or shear, heavy duty shall cut out the masonry brick of the south wall of the building.

(CAUTION)
The manufacturer of the mechanical shear recommends a 75-foot exclusion zone to protect against personnel injury that may be cause by flying debris. No one will be permitted within a 75-foot distance of the Shear while it's cutting. (Except-Heavy Duty Operators who will remain in the equipment cabs.)

(CAUTION)
E Building entrances and exits within the 75-foot exclusion zone will be blocked off and/or protected

Using the shear cut up the roof around the 254P penthouse southeast structural steel beam.

(NOTE)
The progression and direction of the building demolition will ultimately be determined in the field.

Penthouse 254P

Using the shear cut the penthouse southeast support beam. The penthouse will begin to sag.
Proceed northwest, cutting up the roof and pulling in the west wall masonry around the 254P penthouse southwest structural steel beam. Using the shear cut the penthouse southwest support beam. The penthouse will continue to sag. Cut up the roof and the west wall masonry around the 254P penthouse northwest structural steel beam. Using the shear cut the penthouse northwest support beam. It will continue to sag. Setup the grapple on the west side of the penthouse prior to this cut, as a precautionary measure, to ensure that the it does not fall into E Building. Using the grapple, pull the penthouse down to the ground away from the original building then cut the northeast support beam with the shear. Continue north, cutting up the roof and pulling in the west wall up to the southeast corner of the 250P penthouse southeast structural steel beam.

Penthouse 250P

Using the shear cut the penthouse southeast support beam. The penthouse will begin to sag. Continue northwest, cutting up the roof and pulling in west wall masonry around the 250P penthouse southwest structural steel beam. Using the shear, cut the penthouse southwest support beam. The penthouse will continue to sag. Cut up the roof and the west wall masonry around the 250P penthouse northwest structural steel beam. Using the shear, cut the penthouse northwest support beam. It will continue to sag. Setup the grapple on the west side of the penthouse prior to this cut, as a precautionary measure, to ensure that the it does not fall into E Building. Using the grapple, pull the penthouse down to the ground away from the original building then cut the northeast support beam with the shear. Continue north, cutting up the roof and pulling in the west wall up to the southeast corner of the 251P penthouse southeast structural steel beam.

Penthouse 251P

Using the shear cut the penthouse southeast support beam. The penthouse will begin to sag. Continue northwest, cutting up the roof and pulling in the west wall masonry around the 251P penthouse southwest structural steel beam. There is a masonry wall that runs west to east just north of the 251P penthouse. This wall shall be cleared along with the west wall masonry as the building demolition proceeds north. Using the shear cut the penthouse southwest support beam. The penthouse will continue to sag. Cut up the roof and west wall masonry around the 251P penthouse northwest structural steel beam. Using the shear cut the penthouse northwest support beam. It will continue to sag. Setup the grapple on the west side of the penthouse prior to this cut, as a precautionary measure, to ensure that the it does not fall into E Building. Using the grapple, pull the penthouse down to the ground away from the original building then cut the northeast support beam with the shear. Continue north, cutting up the roof, structural steel beams and joists and pulling in the west wall up to the northwest corner of the building.

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(CAUTION)
Protect the underground utilities vault at the northwest corner of the building.

(NOTE)
Size reduce concrete and masonry brick, as necessary, to fit into a roll-off container. Load debris into waste container using the front-end loader or grapple or stage debris to be used as backfill. Segregate structural steel from the construction debris as determined practical.

8.4.1.2 Single Story East Addition

Begin demolition at the southwest corner of the single story addition to the building. Using the hoe ram or shear, heavy duty shall cut out the masonry brick at the southeast corner of the building. Proceed north cut up the roof and structural steel beams and joists and pulling in the east wall up to the northeast corner of the building.

8.5 Demolition of the Original M Building Structure

At this point of the demolition process all the additions to the original building will have been demolished.

8.5.1 Starting with the low bay sections, remove the brick and block walls on the east, south, and west sides.

Segregate this material and load into haulers for transport to the Mound Spoils Area.

8.5.2 Brace the north wall.

8.5.3 Using the grappler and shear, remove the penthouse on the roof of the east low bay section.

8.5.4 Using the grappler and shear, remove the roofing material from both low bay sections and the high bay area and load into roll-offs as construction debris.

8.5.5 At this point only the structural steel and the north wall of the original building will be left standing.

Starting at the south end of the building working to the north use the grappler at center location to hold beam/bar joist to be cut with the shears. Lower the beam to the ground. Hold each column with the grappler and sever it using the shear. Continue this process until only the north wall is left.

8.5.6 Using the grappler and shear pull the north wall to the south away from the A Substation and the stanchion lines.

8.6 With the building demolished down to the slab, soil samples will be taken through the slab around the Plating Shop sumps and other areas of potential contamination to determine if any contamination has leached out into the surrounding soils.

8.7 Remove the slab, sumps and any contaminated soil identified during the sampling process.

The footers will be removed down to two feet below grade.

8.8 Site Restoration

8.8.1 Backfill the area to grade and finish with gravel so the area can be used for parking .

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Appendix P

Operable Unit 9, Site Scoping Report: Volume 11 - Spills and Response Actions

ENVIRONMENTAL RESTORATION PROGRAM

OPERABLE UNIT 9,
SITE SCOPING REPORT
VOLUME 11 - SPILLS AND RESPONSE ACTIONS

MOUND PLANT
MIAMISBURG, OHIO

March 1992

DEPARTMENT OF ENERGY
ALBUQUERQUE FIELD OFFICE

ENVIRONMENTAL RESTORATION PROGRAM
TECHNICAL SUPPORT OFFICE
LOS ALAMOS NATIONAL LABORATORY

FINAL
(Revision 0)

Signature Page

This report is Volume 11 of a multiple-volume Site Scoping Report providing the background information pertinent to the remedial investigation/feasibility study (RI/FS) of the Mound Plant. Under the terms of the Federal Facility Agreement between DOE and US EPA, this report is submitted to US EPA for approval.

This report is approved by US EPA only for the purposes of scoping the RI/FS, and approval does not imply concurrence with the interpretations presented herein. It is recognized that additional information will be collected during the RI/FS and may supersede information contained in this report.

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ACRONYMS

AEA	Atomic Energy Act
AEC	Atomic Energy Commission
AL	Albuquerque Operations Office
AOC	area of concern
CEARP	Comprehensive Environmental Assessment and Response Program
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
BVA	Buried Valley aquifer
DAO	Dayton Area Office
DOE	U.S. Department of Energy
EPA	U.S. Environmental Protection Agency
EG&G-MAT	EG&G-Mound Applied Technologies
ER	Environmental Restoration
EROS	Emergency Response Online System
ERS	Effluent Removal System
FFA	Federal Facilities Agreement
FOIA	Freedom of Information Act
HEPA	high efficiency particulate air filter
HRS	Hazard Ranking System
L	liter
mL	milliliter
MRC	Monsanto Research Corporation
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
OEPA	Ohio Environmental Protection Agency
PCB	polychlorinated biphenyl
PVC	polyvinyl chloride
PR	preliminary review
RAPCA	Regional Air Pollution Control Authority
RCG	radioactivity concentration guide
RCRA	Resource Conservation and Recovery Act
RFA	RCRA Facilities Assessment
RQ	reportable quantity
SNAPP	space nuclear auxiliary power
SSP	Site Survey Project
SWMU	solid waste management unit
VSI	visual site inspection
WTS	Waste Transfer System

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1. INTRODUCTION

The U.S. Department of Energy (DOE) Mound Plant, Miamisburg, Ohio, was placed on the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) National Priorities List (NPL) on November 21, 1989 (54 Federal Register 48184). Pursuant to its NPL status, the DOE signed a CERCLA Section 120 Federal Facilities Agreement (FFA) with the U.S. Environmental Protection Agency (EPA) that became effective October 11, 1990. A similar agreement is in negotiation between the DOE and the Ohio EPA (OEPA) (December 1991). The terms of the FFA require that the DOE develop and implement remedial investigations and feasibility studies and conduct interim remedial actions in order to ensure that environmental impacts associated with past and present activities at the site are thoroughly investigated and appropriate action is taken to protect the public health and welfare and the environment (EPA 1990).

The Albuquerque Operations Office of the DOE established the Environmental Restoration (ER) Program in 1984 to collect and assess environmental data in order to develop a conceptual site model, assess both the nature and extent of contamination, and identify potential exposure pathways and potential human and environmental receptors. These activities have been conducted under DOE policy for all facilities to comply with applicable environmental regulations. In order to provide EPA with sufficient information and data gathered during these previous investigations, a multi-volume scoping report providing background information has been prepared. The Site Scoping Report will provide descriptions and summaries of the current conditions and characteristics of Mound Plant and will consist of at least the following volumes:

1. Groundwater Data: February 1987 - July 1990
2. Geologic Log and Well Information Report
3. Radiologic Survey Report
4. Engineering Map Series
5. Topographic Map Series
6. Photo History Report
7. Waste Management Report
8. Environmental Monitoring Data
9. Annotated Bibliography
10. Permits and Enforcement Actions
11. Spills and Response Actions

1.1. SCOPE OF REPORT

This report provides summaries of past product and hazardous substance spills, including identification of materials spilled, amounts and locations, and response actions conducted. Data for this report were compiled from a review of records and incident reports maintained in the plant safety office. The safety office records are maintained by the plant's operating contractor, currently EG&G Mound Applied Technologies (EG&G-MAT), formerly Monsanto Research Corporation (MRC), a subsidiary of Monsanto Chemical Company. Limited data were also obtained from health physics reports that allowed some correlation of dates and materials. The record is not entirely complete, as some incidents appear in one record that are not correlated to the other. Safety records from the 1950s and 1960s appear to be incomplete. Records from the 1970s and 1980s increase in regularity and detail, reflecting the increased standards imposed by the Occupational Safety and Health Act (29 CFR 1904) and reporting requirements relating to compliance of federal and state environmental regulations authorized under the Clean Air Act, the Clean Water Act, the Resource Conservation and Recovery Act (RCRA) and CERCLA (DOE 1991b).

Only incidents that resulted in a spill or an environmental release are included in this report. Laboratory and tabletop accidents, releases that were entirely contained within buildings, and personal injuries and radiation or hazardous substance exposures that did not apparently result in an environmental release are beyond the scope of this report. Under the Privacy Act of 1974 (PL 93-579), names of individuals are additionally excluded from this report.

Summaries of response actions conducted by EPA and OEPA were requested under the Freedom of Information Act (FOIA). EPA deferred the FOIA request until early in 1992, so little information from the federal agency is available at this writing. OEPA provided information from the records in the Emergency Response Online System (EROS) database. The Emergency Response Section maintains the EROS database and is the designated reporting point for spills and unauthorized discharges in Ohio.

Summaries are also provided for 1) the visual site inspection conducted by EPA as part of the RCRA Facilities Assessment (RFA) and 2) activities conducted by DOE as part of the Comprehensive Environmental Assessment and Response Program (CEARP), the forerunner of the ER Program. Sites identified by these assessments are cross-referenced to the current potential release sites included in the ER Program.

2. SUMMARY OF SPILLS AND ENVIRONMENTAL RELEASES

2.1. RECORDS OF THE SAFETY OFFICE

As a government-owned, contractor-operated facility, Mound Plant must operate in compliance not only with Executive Orders and Orders of the DOE, formerly the Atomic Energy Commission (AEC), under the Atomic Energy Act (AEA) (42 U.S.C. 2201 et seq.), but with federal and state statutes and regulations, and corporate safety policies. EG&G-MAT has been the operational contractor since 1988, MRC was the operator from 1948 to 1988 (DOE 1991a). Under orders from the AEC and DOE, MRC and EG&G-MAT have conducted accident and incident investigations and maintained records of these investigations.

DOE Order 5484.1 establishes the requirements and procedures for the reporting of information concerning environmental protection, safety, and health protection for all DOE facilities. Three types of investigations are defined by DOE Order 5484.1: 1) Type A board investigations in which a conflict of interest or sensitive issue may permit only DOE personnel to be appointed; 2) Type B board investigations in which all contractor employees or both DOE and contractor employees may be appointed; and 3) Type C non-board investigations conducted by DOE contractor personnel when their operations are involved. Type A investigations typically involve a fatal accident or an incident so severe that an in-depth investigation is justified. At the other end of the spectrum, a "near miss" incident is defined by the operating contractor as one that meets minimum criteria for which an investigation will be conducted. An "unusual occurrence" is defined by DOE Order 5000.3 as an unplanned event that has programmatic significance such that it adversely affects, or potentially affects the performance, reliability or safety of a facility.

