OVERSIZE PAGES

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Admin. Record
9812220003

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-261/98
December 9, 1998

98-TC/12-09

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
BUILDING DS: DELIVERY OF FINAL BUILDING DATA PACKAGE

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

Dear Mr. Provencher:

In response to Public Review comments received from the MMCIC, BWO has revised the Building DS Building Data Package. Attached are the document revisions and revision insertion instructions. Frank Schmaltz of MEMP has authorized the release of this revision package to USEPA, OEPA, and ODH. Copies will also be distributed to the MMCIC and the Public Reading Room. Insertion of the revisions into the current Public Review document will create the "Final" document version.

Please advise if additional copies are required. 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: T. Fischer, USEPA, (1) w/attachment
B. Nickel, OEPA, (1) w/attachment
R. Vandergrift, ODH, (1) w/attachment
T. Tracy, DOE, HQ, (1) w/attachment
O. Vincent, DOE/MEMP, (1) w/attachment
A. Kleinrath, DOE/MEMP, (1) w/attachment
B. Thompson, BWO, (1) w/attachment
D. Bird, MMCIC, (1) w/attachment
Public Reading Room, (5) w/attachment
Administrative Record, (2) w/attachment
DCC, w/o attachment

Revision Insertion Instructions

(Start with the "Public Review" copy of the DS Building Data Package.)

1. Remove the current Narrative section and replace with the enclosed Narrative section. This new narrative includes all pages from the blue/green cover through page 15.