Table II.1 is a summary of data compiled by review of accident and incident investigation reports maintained in the plant safety office. Only incidents that apparently resulted in a spill or an environmental release are included in the compilation. By and large, the majority of spills and releases listed in Table II.1 qualified as Type C investigations, unusual occurrences or near misses. Investigation and reporting of the latter was handled by MRC and EG&G-MAT in much the same manner as Type C investigations, although they did not truly qualify as such.

Only one incident in this record was observed to have qualified to trigger a Type A investigation board. This was the tritium release of November 8, 1989, in which over 38,000 curies of tritium were accidentally released to the atmosphere. This incident resulted in a formal DOE review panel, a news release and a public press conference. The incident investigation report was completed January 1990 (Table II.1) A smaller tritium release of 132 curies on March 13, 1973, also resulted in a formal

Table II.1. Summary of Spills and Environmental Releases from Records of the Safety Office

Date	Location	Material	Amount	Incident	Response
02/12/63	South end SW Bldg.	H-3	"Low-level"	Fire of paper covering metal during cutting and drumming for disposal (63-13).	MRC Incident Investigation Report No. 63-13 (2/14/63).
03/04/63	Historic landfill	Misc. chemicals	Unknown	Explosion of incompatible chemicals in deteriorated containers; no radioactivity.	MRC Incident Investigation Report No. 63-19 (2/19/63).
10/27/64	SM Bldg.	Pu-238	Unknown	Methanol vapors inside fumehood exploded; possible air release.	MRC Incident Investigation Final Report 11/23/64 - record incomplete. Use of flammable solvents within gloveboxes prohibited by AEC.
02/26/65	SM Bldg.	Pu-238	Unknown	Ruptured can of trash in Room 26; possible air release; possible water release.	MRC report 3/2/65 - record incomplete.
03/08/65	SM Bldg.	Pu-238	Unknown	Acid release in Room 59; possible air release.	MRC report 3/8/65 - record incomplete.
08/27/65	SM Bldg.	Pu-238	Unknown	Fire in Room 38; possible air release.	MRC report 9/7/65 - record incomplete.
05/20/66	SM Bldg.	H-3	Unknown	Unidentified release of tritium to SW stack.	MRC Incident Investigation Report No. 66-26 (5/27/66). Recommendations to re-evaluate mechanical and engineering conditions of ERS.
09/08/67	WTS west of SM Bldg.	Pu-238	Unknown	Flanges in line found unbolted; low-risk line contaminated, including soil to 15 ft downslope; high-risk line not in use yet.	MRC Incident Investigation Report No. 67-21 (10/10/67). Soil cleanup proposed (no cleanup guideline given) with periodic system inspections.
11/09/67	Wasteline south of SW/R Bldgs.	"Low-level radioactivity"	1,500-2,000 gals	During wasteline repair wastewater spilled across road to storm drains and then to drainage ditch; about 7.65 millicuries released.	MRC Incident Description 11/17/67. 10 on-plant and 7 off-plant water samples collected 5 to 20 minutes after spill; highest air reading 1200 dis/min/mL; highest water reading 216.0 dis/min/mL at culvert exit to drainage ditch.
03/30/68	SM Bldg.	Pu-238	Unknown	Reversal of air flow in SM stack; possible air release.	MRC Incident Investigation Report No. 68-8 (4/10/68).

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Date	Location	Material	Amount	Incident	Response
04/03/68	SM Bldg.	Pu-238	Unknown	Explosion in glovebox in Room 35A; possible air release.	Interim Report 4/18/68 by DAO - record incomplete. New PP Bldg. facility evaluated to ensure similar incident could not occur.
01/23/69	WTS below WD Bldg.	Pu-238	1,000(?) gals	High-risk caustic solution spilled from a leak in the pipeline.	MRC Investigation Report 2/11/69. Line repaired; at least seventy-five 30- and 55-gal drums filled with contaminated soil (as of 1/25/69); report of 2/11/69 noted that four known leaks occurred since May 1968.
10/07/70	R Bldg.	MoF_6 HF	About 1 pound	Fracture of transfer line and discharge of cylinder to fumehood and R Bldg. stack; included molybdenum hexafluoride, hydrogen fluoride, and molybdenum oxyfluorides, no radioactivity involved.	MRC Incident Investigation Report No. 70-18 (10/19/70).
12/70	T Bldg. Wasteline	Po-210	Unknown	Routine samples at SD influent showed increased alpha activity; source traced to cracked wasteline west of T Bldg.; seepage found to have migrated across to sanitary wasteline in adjacent manhole.	Memo to AL from DAO 5/26/72 - record incomplete. 39 30-gal drums of soils excavated and shipped off-plant for disposal by mid-March 1971; estimated 20 μCi removed; leaks repaired.
02/10/71	SM Bldg.	Pu-238	49.9 μCi	Fire in Rooms 27 and 35; releases mostly through stack; little or no material tracked by firefighters.	MRC Incident Investigation Report No. 71-5 (2/24/71). Mound and Miamisburg fire departments responded; sampling at stack measured indicating 49.9 μCi represented 62.4% of RCG.
05/26/71	SW Bldg.	H-3	1,100 Ci	Condensate liquid sprayed area during drainage; material vented to stack.	MRC Incident Investigation Report No. 71-16 (6/9/71). Cause of pressurization unexplained; gauges installed to monitor.
09/02/71	HH Bldg.	H-3	3,600 Ci	Liquid nitrogen trap ruptured causing tritium contaminated gas and oil to be vented to atmosphere.	MRC Incident Investigation Report No. 71-25 (9/14/71).
11/03/71	PP Bldg.	Pu-238	Unknown	Fire detection sprinkler head failed, causing water to cover floors in filter banks; no significant increase in stack effluent.	MRC Incident Investigation Report No. 71-28 (11/11/71).

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Date	Location	Material	Amount	Incident	Response
11/03/71	SD System/Outfall #1 Sampling Station	Pu-238		Increase in gross alpha concentration in standard 24-hour sample; activity increased from 0.5 (normal) to 205 dis/min/mL; dropped to 15 dis/min/mL by 11/12/71.	MRC memo to file 11/9/71 - record incomplete. Source traced to termination activities in SM Bldg. where sanitary drains left uncapped; pipes plugged.
11/05/71	Outfall #1 Sampling Station	H-3	3.75 Ci	Increase in tritium concentration in standard 24-hour sample; about 160,000 gals water with 6.2 μCi/ℓ tritium discharged through pipeline to river.	MRC Incident Investigation Report No. 71-29 (11/12/71). Source tentatively identified as SW Bldg.; quantity of tritium released estimated to be half that released in a "normal" month and about double that released from SD system in "normal" month.
12/09/71	SW Bldg.	H-3	270 Ci	Seal on vacuum pump ruptured, releasing oil and water vapors to atmosphere.	MRC Incident Investigation Report No. 71-35 (12/27/71). Recommendations to check and modify all vacuum pumps.
01/17/72	SM Bldg.	Pu-238	Unknown	Frozen water lines in filter banks burst, releasing water to building and outside areas, plant drainage ditch.	MRC Incident Investigation Report No. 72-4 (2/17/72). Release caused exceedance of annual goal for plutonium in January alone, no concentration data given; new asphalt laid on the old pavement behind SM Bldg.; formal Type B investigation committee report 5/17/72.
03/09/72	HH Bldg.	H-3	150 ± 75 Ci	Repair of raw gas system cut by maintenance personnel causing about 56 liters of 0.1% tritium to be released to the atmosphere.	MRC Incident Investigation Report No. 72-7 (3/16/72). Continuous sampling stations both on- and off-plant remained below 1% of RCG.
04/26/72	PP Bldg.	Pu-238	100 gals	Contaminated water (12,000 dis/min/mL) from process chill system ran to ground south of PP Bldg.	MRC Incident Investigation Report No. 72-12 (5/4/72). Twenty 55-gal drums (1/2 full) of contaminated soil removed from area; decontamination level not reported.
05/25/72	WD Bldg.	Pu-238	About 4,000 gals	Overflow of low risk tanks to storm sewer and plant drainage ditch.	MRC Incident Investigation Report No. 72-16 (6/15/72). Contamination level 523 dis/m/mL below hazard reportable to AEC, but above allowable discharge; safety alarm system modified.

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Date	Location	Material	Amount	Incident	Response
07/23/72	SW Bldg.	H-3	Unknown	Repair of pipe to a drip tank in the Effluent Recovery System released tritium to the stack.	MRC Incident Investigation Report No. 72-20 (7/27/72).
07/28/72	SW Bldg.	H-3	Unknown	Replacement of a drying tower drainline resulted in release of tritium to stack.	MRC Incident Investigation Report No. 72-21 (8/3/72).
08/25/72	PP Bldg.	Pu-238	Unknown	Repair of glovebox by carpenter resulted in some contamination tracked around area.	MRC memo 9/6/72 - record incomplete. Work violated several standard operating procedures.
09/08/72	SW Bldg.	H-3	Unknown	Repair on 3/8 inch copper line of Effluent Removal System resulted in about 20 mL to be leaked to floor and vapors to be emitted through the stack.	MRC Incident Investigation Report No. 72-26 (9/15/72).
09/08/72	SM Bldg. Storm Sewer	Pu-238	Unknown	Low-risk wastewater tank overflowed onto ground and into storm sewer.	MRC Incident Investigation Report No. 72-27 (9/18/72). Elevated levels of plutonium (420 dis/m/mL) measured in storm sewer outflow to drainage ditch; water sample taken in drainage ditch 9/9/72 showed no elevated activity - actual activity level not noted.
10/27/72	Firefighter Training Pits	Stoddard solvent	About 50 gals	Solvent released from open drain to plant drainage ditch from one pit while other pit used for fire training.	MRC Incident Investigation Report No. 72-29 (11/2/72). Downstream sample indicated only a trace of solvent; no data values reported.
03/13/73	SW Bldg.	H-3	132 Ci	Repair of ball valve on Effluent Recovery System resulted in release of liquid to prepared container and subsequent atmospheric release.	MRC Incident Investigation Report No. 73-08 (3/23/73). Diffusion calculations indicated 2.8 times the RCG at the plant boundary as averaged over a 24-hour period; formal investigation committee was formed 3/14/73; a news release was issued 3/15/73 and a press conference was held 3/16/73.

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Date	Location	Material	Amount	Incident	Response
06/06/73	Powerhouse	Fuel oil	50-100 gals	Overflow of storage tanks during filling.	MRC Incident Investigation Report No. 73-16 (6/15/73). Earthen dike at outfall of storm sewer prevented some material from entering stream; water sample downstream showed a high of 172.5 mg/L oil and grease on 6/6/73; 8.2 mg/L on 6/7/73; and no detect on 6/8/73.
07/12/73	SM Bldg.	Pu-238	7.8 μCi	Installation of new HEPA filters - blowers not shut down, release noted in stack monitors and blowers immediately turned off.	MRC Incident Investigation Report No. 73-20 (7/19/73). Release of 7.8 μCi calculated from stack data; 2.6% of RCG at the fenceline and 68.6% of RCG at Library Park, Miamisburg.
07/18/73	SW Bldg.	H-3	865 Ci	Rupture of welded joint in thermal diffusion column ion chamber; uncombined gaseous state tritium released to atmosphere.	MRC Incident Investigation Report No. 73-21 (8/3/73). Routine and special tritium air samples at the fenceline only slightly higher than normal; no data values reported.
08/30/73	Sewer north of WD Bldg.	"Radioactivity"	Unknown	Stones tossed out of process waste sewer contaminated surrounding soil.	MRC Incident Investigation Report No. 73-23 (9/10/73). Debris bagged and placed in area involved covered about 48 square feet; one 30-gal drum for disposal.
12/26/73	Plant Drainage Ditch	Oil slick	Unknown (>100 gal?)	Oil slick observed on water in plant drainage ditch.	MRC Incident Investigation Report No. 73-33 (1/15/74). Inspection for source of spill into drainage ditch above Bldg. 51 waste incinerator; thought not to be fuel oil or waste oil from Bldg. 51 tank (although no inventory records for the tank); volume greater than 6/6/73 incident; possible source at powerhouse but no source confirmed; water samples taken, highest "oil" content 84, 247 mg/L at junction of Miami-Erie Canal on 12/16/73.

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Date	Location	Material	Amount	Incident	Response
02/02/74	Miami-Erie Canal	Pu-238	Unknown	Reinvestigation of offsite plutonium contamination in north and south canal, city ponds and plant drainage ditch.	MRC Incident Investigation Report No. 74-13 (9/16/74). Accident investigation committee formed May 1974 to find cause for plutonium in Miami-Erie Canal and city ponds; report details sequence of events surrounding 1/23/69 spill; release estimated at 400 Ci (uncertainty suggests 200-800 Ci), with 158 Ci drummed in 1969, 22 Ci left on hillside and 220 Ci left in pipe break hole; additional cleanup at hillside initiated and 2,700 cu. ft. of soil removed (Black 1974); subsequent detailed study of Miami-Erie Canal (Rogers 1975).
07/18/74	WTS below WD Bldg.	Pu-238	Unknown	Leak at joint in transfer line discovered.	"Report of Property Damage or Loss" (Form No. AEC 283) 7/24/74 - records incomplete. Thirty-four drums of contaminated soil excavated for disposal; elimination of WTS pipeline recommended.
08/23/74	West of WD Bldg.	Pu-238	1 liter (7 mCi)	Leak in steel drum containing high-risk acid waste found about 40 ft west of WD Bldg. dock area.	MRC Incident Investigation Report No. 74-14 (8/30/74). Removal of silt, dirt, and asphalt to level of 0.03 nCi/g; 120 drums and 14 boxes removed by 8/27/74.
01/21/75	R Bldg.	"Radioactive dust"	Unknown	Removal of contaminated copperline and sheet metal duct work; possible air release.	MRC Incident Investigation Report No. 75-02 (1/30/75).
11/12/75	WD Bldg	Pu-238	Unknown	Flow of air from high-risk filter bank to low-risk bank resulted in possible air release.	MRC Incident Investigation Report No. 75-10 (11/20/75).
01/01/77	SW Bldg.	H-3	123 Ci	Sprinkler line froze and burst causing a short in glovebox control system and release of tritium to atmosphere.	"Report of Property Damage or Loss" (Form No. AEC-283) 3/31/77 - records incomplete.
12/11/77	WD Bldg.	"Alpha"	10,000 gals	Pipe failure in sprinkler system; spread of water controlled by temporary dike containment barrier.	"Report of Property Damage or Loss" (Form No. AEC-283) 12/13/77 - records incomplete.

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Date	Location	Material	Amount	Incident	Response
03/28/78	SW Bldg.	H-3	Unknown	Apparent atmospheric release from vane pump failure.	Informal Committee Report 5/3/78 - records incomplete.
06/15/78	SW Bldg.	H-3	805 Ci	Release occurred while connections were being made between a secondary storage container to proper containment.	MRC memo to file 6/16/78 of unusual occurrence. Total amount of tritium released was calculated to be 805 Ci with 99% of this as elemental tritium.
03/24/83	M Bldg.	Copper cyanide	8 gals	About half of tank of bath solution (800 gms copper cyanide in water $Cu(CN)_2$) lost into floor drains to dilution tank; no visible evidence of dilution drainage.	MRC Incident Investigation Report No. 83-5 (4/13/83). No measurable impact to Sanitary Treatment Facility; the dilution tank observed to be losing water somewhere other than the exit drain; trace of copper found at sanitary waste treatment plant; no data values reported.
04/13/83	M Bldg.	Silver cyanide	4.2 gals (2 lbs cyanide)	Unused plating solution released by accident to floor drains and sanitary sewer.	MRC Incident Investigation Report No. 83-5A (5/5/83). No measurable impact to Sanitary Treatment Facility; no data values reported.
08/18/83	Powerhouse	No. 2 Fuel Oil	10 gals	Leak from oil pump drained to trench in floor and to storm sewer, the plant drainage ditch, and the Great Miami River.	MRC Incident Investigation Report No. 83-15 (8/23/83). OEPA inspected spill site.
05/31/84	Bldg. 19	Cobalt-60 Cesium-137	Unknown	About 20 linear ft of steel and iron pipes removed from sump in Room 16 of T Bldg. spread contamination to truck and pavement at Bldg. 19 during salvage operations.	MRC Incident Investigation Report No. 84-11 (6/15/84). About one-half pound of dirt removed from floors of T Bldg.; small section of asphalt removed at Bldg. 19 and some of the bed of the truck used was removed and boxed for disposal.
04/17/85	SW Bldg.	Zinc chromate Brine solution	300 gals	During turning on new pipeline, drain plug left off; brine ran onto floor and out onto driveway on west side of bldg.	MRC Incident Investigation Report No. 85-10 (4/29/85). Below EPA reportable volume; investigation report recommended replacing zinc chromate, a suspected carcinogen, with another substance.
04/11/85	Powerhouse	Refrigerant	1,000 lbs	Loss of refrigerant occurred over period of time; released to atmosphere.	MRC Incident Investigation Report No. 85-11 (5/1/85). No environmental impact noted.

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Date	Location	Material	Amount	Incident	Response
08/28/85	SW Bldg.	H-3	50 Ci	Unplanned transfer between holding tank and effluent removal system; tritium released through SW stack.	MRC Incident Investigation Report No. 85-22 (9/11/85). Two separate incidents recorded.
08/28/85	SW Bldg.	H-3	Unknown	Leak in piping at condensate tank.	MRC Incident Investigation Report No. 85-22 (9/11/85). Contribution to 50 Ci released through stack unknown.
01/09/86	A Bldg.	Cooling brine (zinc chromate, calcium chloride)	600 gals	During maintenance, a ventline was fractured that released chilled water brine (18% by volume calcium chloride and 1,600 ppm zinc chromate) into basement of A Bldg.; some unknown quantity reached drainage ditch and was diverted to overflow pond.	MRC informal investigation report 1/15/86. Since zinc chromate was not listed, the incident was not reportable; 300 gals recovered in A Bldg. basement, 360 gals (diluted) recovered in drainage ditch below Bldg. 29; about 100 gals lost downstream.
04/24/87	SW Bldg.	Cooling brine (calcium chloride, zinc chromate)	2,100 gals	Leak in cooling pipes on roof of SW Bldg. discharged to storm sewer and plant drainage ditch; remainder of spill of brine solution (162 ppm chromium VI) controlled by diversion into 55-gal drums.	MRC Incident Investigation Report No. 87-11 (5/1/87). Spill exceeded concentration and reportable quantities and the National Response Center, OEPA, and City of Miamisburg notified; data from the composite sampler on the NPDES outfall 001 pipeline indicated that nearly all the brine was discharged to the Great Miami River.
05/04/87	Bldg. 57	Chlorine gas	<150 lbs	Improper removal of regulator from bottle of compressed gas resulted in atmospheric release of chlorine gas.	MRC Incident Investigation Report No. 87-10 (5/8/87). No environmental impact noted.
07/06/87	Powerhouse	Cooling brine (calcium chloride, zinc chromate)	475 gals	Leak in water makeup line resulted in discharge to storm sewer and plant drainage ditch to the overflow pond where it was contained; water contained 134 ppm chromium VI (0.54 lbs).	MRC Incident Investigation Report No. 87-13 (7/14/87). Spill did not exceed reportable quantities, no regulatory agencies notified.
08/17/87	M Bldg.	Beryllium	Unknown	Suspected air pollution problem - none positively identified; some Be found in cooling water (516 μg/L) probably splashed during machining operations.	MRC Incident Investigation Report No. 87-18 (9/30/87). RAPCA notified; no actual environmental release was documented.
09/17/87	M Bldg.	Oil (low odor 410 resaturant)	Unknown	Rainfall washed oil applied during roof repair down drains and into plant drainage ditch and the overflow pond.	OEPA notified by letter from MRC 9/17/87. No incident report found.

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Date	Location	Material	Amount	Incident	Response
09/17/87	WD Bldg.	Calcium carbonate	30,000 gals	High pH (11.7-11.8) wastewater released from WD Bldg. (87-21).	MRC Incident Investigation Report No. 87-21 (10/8/87). OEPA notified 9/17/87.
12/15/87	Bldg. 2	Cooling water (ethylene glycol)	22,000 gals	Leak in chilled water system resulted in discharge of solution of 30% by volume ethylene glycol to plant drainage ditch and overflow pond (87-13).	MRC Incident Investigation Report No. 87-31 (1/5/88). Did not involve hazardous substance as defined by EPA; dilution of glycol with water in overflow pond prevented discharge of concentrated glycol to Great Miami River.
01/06/88	Powerhouse	#2 Fuel oil	200 gals	Overflow of storage tank to surrounding soil; flow contained before it reached the plant drainage ditch.	MRC Incident Investigation Report No. 88-1 (1/26/88). Spill did not reach overflow pond or Great Miami River; not reported as environmental problem.
05/26/88	M Bldg.	Waste oil (Cimperial 1011) Freon	55 gals	Drum ruptured violently expelling contents on walls and driveway surfaces and grassy area west of M Bldg.	MRC Incident Investigation Report No. 88-13 (6/14/88). Near-miss accident; "floor dry" used to absord ponded liquid; drum moved.
05/27/88	OS West Bldg.	Cooling water (ethylene glycol)	2,250 gals	Valve failure on new installed air conditioning units resulted in loss of chilled water solution (30% by volume ethylene glycol) to sanitary sewer and waste treatment plant.	MRC Incident Investigation Report No. 88-15 (6/7/88). Liquids contained in sanitary system and not released to environment; 200,000 gal glycol-contaminated sewage was stored; other half of waste treatment plant continued unimpeded.
09/01/88	SW Bldg.	H-3	300 ± 50 Ci	Erroneous use of pure hydrogen compressed gas in tritium aqueous waste recovery system resulted in release of elemental tritium to stack.	MRC memo from Tritium Environment and Safety Overview Committee (9/15/88). Below DOE and other regulatory reportable quantity (RQ) limits; calculated radiation dose to off-plant individual was 0.00001 mrem, well below RQ of 25 mrem by 40 CFR 61.
07/20/89	Powerhouse	Fuel oil	10-15 gals	During the moving of a 500-gal tank, the drain plug was broken, releasing fuel oil to the soil on the southside of the powerplant.	EG&G-MAT Incident Investigation Report No. 89-21 (8/1/89).

Table II.1. (page 10 of 10)

Date	Location	Material	Amount	Incident	Response
11/08/89	SW Bldg.	H-3	38,268 Ci	During unloading of a container, tritium was released into a fumehood and then exhausted to the stack and to the atmosphere.	DOE Type A Investigation Board Report January 1990; Ohio Emergency Management Agency, Miami Valley Emergency Management Authority, City of Miamisburg and EPA/Southwest Ohio District Officer were notified; some delay was incurred by DOE HQ's lengthy approval process; press release and press conference were held the evening of the incident; final calculated off-plant maximum individual exposure was 0.004 mrem; analysis of water, grass, and milk samples indicated no significant impact.
12/21/89	SW Bldg.	H-3	27 Ci	Leak occurred during removal of corroded section of condensate line resulting in tritium diffused to stack and atmosphere; initial estimate was 54 Ci.	EG&G-MAT Unusual Occurrence Report No. 89-14 (12/21/89).
04/27/90	Powerhouse	PCB oils	2-3 qts.	Apparently seal on spare transformer failed causing leak; lab results indicated 64,500 ppm - PCB.	EG&G-MAT Unusual Occurrence Report No. 90-8 (5/9/90). Leak reported to EPA although the RQ is 1 lb or greater (the release involved less than one-half lb); subsequent sampling by ER Program resulted in Removal Action (DOE 1991d).

AEC - Atomic Energy Commission
WTS - Waste Transfer System
RCG - radioactivity concentration guide
HEPA - high efficiency particulate air filter
EPA - U.S. Environmental Protection Agency
OEPA - Ohio Environmental Protection Agency
NPDES - National Pollutant Discharge Elimination System
RAPCA - Regional Air Pollution Control Authority
RQ - reportable quantity
SD - Sewage Disposal
dis/min/mL - disintegrations per minute per milliliter (equals 4.505×10^{-7} μCi per mL)

investigation committee, a news release and a press conference, which was held at Mound Plant on March 16, 1973. No evidence was found, however, that the latter was truly a Type A investigation involving only, at the time, AEC personnel.

The only formal Type B investigation was a "possible Type B occurrence" on January 17, 1972. A frozen water line burst in the penthouse of the SM Building, where the filter banks were located. Reports relating to this incident indicate elevated levels of plutonium-238 in the surface water in the plant drainage, but no data as to the actual concentrations were found in any of the documents. The levels were reportedly "very high."

Two incidents involving explosions in glovebox operations are inferred to have triggered Type B investigations, because references were made in the incident reports of joint MRC-AEC committee findings. These incidents occurred on October 27, 1964, and April 3, 1968, and both involved plutonium-238 operations. Neither of these events resulted in a proven environmental release; the atmospheric releases are inferred from the incident descriptions (Table II.1).

Informal committees were formed in the mid-1970s to investigate the presence of plutonium in the Miami-Erie Canal. The plutonium was discovered during routine environmental sampling and confirmed by core sampling in 1974. In February 1974, an investigative committee was formed to "find cause" for the off-plant deposit (Table II.1). No single event was identified as the sole cause, although effluent discharges from SM and WD Building operations, contaminated soil erosion, and the January 1969 wasteline break were highlighted. A public announcement of the off-plant plutonium deposit was made May 15, 1974. The incident investigation committee report (MRC Incident Investigation No. 74-13; Table II.1) contained a "historical picture" generated from record searches from available materials and personnel interviews. Two tables were included entitled "Documented" and "Undocumented." All of the incidents in the documented table are corroborated in Table II.1. The undocumented information has not been confirmed by this investigation nor by the 1974 investigation committee, but the entire table is retyped in Table II.2.

A second committee was formed in August 1974 to assess the impact of the wasteline break on soil contamination and the erosion of contaminated soil to the plant drainage ditch (DOE 1974). In October 1974, briefings were held for federal, state and local health agencies and congressional representatives. In January 1975, the manager of the Albuquerque Operations Office of the AEC appointed an additional investigative committee, referred to as the "Ad Hoc committee" to evaluate the health and safety aspects of the plutonium-238 in the environment of Mound Plant, then known as Mound Laboratory (DOE 1976). The results of a detailed sampling campaign in the Miami-Erie Canal were published shortly thereafter (Rogers 1975).

Table II.2. Transcription of "Undocumented" Spills from Appendix B of MRC Investigation Report No. 74-13, "Plutonium Off-Site."

1963 or 1964	Leaking drums R&R (Feed Material) Storage and behind SM Building and Building 33 (no known contamination).
1963	Pipe break (dry) SM 20/21 during December. Airborne contamination.
1963 or 1965	Washed off truck behind R-Building decontaminated. H_2O went to storm sewer.
1963 to 1965	Hot sollution possibly poured down drain (cold) SM Building, Room #3, during 1963 to 1965 time frame.
1964	Tracking problem outside SM Building. Washed area down with fire hose - run-off water went over the hill to storm sewer systems.
1964 or 1965	Someone remembered high counts on SM Hill; i.e., on rocks, tree roots, etc.
1965	Someone remembered a liquid leak in Room 34 of SM. Could not remember if contamination got outside building or size of leak.
1965 to 1974	In area between SM-PP Buildings, high and low-risk manhole contained hot dirt (drummed up). This manhole for access only; not connected to any sewer system.
1965 to 1968	SM #57 storage vault H_2O; where was it pumped to? Think to hot drain.
1965 to 1968	SM 28 and 60 cooling H_2O to plasma torch; where did leaking H_2O go? Someone thinks to storm sewer.
1966	Pipe break in lower levee near river; low contamination located west of Rt. 25.
1966	Contaminated H_2O SM #39 area hot and cold sides contaminated (glovebox filled with water).
1966 to 1967	SM Building, Room 38, resin fire in glovebox, contained in same.
1966 to 1973	PP-Building acid room drains, drained to where? Appears to back field.
1967 to 1971	WDA effluent after treatment routed to storm drain.
1967 or 1968	Leaking drum R&R Building. Storage tanks overflowed at same time. No known contamination.
1967 to 1968	SM, Room 10, waste raised contamination level of WDA effluent tanks.
1967 to 1969	Repaving of SM contaminated. Bad weather (rain) run-off H_2O to storm sewers.

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Table II.2. (page 2 of 2)

1967	Near HH Building, line breakage, February 22, 1967. (No contamination as a result of incident was remembered.)
1967	May 16 - high, low risk lines installed. Hot influent received at WD August 15, 1967.
1968 or 1969	Hot pavement behind SM Building to Building 30. Pavement dug up and drummed out.
1967 to 1971	Duct work changed top SM Building. Gravel contaminated, drummed up and removed. Rain washed H_2O to storm sewer.
1969 or 1970	Scrub tower corrosive vapor system PP-Building. Room 13 overflowed.
1969	March - Building 41 overflow.
1969	April - WD charged line broken fluorinator. No known contamination.
1969	April - Leaking tank enclosure R&R (SM-PP area) (high, low risk).
1972	Overflow Building 41, H_2O from SM termination.
1971	S.D. connection from SM not plugged. Contaminated H_2O to SD plant.
1972	Sept. 18 - overflow to SM Building, H_2O from SM termination 72-27. (very low counts)
1963 to 1964	Someone remembered a 30-gal. water leak to storm sewer (SM #1), 50,000 counts/min.

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2.2. CORRELATIONS WITH OTHER RECORDS

Table II.3 presents an independent summary of radiation incidents at Mound Plant. This table was compiled by a health physics worker at Mound Plant from records and field logs in the Health Physics Office. These records are maintained to document worker exposures to radioactive materials, a task well beyond the scope of CERCLA and this report. The Privacy Act protects these data from public scrutiny; however, during the review for this report, data on documented and possible spills and environmental releases were noted in these records and are included in Table II.3. In addition to dates and locations of accidents and radiation incidents, Table II.3 provides valuable information on dates of use of isotopes, project dates and other data that proved helpful in compiling the Site Scoping Report: Volume 7 - Waste Management (DOE 1991c). The table is transcribed exactly as provided, and some original errors are noted. For example, uranium-233 was entered for January 1961, but the isotope was undoubtedly uranium-238.

Most of the incidents listed in Table II.1 have been correlated with listings in Table II.3. However, several incidents are not common to both and are known only by a single entry, and some facts remain unclear. One such example is the erroneous citation in the RCRA Facilities Assessment (RFA) (EPA 1988) concerning an "incident in October of 1971, a spontaneous fire of solvents and plutonium (resulting from improper storage of materials) released 49.9 μCi of plutonium...". Table II.1 shows that the incident that released 49.9 μCi of plutonium occurred in February 1971 (2/10/71, not 10/71) and was a major event in which the Miamisburg Fire Department responded. However, no such date is listed in Table II.3. Table II.3, however, lists an entry for October 12, 1971, but only personnel exposure data not included in the Table II.3 tabulation were recorded. Both Tables II.1 and II.3 include entries on March 13, 1973, for an incident that released 132 curies of tritium to the atmosphere. The RFA correctly listed the date of the latter, but stated that 163 curies were released (EPA 1988).

Table II.3. Excerpts From Radiation Incident Records - Health Physics Office

Date	Building	Rooms	Isotope	Description of Incident
2/0/49	HH		Po-210	Hot operations began.
3/29/49	T		Po-210	Contamination spread during ventilation shutdown.
6/10/49	R	122	Ra-226	Cooling jacket for volatilization condensor water in hood #6 leaked through hot waste outlet to floor, main corridor, and into 158 & 159; area unoccupied; check hot corridor drains to waste disposal plant?
5/4/50	R	142	Ra-226 Po-210	Explosion in hood #1, fire; 0.75 Ci Po-210 in capillary intact; beaker with 100 μCi radium spilled in hood opposite; floor & hood contaminated.
1/22/52	T		Po-210	Joint wind speed, direction, stability table for Mound produced.
7/22/52	R	114	Ac-227	Actinium perchlorate solution leaked in safe, contaminated lab.
4/3/54	T			Fire in neutron source paraffin; fast n=300/cm2/s 6 ft; gamma=2 mR.
3/8/55			Th-230 Po-210	Mention of thorium program; proposed WD handling of GP SW Building raffinate and diuranate; moving I work to T will require 5 urine/wk for Th, 3 river samples Th, 40 urines/wk Po, 10 veg/2 wks Po, 8 river water + 4 muds/wk Po.
4/12/55			Th	Memo: will tank truck shipping Th to Fernald have decon problems?
5/24/55	M	20		LiOH fire in Livermore Project drybox.
12/2/55			Th-230	Ionium program; Mallinckrodt will ship raffinate from uranium refinery.
12/5/55	R		Th, Pu	New ionium and plutonium work in R bldg.
1/1/56			Th, Ra	Problems in R Building with thorium daughters commingling with daughters from radium actinium program. Solved when Th program cancelled; 630 drums of Th decantate discharged to river; Pa separation set up HH.
3/22/56	R	149	Pa-231	Microcurie quantities being handled.
3/22/56	SW	G1B	Pa-231	Columns set up for purification, due to start 3/26/56.
3/22/56	R	133	Th-230	Ionium program due to begin 3/26/56.
3/22/56	R	116	Pu-239	Neutron source production scheduled to begin 6/6/56.
8/6/56				Health Procedures Manual, MLM-208, prepared by J.E. Bradley.

Table II.3. (page 2 of 4)

Date	Building	Rooms	Isotope	Description of Incident
11/27/56	T	277	Po-210	Po emitted as vapor from T-279, room filters nearly plugged.
1/16/60	R		Pu-238	Special metal separation and purification project.
3/24/60				Fire in garbage truck, may be caused by uranium salts.
5/15/60	SW	8	H-3	Manostat flow regulator and bellows pump located in thermal diffusion columns failed, Hg spilled, much of SW and R buildings hot.
5/26/60	T	254	Po-210	Carbonyl reacted with oxygen, flask exploded, cracked window; little or no radioactivity escaped room.
7/21/60	SW	8	H-3	Hot mercury spilled from gauge; tracked in SW and R; special investigation.
10/3/60	R	108	H-3	Interior of 12 L vessel cleaned with tri and tetrachloroethylene, which was spilled on floor and tracked around a wide area.
1/10/61	M	Dumpster	U-233?	Fire in dumpster caused by uranium chips from uranium lathe.
6/7/61	SW	8	H-3	Gas escaped from 100 L tank when cover removed under exhaust fan at base of West stack; replaced by type 1A tanks; planned release.
2/1/62	R	116	Pu-239	Exposures to nickel carbonyl gas due to containment failure; could be Pu contamination as well.
11/9/62	R	1208	Pu-238	Fire in primary HEPA filter while cutting walk-in box with torch.
12/18/62	SM	1	Pu-238	High level waste PVC pipe broke.
1/16/63	R	149	Pu-238	Overpressure in argon system popped glove off drybox 3 in SNAP line.
4/26/63	SM	10	Pu-238	Spill during transfer.
9/24/63	SM	21	Pu-238	Pu waste for calorimetry melted bag, setting off air monitor.
6/11/64	T	275-27	Po-210	Material spilled from South concentration cell passbox onto floor; tracked throughout low risk side and stairwell 13, platform floors and acid storage area.
10/27/64	SM	35	Pu-238	Explosion.
10/30/64	T	267	Po	Fire in glove box 5, line 1; 50 mR/hr gamma, indicates 500 Ci Po. E-41 exhaust = 1029 cpm/11.43 m3 (normal=100).
2/26/65	SM	10	Pu-238	Incident in facility.
2/26/65	SM			Opened hot waste drum without asking.

Table II.3. (page 3 of 4)

Date	Building	Rooms	Isotope	Description of Incident
8/26/65	R	145	Pu-238	Organic and acid wastes were mixed; polyethylene bottle in hood exploded, flooding floor of hood; activity contained to hood with no personnel exposure; solution contained HNO3, sulfamic acid, ferrous ammonium sulfate, NaF, trioctylphosphine oxide, cyclohexane, ethanol, triethanolamine, 1-(2-pyridylazo)-2-napthal, Pu-238, 239, U-234.
7/19/67	T	267	Po-210	Minimal release, explosion in hood, acetone addition to leach solution.
8/17/67	SM	10	Pu-238	Dissolver/evaporator pot exploded; floor in vicinity of box 10-65 in 1-2M range; filters clogged, + differential. Condenser in hood 2 exploded; positive differential: floor up to 600k cpm: other air samples in 40-50k cpm range.
9/8/67	SM	WTS	Pu-238	Flanges on both low and high risk transfer lines to WD found unbolted; about 15 feet west of road at SW corner of SM fence line; considerable contamination of pipes, soil and pipe trench sand and gravel downhill; several yards soil removed to below 2000 dpm direct.
11/9/67	environment		Pu-238	2000 gallons low-level rad waste spilled during waste line tie in; total release estimated at 7.65 mCi; 10 onsite, 7 offsite water samples; maximum activity 1200 dpm/ml.
4/30/68	SM	35A	Pu-238	Explosion in glove box blew fronts off several boxes.
4/30/68	T	270	Po-210	Fire in trash box behind alpha box 8 in P&E line 4.
8/22/68	SM		Pu-238	Release occurred in uncontrolled area; 80 gallon drum opened outdoors.
8/22/68	T	260	Po-210	Glove ripped in glove box 10, resulting in airborne contamination.
1/8/69	PP		Pu-238	Valve left open, tank exchange, escape of gas.
12/9/69	R	127	Pu-238	Fire in glove box 2, some floor contamination from water.
10/7/70	R	168	none	MoF_6 gas released in hood, out stack when line broke.
1/17/72	SM	lot		Sprinkler froze, thawed, ran out through hoods onto floor and out of building into parking lot. Survey; pads north and west are hot; sealer applied 1/18; resurfaced with 2 inches new asphalt 2/17/72.
5/26/72	WDA	Tanks	Pu-238	Low risk waste tank overflowed to environment; source valve left on at SM decon operations: remaining water 523 dpm/ml.

Table II.3. (page 4 of 4)

Date	Building	Rooms	Isotope	Description of Incident
72	WDA		Pu	Overflow of untreated low risk waste.
7/28/72	SW	231	H-3	Rad incident report 72-21; repair on leaking drying tower drain line.
3/13/73	SW	8	H-3	132 Ci stacked; calculated 2.8 x RCG at fence/24 hrs.
7/12/85	WD			"Loss of Control" unusual event on WTS near WD.
8/28/85	SW	13	H-3	Accidental transfer to ERS; ERS leaks 50 Ci to room, stack (Rpt 85-22).
2/3/87	PP	corridor	10	Contamination spread by cutting insulation during airline removal.

WD - WD Building (waste disposal)
GP - General Purpose building (later known as SW Building)
HEPA - high efficiency particulate air filter
PVC - polyvinyl chloride
SNAP - space nuclear auxiliary power
WTS - waste transfer system
ERS - Effluent Removal System
dpm - disintegration per minute

3. SUMMARY RESPONSE ACTIONS

The general response actions conducted for each spill or environmental release were summarized in Table II.1. By and large, the majority of incidents in Table II.1 include only responses by the DOE operating contractor, a standard practice in compliance with orders from DOE and AEC. These responses included investigations of the causes of the incident, as well as recommendations for cleanup and prevention of a recurrence. Available data concerning the amount of soil or materials excavated or removed have been included in Table II.1 where noted in the references.

3.1. RESPONSES BY OHIO ENVIRONMENTAL PROTECTION AGENCY

To augment the data compiled from Mound Plant records, inquires for this report were made to federal and state agencies. Summaries of response actions conducted by OEPA and EPA were requested under the FOIA. OEPA provided information from the records in the EROS database. The Emergency Response Section maintains the EROS database and is the designated reporting point for spills and unauthorized discharges in Ohio. Table III.1 summarizes the data supplied by the OEPA (OEPA 1991). None of the response actions listed in Table III.1 resulted in an enforcement action.

Two incidents listed in Table III.1 cannot be correlated with the data obtained from Mound Plant. References to the plutonium-contaminated liquid reported in October 1982 and the radioactive dirt reported in January 1986 cannot be reconciled in Tables II.1 and II.3. Except for the dates of the incidents, there is no information by which to trace these incidents through the records at the plant. The other entries, including cooling water, fuel oil and tritium releases, are all cross-referenced in Table III.2.

3.2. RESPONSES BY U.S. ENVIRONMENTAL PROTECTION AGENCY: DRAFT RCRA FACILITY ASSESSMENT

The only information currently available on federal agency response is contained in the draft RFA (EPA 1988). The Preliminary Review (PR) and Visual Site Inspection (VSI) were conducted by EPA in May 1988 as part of the RFA for the plant. This inspection included review of files and materials from OEPA, data evaluations and interviews to evaluate the potential for releases of hazardous constituents from solid waste management units (SWMU) and other areas of concern (AOC) identified during the review. This inspection resulted in the identification of 86 SWMUs and 38 AOCs. Release of hazardous substances was reported for 11 sites from file materials and the VSI. The list of 124 sites identified by the RFA is included in Table III.2. A draft PR/VSI report (EPA 1988) was prepared by A.T. Kearney, Inc. under contract to EPA, Region V, but was never finalized. All of the 124 sites originally

Table III.1. Summary of Response Actions by Ohio Environmental Protection Agency Emergency Response Section (OEPA 1991)

Date Reported	Material	Amount	Spill Size	Response Priority	Areas Affected
10/15/82	Plutonium contaminated liquid	2 gal	S	3	None
08/18/83	Fuel oil	40 gal	S	3	Surface Water
01/3/86	Radioactive dirt	Unknown	L	3	Land
04/27/87	Calcium chloride Zinc chromate	2,100 gal 10 lbs	M	2	Surface water
11/8/89	Tritium	4 grams	S	3	Other

Note:
S - small
M - medium
L - large
2 - next working day
3 - whenever possible

Table III.2. List of Sites Currently in the Mound Plant Environmental Restoration Program by Operable Unit Cross-Referenced to the RCRA Facilities Assessment and CEARP Phase I

ER Program Sites	RCRA Facility Assessment (SWMU's and Other Areas of Concern)	CEARP Phase I (Category-Site)
		1-Area A, soil fill 1-Area E, oil spill 3-Tritium in BVA 3-Monsanto Unit I 3-Monsanto Unit II 3-Monsanto Unit III 3-Monsanto Unit IV 3-Monsanto warehouse 3-Monsanto - Marion
Area B Groundwater, Operable Unit 1:		
Site Sanitary Landfill	LF-1 lined landfill	
Area 18, Landfill Cover		3-Area 18
Contaminated Soil and Pond Area	LF-2 past landfill	1-Area B
Main Hill Seeps Operable Unit 2:		
Seeps	D North slope springs G Hillside hole	
Area 15, Old SW Cave		3-Area 15
Area 6, WD Building Filter Waste	DD Main Hill-6	3-Area 6
Area F Chromium Trench	MI-7 Chromium trench	3-Area F
Cooling Tower Basins	MI-8 Cooling tower basins CS-16 Cooling tower storage	
Building E Solvent Storage Shed	CS-2 Bldg E solvent storage	
Building G Garage Area	P Bldg G spills	2-Bldg G
Monitoring Well 34-1	MI-13 Monitoring well 34-1	
Miscellaneous Sites, Operable Unit 3:		
Farm Trash Area	LF-5 South property dump	
Underground Sewage Lines	SD-10 Underground sewer lines	
Paint Shop Area	N Paint shop spills	2-Paint shop
Powerhouse Area	O Powerhouse spills	2-Powerhouse
Area C, Waste Storage Area	MI-6 Lithium carbonate disposal	1-Area C
Building 61, Former Equipment Area	Q Bldg 61 spills	2-Bldg 61
Oil Burn Structure	MI-3 Oil burn structure	
Fire-Fighting Training Facility Pit	MI-5 Fire fighter training	
Area I, Buildings 1, 27 Leach Pits	SI-4 Bldg 1 leach pit SI-5 Bldg 27 leach pit	I-Area I
Building 27 Sump Area	SU-3 Bldg 27 leach pit	
Building 27 Concrete Flume	MI-14 Bldg 27 flume	

Table III.2. (page 2 of 5)

ER Program Sites	RCRA Facility Assessment (SWMU's and Other Areas of Concern)	CEARP Phase I (Category-Site)
Building 27 Solvent Storage Area	CS-12 Bldg 27 solvent storage	
Glass Melter Room Sump	SU-1 Glass melter room sump	
WD Building Drum Staging Area	CS-18 WD Bldg drum area	
Area H, Pyrotechnic Waste Disposal	OB-8 Pyrotechnic waste disposal	1-Area H
Pyrotechnic Waste Shed	OB-5 Pyrotechnic waste shed	
Thermal Treatment Unit Area	OB-2 Thermal treatment unit	
Trash Burner Area	OB-1 Trash burner	
Waste Oil Drumfield Area	CS-6 Waste oil drumfield	
Old Firing Range Drum Storage Site	CS-10 Old firing range storage	
Building 34 Aviation Fuel Tank	UT-2 Aviation fuel tank	
Building 51 Waste Solvent Tank	UT-1 Waste solvent tank IN-3 Waste solvent incinerator AP-10 Waste solvent incinerator scrubber	
Miami-Erie Canal, Operable Unit 4:		
(All parts comprise 1 site)	B Runoff hollow I North canal J South canal K North pond L South pond	3-Plutonium in M-E Canal
Radioactively Contaminated Soils, Operable Unit 5:		
Area 2, Crushed empty thorium drums	CC Valley-3	3-Area 2
Area 3, Thorium drum storage	T Valley-1	3-Area 3
Sewage Disposal Building area	SD-1 Grit chamber SD-2 Grit conveyor SD-3 Comminutor SD-4 Equalizer basins SD-5 Aeration basins SD-6 Clarifier SD-7 Sand filters SD-8 Chlorine chambers	
Sludge Drying Beds	SD-9 Sludge drying beds	
Dredge Spoil Drying Beds	MI-15 Dredge spoil beds	
Building 72 Storage Area	CS-13 Outdoor hazardous waste storage CS-14 Empty drum storage	
Area 5, Radioactive Waste Line Break	Z Main Hill-3	3-Area 5
Area 7, Empty Thorium Drums	KK Valley-6	3-Area 7
Area 8, Contaminated Soils from Area 1	EE SM/PP Hill-4	3-Area 8
Area 9, Former Thorium Storage	W SM/PP Hill-2	3-Area 9

Table III.2. (page 3 of 5)

ER Program Sites	RCRA Facility Assessment (SWMU's and Other Areas of Concern)	CEARP Phase I (Category-Site)
Area 10, Concrete from Dayton units	FF SM/PP Hill-5	3-Area 10
Area 12, Contaminated Soil from Area 1 and SM Building Operations	GG SM/PP Hill-6	3-Area 12 3-Area 13
Area 13, Polonium-contaminated wood	HH-Valley-4	
Area 20, Radioactive waste line break	BB Main Hill-5 R HH Bldg contamination	
Area 21, Old Bunker	LL SM/PP Hill-10	
Area 22, Orphan soil	II SM/PP Hill-7	
Area J, Hillside catch basin	SI-6 Hillside catch basin LF-4 Dredged material disposal	1-Area J
Spoils Disposal Area	LF-3 Spoils disposal	
D&D Sites, Operable Unit 6:		
Area 1, Bulk transfer of thorium drums	A Thorium drum storage S SM/PP-1	3-Area 1
Area 4, WD Building Influent Tanks	U Main Hill-1	3-Area 4
Area 4A, Overflow Area	V Main Hill-2	3-Area 4a 3-Area G
Area 11, Contamination from SM Building	JJ SM/PP Hill-8	3-Area 11
Area 14, Radioactive Waste Line Break	Y Valley-2 AA Main Hill-4	3-Area 14
Area 16, Sanitary Sewage Septic Tank and Leach Basin for SM Building	F SM/PP-9 C Septic tank and leach field	3-Area 16
Area 17, Area under the SM Building	X SM/PP Hill-3	3-Area 17
Area 19, Underground Waste Line	MI-2 Waste disposal pipeline E Waste disposal pipeline	3-Area 19
Area D, Acid Leach Field	MI-11 Acid leach field	1-Area D
Contaminated Soil Box Area	M Contaminated soil box area	
Old Sanitary Treatment Plant	SD-11 Old treatment plant	
Radioactive Waste lines		
Limited Action Sites, Operable Unit 7:		
Scintillation Vial Storage Area	CS-1 Scintillation vial storage	
Building 28 Solvent Storage Area	CS-3 Bldg 28 solvent storage	
DS Building Solvent Storage Shed	CS-4 DS Bldg solvent storage	
Building B Solvent Storage Shed	CS-5 Bldg B solvent storage	
Hazardous Waste Storage Area	CS-7 Hazardous waste storage	

Table III.2. (page 4 of 5)

ER Program Sites	RCRA Facility Assessment (SWMU's and Other Areas of Concern)	CEARP Phase I (Category-Site)
Past Hazardous Waste Storage Area	CS-8 Past hazardous waste storage	
Radioactive/Mixed Waste Storage Area	CS-9 Mixed waste storage	
Drilling Mud Storage Area	CS-11 Drilling mud storage	
Building B Temporary Drum Storage	CS-15 Bldg B temporary storage	
Test Firing Residual Storage Area	CS-17 Test fire residual storage	
Retort	OB-3 Retort	
Building 90 Blockhouse	OB-4 Bldg 90 blockhouse	
Biodegradation Unit	OB-6 Biodegradation unit	
Explosive Waste Storage Bunker	OB-7 Explosive waste storage	
Building 1 Sump	SU-2 Bldg 1 sump	
Waste Transport Vehicles	MI-4 Waste transport vehicle	
Glass Melter Feed Drum	MI-9 Glass melter feed drum	
Trash Dumpsters	MI-10 Trash dumpsters	
Vapor Degreaser	MI-12 Vapor degreaser	
SW Building Drum Staging Area	CS-19 SW Bldg staging area	
Glass Melter Furnace	IN-1 Glass melter furnace	
Off-Gas Treatment System (9 sites)		
Deluge tank	AP-1 Deluge tank	
Venturi scrubber	AP-2 Venturi scrubber	
Cyclone demister	AP-3 Cyclone demister	
HEPA filter	AP-4 HEPA filter	
WD filter bank	AP-5 WD filter bank	
Recycle tank	AP-6 Recycle tank	
Leaf solution filter	AP-7 Leaf solution filter	
Strainer	AP-8 Strainer	
Iodine absorption filter	AP-9 Iodine absorption filter	
Ventilation Hoods	AP-11 Ventilation hoods	
Epoxy Resin Disposal	H Epoxy resin disposal	
Alpha Wastewater Treatment	WD-2 Alpha wastewater	
Beta Wastewater Treatment	WD-3 Beta wastewater	
Cyclone Incinerator	IN-2 Cyclone incinerator	
Inactive Underground Storage Tanks, Operable Unit 8:		
SD Building (3 tanks comprise 3 sites)		
WD Building Annex (3 tanks comprise 3 sites)	WD-1 Alpha influent tanks	2-WD Bldg

Table III.2. (page 5 of 5)

ER Program Sites	RCRA Facility Assessment (SWMU's and Other Areas of Concern)	CEARP Phase I (Category-Site)
Site-Wide, Operable Unit 9:		
Plant Drainage Ditch	MI-1 Plant drainage ditch	
Retention Basins	SI-1 Retention basins	
Overflow Pond	SI-2 Overflow pond	
Asphalt-Lined Pond	SI-3 Asphalt-lined pond	
109 Sites	124 Sites	43 Sites

ER - Environmental Restoration
RCRA - Resource Conservation and Recovery Act
SWMU - solid waste management unit
CEARP - Comprehensive Environmental Assessment and Response Program

identified by the RFA were included in the ER Program at the time the FFA became effective (see below). During the scoping process, however, the 124 sites have been recombined to produce 109 potential release sites. Table III.2 depicts the cross-reference of these sites in both programs. Some apparent errors in the RFA have been noted. For example, the Area 14, radioactive waste line break (Table III.2) was found to be referred to twice under two different categories in the RFA: the "Y-site, Valley-2" and the "AA-site, Main Hill-4." Area 19, the underground wasteline was similarly found to be referred to as "MI-2, Waste disposal pipeline" and "E Waste disposal pipeline." Other errors in the draft RFA report are noted in subsection 2.2 above.

3.3. SUMMARY OF THE DOE COMPREHENSIVE ENVIRONMENTAL ASSESSMENT AND RESPONSE PROGRAM (CEARP)

In mid-1984 the DOE Albuquerque Operations Office (AL) initiated the Comprehensive Environmental Assessment and Response Program (CEARP) to help fulfill the DOE policy that all facilities comply with applicable environmental regulations while conducting their missions. CEARP was intended to fulfill DOE obligations under the EPA CERCLA Program. It utilized the same basic approach as the EPA guidance to federal facilities (Federal Facility Program Manual for Implementating CERCLA Responsibilities of Federal Agencies, Final Draft) and was authorized by DOE Order 5480.14. CEARP was administered by Los Alamos National Laboratory under contract to AL. As the operating contractor, MRC was responsible to the Dayton Area Office (DAO) for plant operations. CEARP was implemented in five phases:

Phase I - Installation Assessment
Phase II - Confirmation
Phase III - Technology Assessment
Phase IV - Remedial Action
Phase V - Compliance and Verification

A CEARP Phase I Assessment Report was compiled for Mound Plant in 1986 (DOE 1986) with the intent of determining the extent of compliance with environmental laws, to ascertain the magnitude of potential CERCLA sites. Tasks performed under Phase I include record searches and literature surveys, employee interviews, waste management evaluation, tentative identification of contaminated areas, evaluation of compliance with environmental regulations, preliminary physical survey, a pathway evaluation and a Hazard Ranking System (HRS) scoring. The Phase I Assessment Report was submitted to EPA and OEPA for review and informational purposes.

The CEARP Phase I assessment results included the identification of 43 sites and their grouping into three categories: (1) areas that have potentially received oils or hazardous substances; (2) areas that because of past activities had potential for leaks and spills; and (3) previously identified areas of radioactive contamination. The 43 sites are listed in Table III.2 by category and are cross-referenced to the present ER Program sites. Category 1 sites were recommended for further investigation and included Areas B, C and I, which were sampled during CEARP Phase II. Two Category 1 sites, Areas A and E, were areas of minor concern and significantly small volumes of waste. Category 2 sites were considered to require no additional investigation but have, nonetheless, been carried forward in the ER Program. The CEARP Phase I Installation Assessment Report (DOE 1986) contains full descriptions and discussions of the sites.

Category 3 sites included two sites off the plant property and 20 areas recommended for further radiological investigation by the Mound Plant Site Survey Program (SSP). Data collected during the SSP (Stought et al. 1988) are reported in the Site Scoping Report: Volume III - Radiological Survey Report (DOE 1991c). The sites off the plant property comprise the Miami-Erie Canal and tritium in the Buried Valley aquifer (BVA). Six category 3 sites were former Monsanto facilities (DOE 1991a) that pre-dated Mound Plant, were not included in the NPL and hence have not been carried forward in the ER Program.

A CEARP Phase II plan (DOE 1987a) was implemented with three objectives: (1) obtain the additional information identified in Phase I; (2) complete an environmental evaluation to confirm the presence or absence of potential environmental concerns of Phase I; and (3) conduct measurements and sampling programs as required to understand potential contaminant sources and environmental pathways. A work plan consisting of a Synopsis, Sampling Plan, Health and Safety Plan, Quality Assurance/Quality Control Plan, and Technical Data Management Plan was submitted to EPA and OEPA for review. EPA Comments were received and incorporated into the revised work plan that served to guide the field work, although the work plans were never officially approved.

The Phase II work plan (DOE 1987a) provided for three stages of investigation using an iterative process whereby additional sampling stages would be guided by data from the previous stage. Stage 1 proposed an ambitious project that addressed the hydrogeochemical characterization of Mound Plant, Area B, Tritium in the Buried Valley Aquifer, and reconnaissance sampling of Areas C, I and the WD Building. The Stage 1 investigations included; (1) location survey and installation of datum markers for all existing monitoring wells, springs and seeps; (2) development of springs and seeps to facilitate sampling and measurement; (3) semi-monthly water level measurements at existing monitoring wells and springs and seeps to determine temporal fluctuations; (4) sampling and analysis of existing monitoring and production wells, springs and seeps for organic compounds; (5) soil gas sampling of

tritium sources; (6) sampling National Pollutant Discharge Elimination System (NPDES) outfalls for organic constituents; (7) sampling and analysis of monitoring wells, springs and seeps for stable isotopes and radioisotopes, including tritium; (8) hydrologic testing of existing monitoring wells; (9) exploratory drilling for tritiated water; and (10) soil sampling in Areas C, I and the WD Building. Not all of these investigations were completed or successful.

Results of the Stage 1 investigations were highlighted in the Stage 2 Supplement Plan (DOE 1987b), but a comprehensive interpretive report was never completed. Results were summarized according to tritium studies, organics in Area B, and reconnaissance sampling of soils.

Investigations of tritium in groundwater focused on the Main Hill under the direction of the Mound Tritium Groundwater Assessment Program and resulted in refinement of the conceptual model of the bedrock groundwater system. Results of the investigations included

- refinement of bedrock stratigraphy by trenching and visual logging, which suggested that some layers may act as aquitards to redirect water laterally;
- tritium concentration monitoring at the seeps, which suggested some temporal correlation with precipitation;
- measurement of flow rates, temperature, pH and conductivity of the largest onsite seep;
- installation of perforated pipe and casing both horizontally and vertically to facilitate water level and tritium concentration measurements;
- installation of drains, access manholes, and collection pumps to aid tritium monitoring and disposal of tritiated water (water with tritium levels above the standard was diverted to the WD Building for processing and water below the standard was discharged through the plant discharge ditch);
- determination that common ions and stable isotopes could act as tracers in monitoring the hydrogeologic system, but that the usefulness of uranium and plutonium as tracers was questionable; and
- elimination of a proposed soil gas sampling for tritium sources as a viable sampling technique.

The investigations of organic compounds in the groundwater targeted Area B. Stage 1 resulted in two important findings. First, the existing monitoring well network was deemed deficient in that (1) wells were found to be unsecured (i.e., unlocked, posing a potential for vandalism); (2) inappropriate drilling and well development techniques may have been used, as the wells did not perform according to calculations of the aquifer and pump test; (3) well design was locally inappropriate (e.g., wide screening intervals for determining the vertical extent of contamination); and (4) the distribution of

wells downgradient of Area B was insufficient for the Remedial Investigation activities. These deficiencies hindered the completion of Stage 1, however the combined findings were used to develop a Stage 2 sampling plan that greatly expanded and improved the monitoring well network. Second, a soil gas survey around Area B indicated that there may be two or more potential sources of volatile organic compounds in the groundwater and the areas upgradient of Area B (e.g., Area C) should be examined more carefully.

The Stage 1 reconnaissance soil sampling of Areas I, C and the WD Building were attempted by hand auger with little success. The Area 1 leach pits were sampled to depths of 1 to 1.5 ft and analyzed for volatile organic compounds, base-neutral-acid extractables and the explosives RDX, HMX, and PETN. All constituents were reported to be below the method detection limit with the exception of one sample with 6.85 μg per gram of RDX and several "tentatively identified compounds" that were suspected to be decomposing vegetation associated with the leach pit. Area C was also sampled with a hand auger. The analyses indicated no contamination, but ambiguity remained when the positive evidence from the soil gas survey was considered. Further investigations of Area C were recommended, including a geophysical survey to define the depth of fill and to determine the possible presence of buried drums. Sampling was also attempted at the WD Building without success. Further groundwater sampling was recommended as budget constraints limited the amount of sampling that could be done in the future.

The Stage 2 supplementary plan (DOE 1987b) proposed to: (1) expand and upgrade the monitoring well network in response to the soil gas survey and reconnaissance evaluation of the older well network; (2) use the new well network to verify the extent or absence of volatile organic compound contamination in the groundwater in Areas B, C and I; (3) refine the sources of tritium in the groundwater; (4) quantify the hydraulic characteristics and the boundaries of the BVA; (5) investigate tritium pathways in groundwater; and (6) determine the presence or absence of contaminants adjacent to the WD Building.

In 1988, CEARP changed its structure to the current ER Program, although the program was briefly referred to as the Comprehensive ER Program. This change resulted from the increased DOE awareness of the importance and impact that the Resource Conservation and Recovery Act (RCRA) as modified by the Hazardous and Solid Waste Amendments of 1984, would have on the DOE's environmental programs nationwide.

While the changes in program management were occurring, the results of the Stage 2 investigations were being compiled and were reported in the ER Program Stage 3 plan (DOE 1989). A comprehensive interpretive report was never completed. The most important results of Stage 2 included:

- Completion of 29 new soil borings, 22 in the unconsolidated deposits, six in the Main Hill bedrock and one in the bedrock on the SM/PP Hill just east of the Plant boundary. Twenty-eight new monitoring wells were installed in the borings. Well location and construction details are presented in the Site Scoping Report: Volume I - Geologic Log and Well Information Report. Core recovery in the bedrock was generally poor, ranging from 9 percent to 93 percent;

- Although minor differences and some correlations between seep discharge and seasonal fluctuations in common ions and stable isotope chemistry were noted, the differences were considered slight enough to warrant only occasional sampling. Quarterly sampling would continue only for contaminant species;

- Volatile organic chemicals were found to be present in the new monitoring wells at levels similar to the old monitoring wells and the soil gas survey. The recurring contaminants included trichloroethane, tetrachloroethane and 1,2-trans-dichloroethene (data from the Stage 2 sampling and analysis are reported in the Site Scoping Report: Volume 1 - Groundwater Data);

- Other contaminants were present in new wells, but below regulatory levels;

- No contaminants, other than suspected laboratory contaminants, were reported in wells off plant property;

- Nitrate/nitrite was reported in three Main Hill seeps above the regulatory level; and

- Two aquifer pump tests and eight well slug tests were conducted with inconclusive results.

The Stage 3 Remedial Investigation Plan (DOE 1989) focused on installation groundwater and identified groundwater as the primary contaminant transport pathway. Organic chemical contamination in Area B and tritium contamination of bedrock seeps on the Main Hill were targeted. Remedial investigation of other known sites was considered, but was postponed for budgetary reasons. Based on the results of Stages 1 and 2, improved conceptual models of the hydrogeochemical setting and contaminant migration were outlined. Important concepts of the models included

- groundwater contamination in the BVA was limited to a few organic chemicals in the vicinity of Area B;

- concentrations of organic chemicals were highest, although still low, adjacent to Area B and diminished to below drinking water standards away from Area B;

- groundwater contamination in Area B consisted primarily of three chlorinated solvents; trichloroethene, tetrachloroethene and 1,2-trans-dichloroethene and some associated breakdown products;

- some correlation between the soil gas survey results and groundwater contamination was apparent, although some of the newer wells did not contain some of the compounds (toluene, benzene, ethylbenzene and chloroform) reported in either the older wells or the soil gas survey;

- sources of organic chemicals other than Area B could exist, but Area B was considered to be the primary source of groundwater contamination;

- nitrate/nitrite could be a problem on the Main Hill but was considered to be of lesser importance than Area B; and

- the hydrogeology of the bedrock will be extremely difficult to characterize because the density of buildings and utilities on the Main Hill made access difficult and utility trenches have added local permeable zones to the system.

The Stage 3 plan was compiled and submitted to EPA and OEPA in early 1989, during which time DOE was actively pursuing a FFA with EPA and the State of Ohio in anticipation of the impending listing of Mound Plant on the NPL. Both agencies responded with written comments to the plan; a revised plan incorporated the comments, but the plan never officially received regulatory approval. DOE considered the groundwater pathway and Area B to be the most pressing environmental problems at Mound Plant and implemented the Stage 3 plan. Based on the need to characterize the transport pathway and evaluate the possible remedial alternatives, Stage 3 also proposed to

- install new monitoring wells in the BVA to assess contaminant migration into the deeper parts of the aquifer;

- model details of groundwater flow in the unconsolidated deposits to support the evaluation of remedial alternatives, which is still in progress;

- conduct a seismic refraction survey to define the lateral extent and continuity of the BVA;

- perform additional aquifer tests to define the hydraulic parameters and aquifer boundaries; and

- perform a risk assessment of the tritium contaminated seeps.

During the period of implementation of Stage 3, Mound Plant was among 27 Federal Facilities placed on the NPL. This listing (54 Federal Register 48184; November 21, 1989) elevated the FFA negotiations and authorized EPA to enforce the requirements of CERCLA. The agreement would require that a full Remedial Investigation/Feasibility Study (RI/FS) be conducted for the plant. Under CEARP, AL had always intended to utilize CERCLA procedures, but had lacked the regulatory recognition of CERCLA authority, and the lack of the proper forum for document comment and response had hindered true regulatory oversight.

In pursuance of the agreement, DOE subdivided the investigation into nine operable units that contained most of the known sites previously identified by the CEARP Phase 1 Assessment Report (DOE 1986) and the draft RFA Report (EPA 1988). At the time the agreement became effective (October 11, 1990) there were 109 sites in the Mound Plant ER Program (Table III.2).

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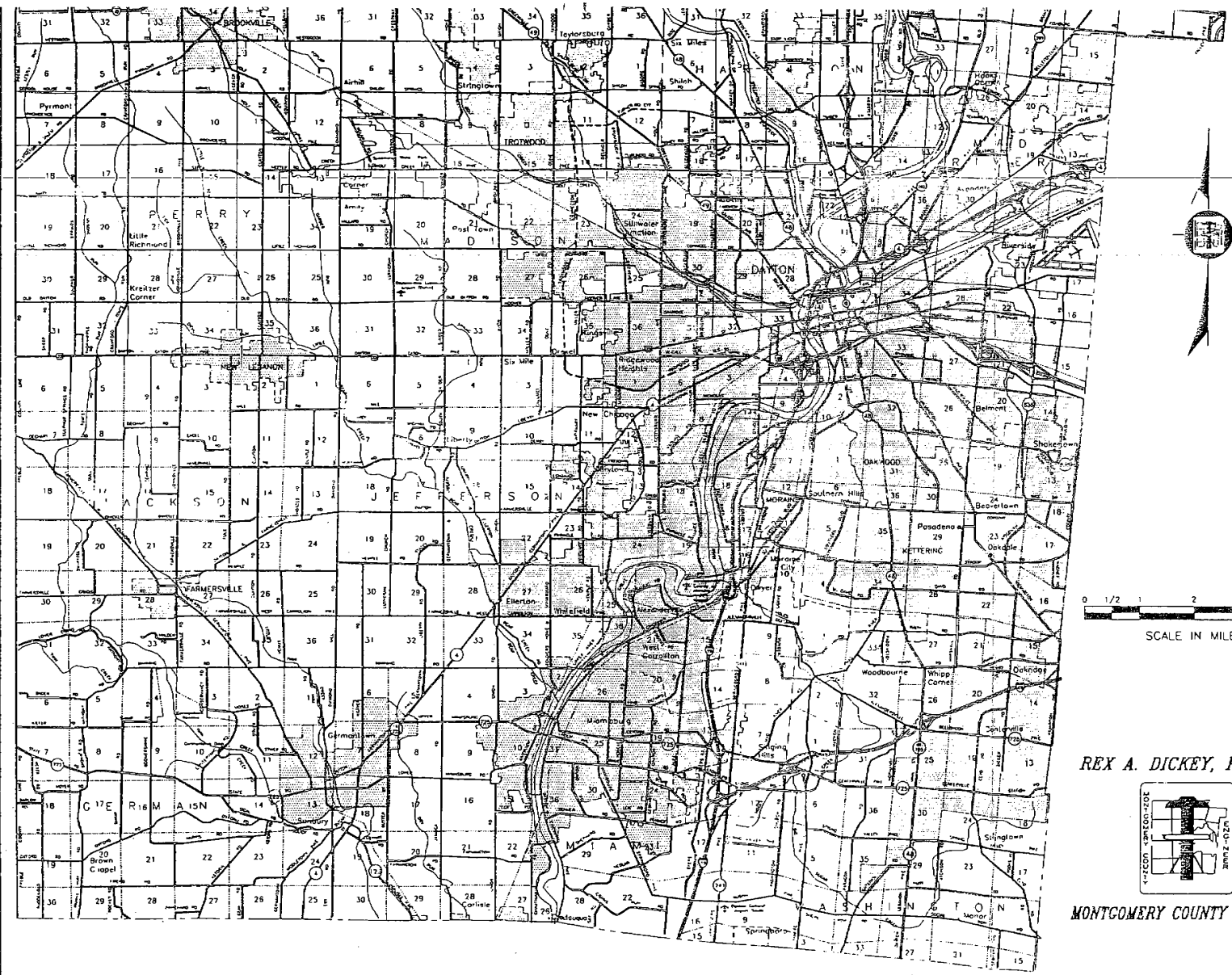
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New Lebanon
Six Mile
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Belmont
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Sugar Grove
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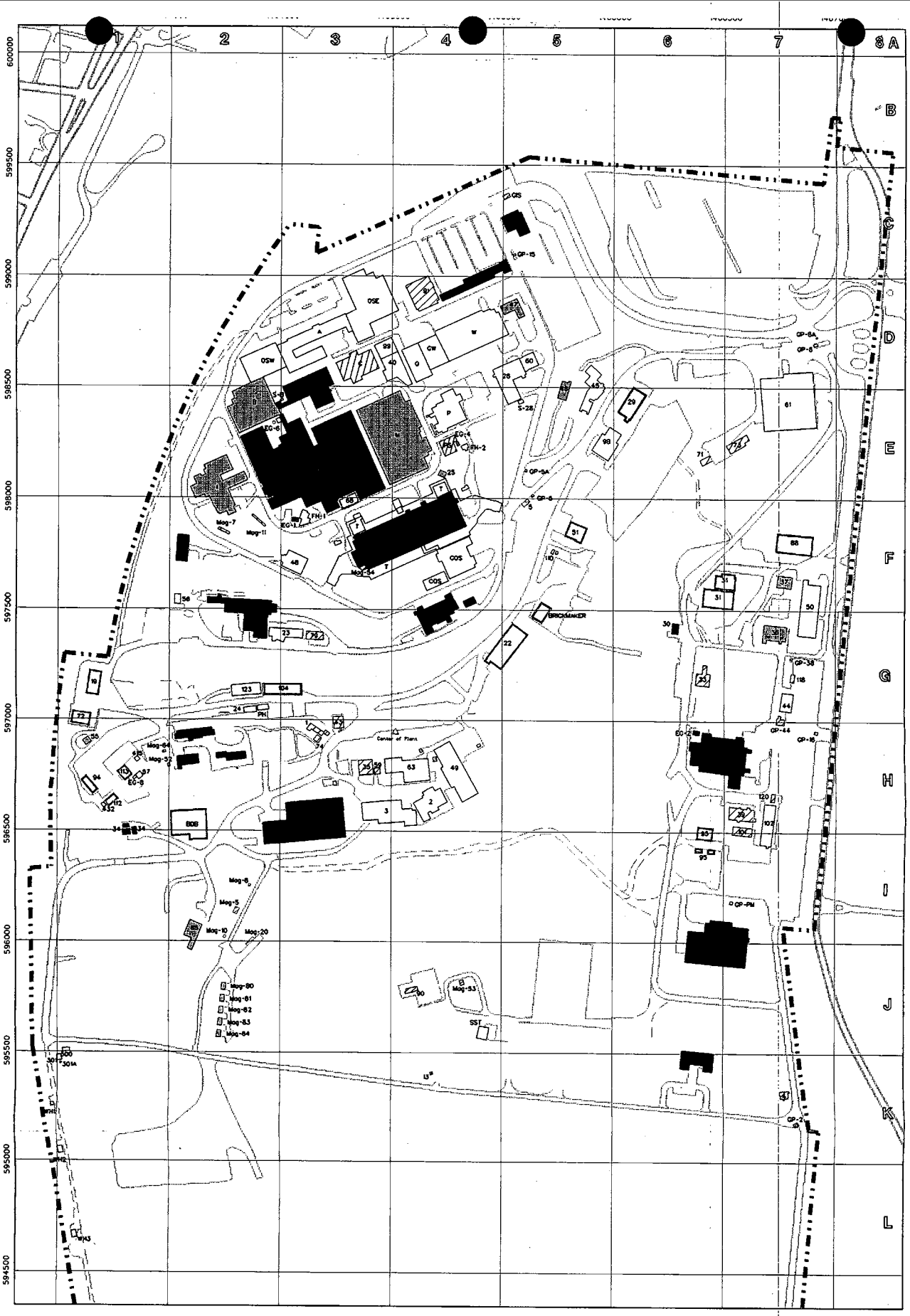
SCALE IN MILES
REX A. DICKEY, P.E.,P.S.
MONTGOMERY COUNTY ENGINEER
FEBRUARY, 199



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- Transfer (Waiting Evaluation)
- Transfer (NFA)
- Transfer (FA)
- Transfer (RA)

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Scale in Feet

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MOUND

Environmental Restoration Geographic Information System

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ISSUE																					

PART CLASSIFICATION

(U) TITLE CLASSIFICATION

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Core Team
05/25/99

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JOB NUMBER

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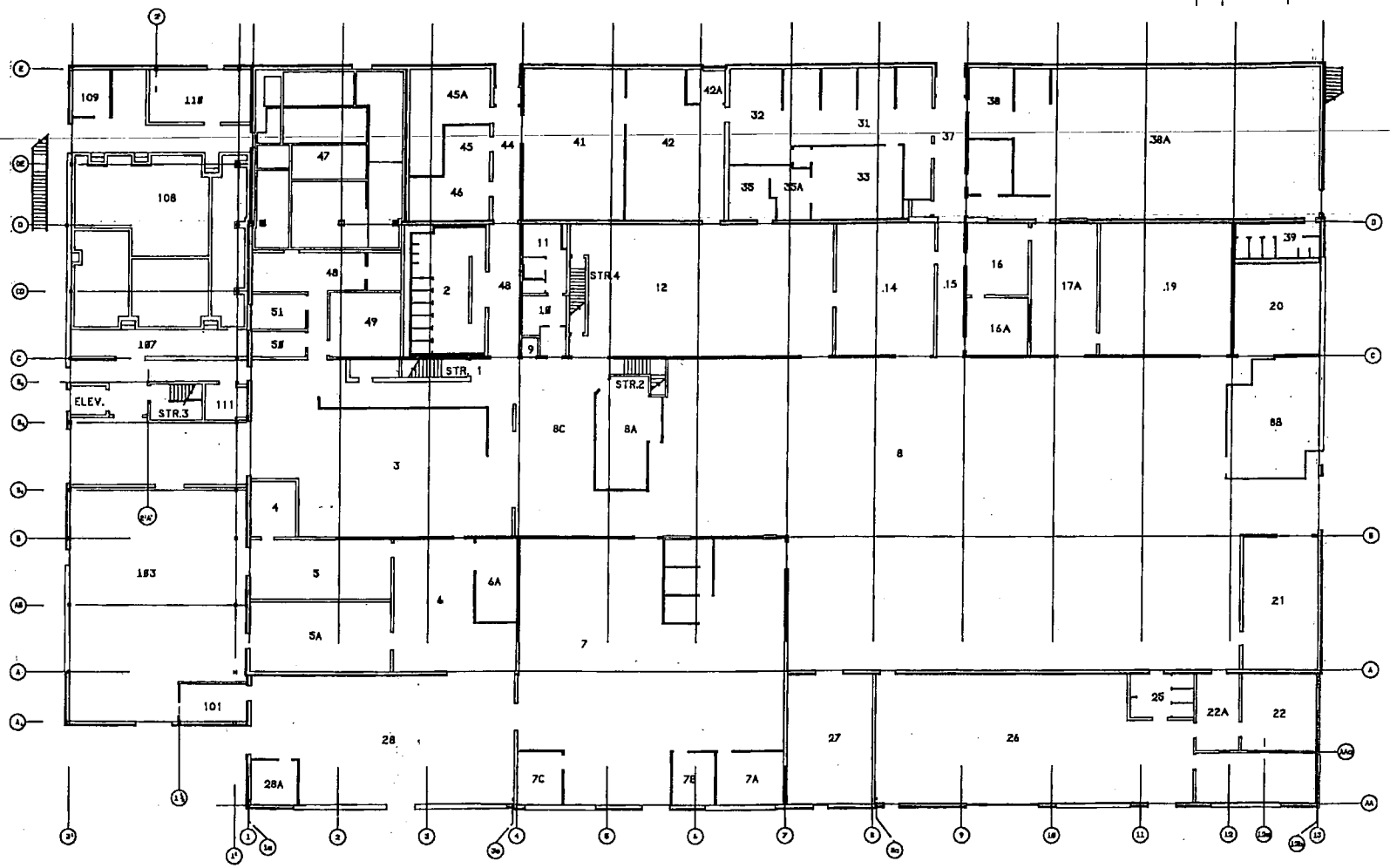

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UNCLASSIFIED

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(Title) (Date)

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SAFETY COMMITTEE REQUIRED:
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PART CLASSIFICATION

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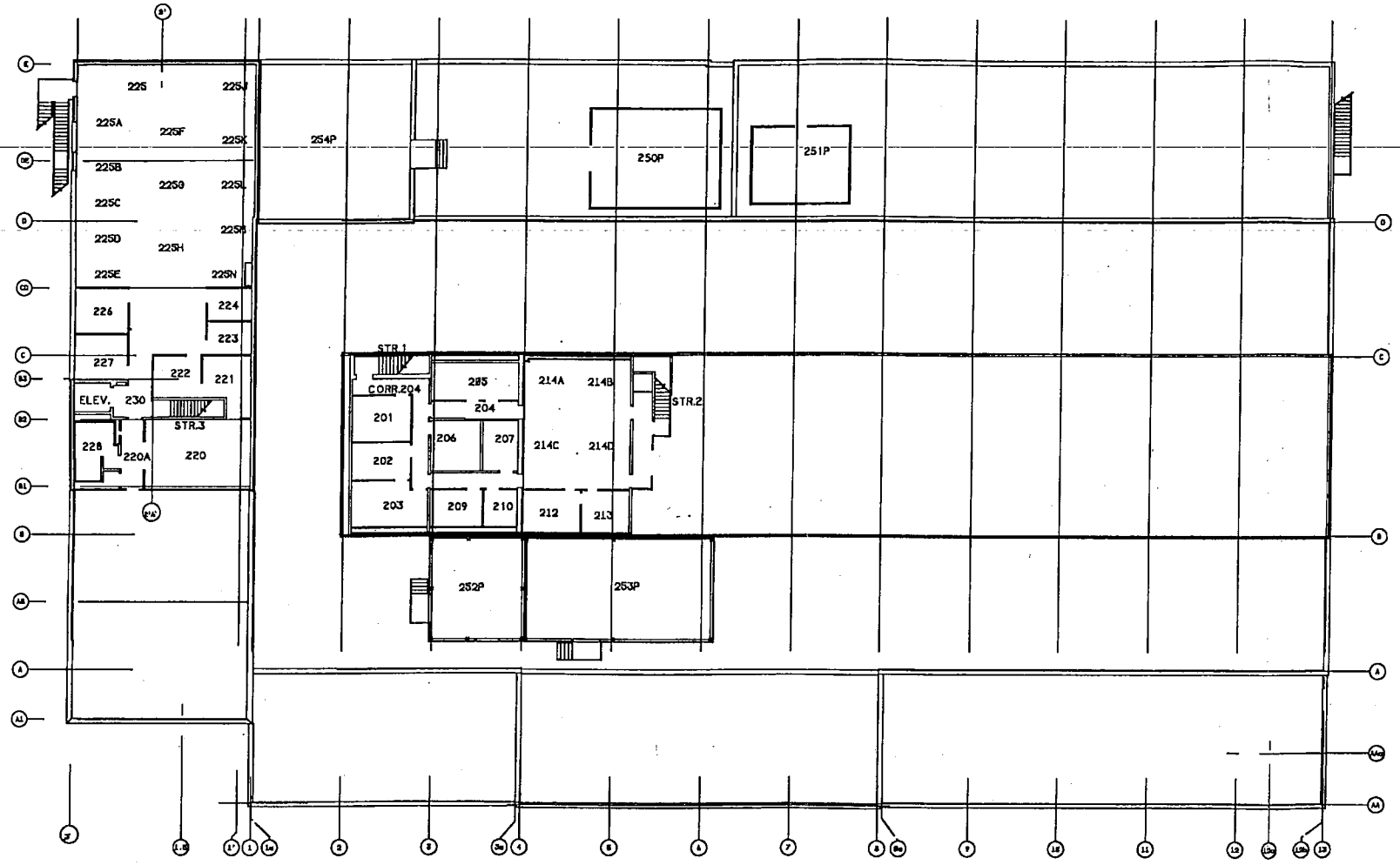

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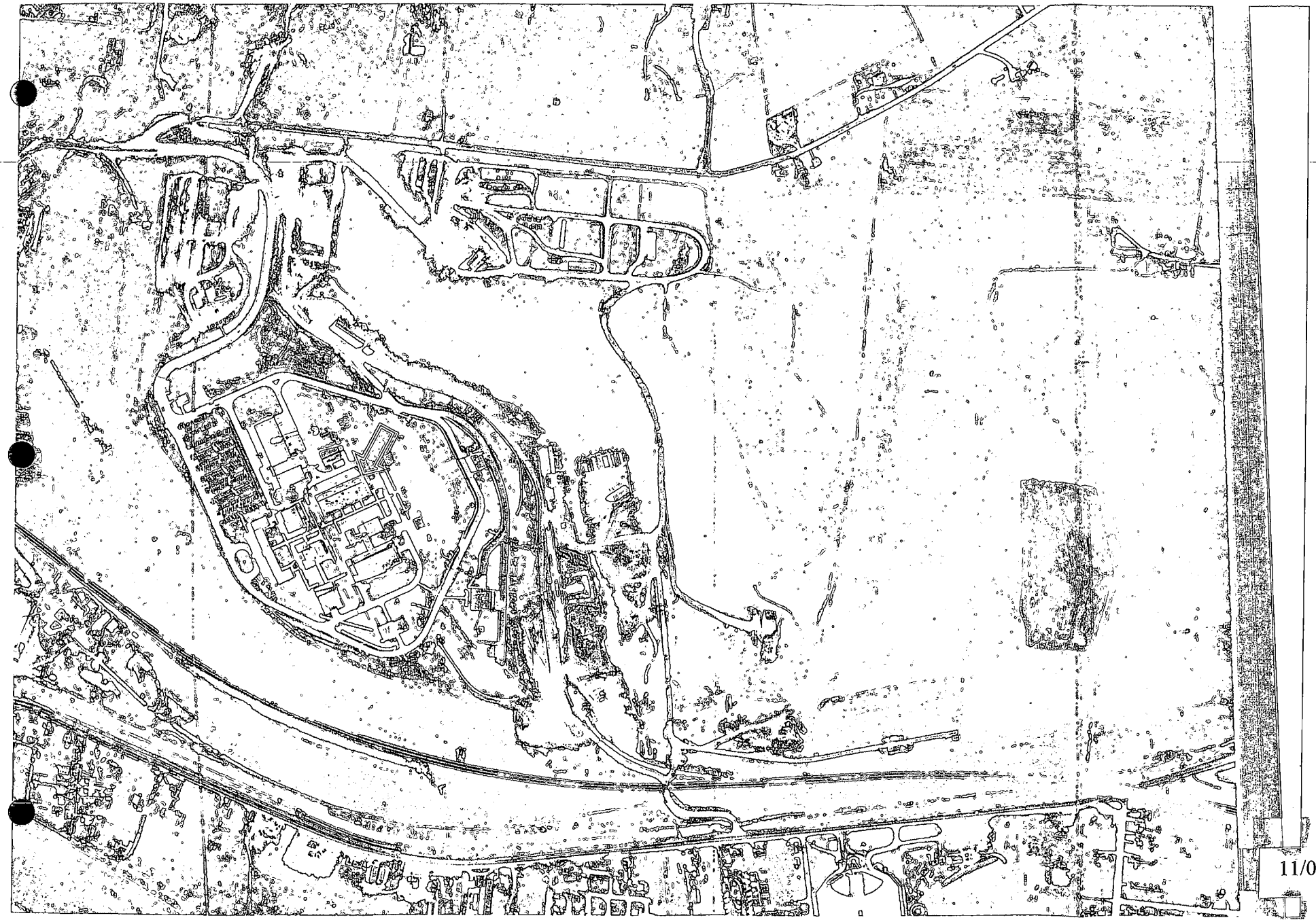

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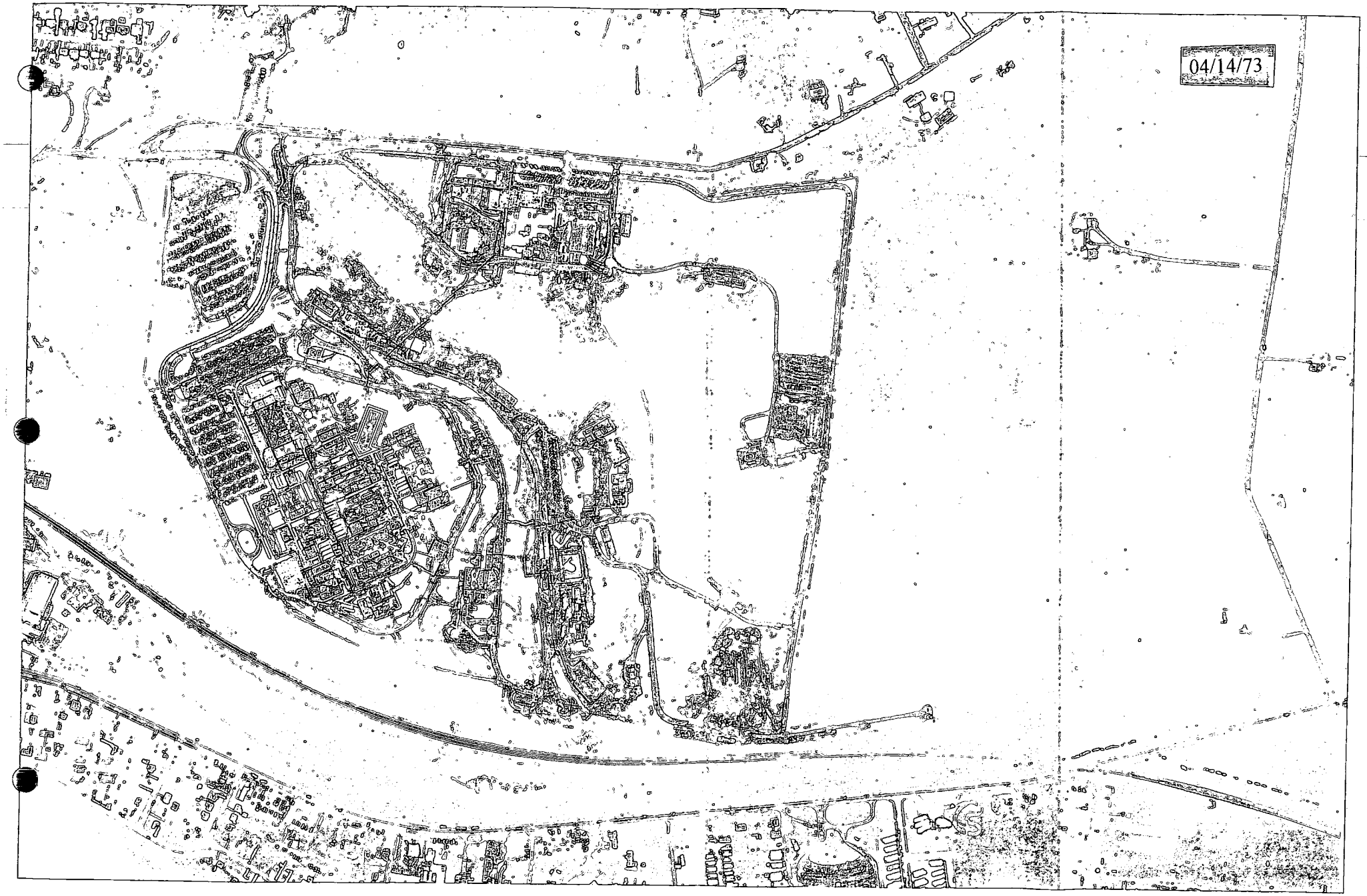
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