2. Remove Appendix A and replace with the enclosed Appendix A.

3. Insert the enclosed Appendix G information at the front of Appendix G.

4. Remove the current Appendix N title page and replace with the enclosed Appendix N title page (one page only).

5. Add Hierarchy page to the end of the complete document.

981220003

MOUND

Environmental Restoration Program

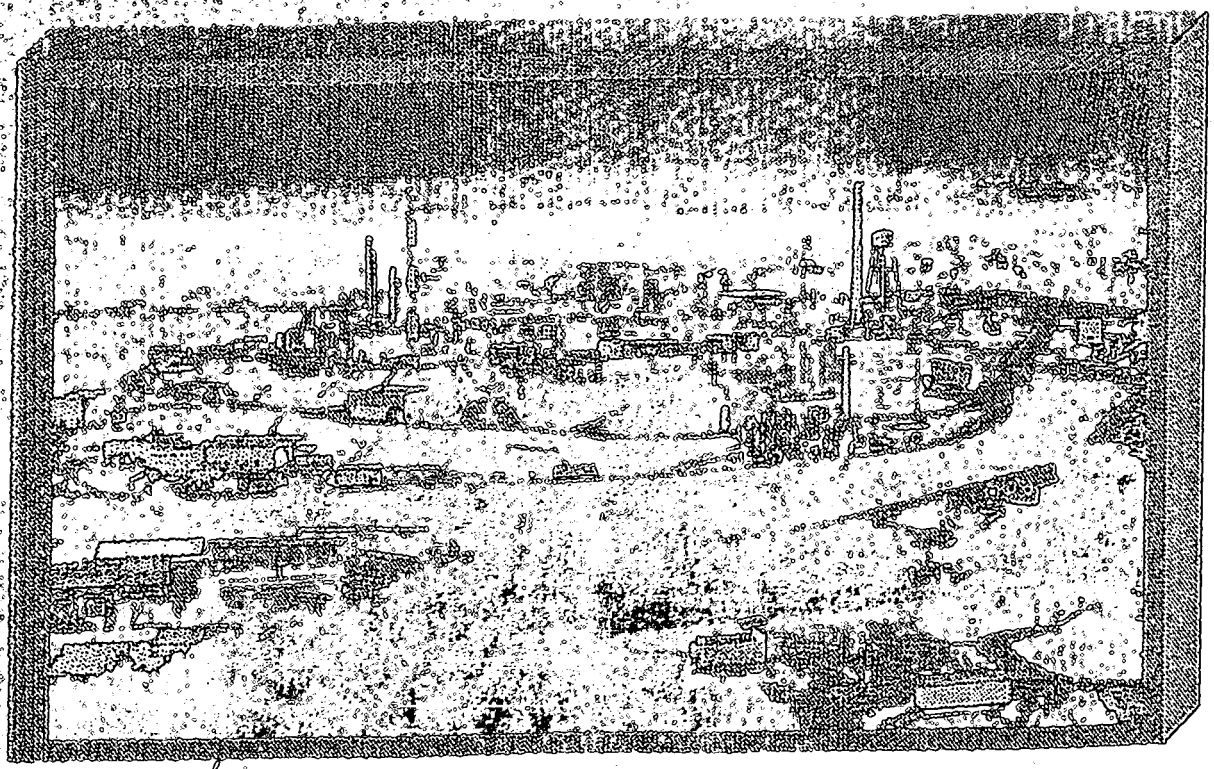
OHIOEPA

MOUND PLANT

Building Data Package

DS Bldg.

Located within Release Block Q



BDP DS

REV	DESCRIPTION	DATE
PUBLIC RELEASE **0**	Available for comment.	**June 01, 1998**
FINAL **1**	Comment period complete. MMCIC comments noted.	**DEC. 01, 1998**

MOUND

Environmental Restoration Program

MOUND PLANT BUILDING DATA PACKAGE

Notice of Public Review Period

OhioEPA

The following Building Data Package will be available for public review in the CERCLA Public Reading Room, 305 E. Central Ave., Miamisburg, Ohio beginning June 17, 1998. Public comment will be accepted on this package from June 17, 1998, through July 17, 1998.

BDP DS Bldg: Development/Standards

Written comments may be sent to U.S. Department of Energy, c/o Paul Lucas, P.O. Box 66, Miamisburg, Ohio 45343-0066 or by E-Mail to: *paul.lucas@em.doe.gov*

Questions can be referred to DOE Office of Public Affairs at (937) 865-4578

The Mound Core Team
P.O. Box 66
Miamisburg, Ohio 45343-0066

Mr. Stan Abrahamson
Property Manager
Miamisburg Mound Community Improvement Corporation
720 Mound Road
Miamisburg, Ohio 45342-6714

Dear Mr. Abrahamson:

The Core Team, consisting of the U.S. Department of Energy Miamisburg Environmental Management Project (DOE-MEMP), U.S. Environmental Protection Agency (USEPA), and the Ohio Environmental Protection Agency (OEPA), appreciates your comments on the DS Building Data Package.

Attached please find responses to comments for the DS Building Data Package.

Should the responses to comments require additional detail, please contact Art Kleinrath at (937) 865-3597, and we will gladly arrange a meeting or telephone conference.

Sincerely,

DOE/MEMP: _____ 11/19/98
Arthur W. Kleinrath, Remedial Project Manager

USEPA: _____
Timothy J. Fischer, Remedial Project Manager

OHIO EPA: _____
Brian K. Nickel, Project Manager

Substantive Comments

1. In Section 3.2, *Summary of Environmental Concerns and Findings*, of the Building DS Data Package, it appears that the majority of the environmental concerns have been addressed and removed or will be remediated as part of a different project. However, the disposition of the following concerns either need further clarification or needs to be addressed:

- Section 2.3 notes that interior solvent drain lines were "emptied and confirmed emptied in October 1996," as noted in the HOK/K ASTM Report (Appendix P). The HOK/K report states that the solvent drain lines had been disconnected from the solvent storage shed (also empty) and that Mr. Bornemann (key site manager for the report) had opened the valves to the piping in Room 125 and no solvent had discharged. However, HOK/K had also stated in Section 7.0 of their report, *Findings and Conclusions*, that "the interior solvent drain pipes that formerly carried [raw product and] spent solvent [to and] from the solvent sinks and ...the Building DS solvent storage shed are still in place. The entire plumbing network and location of the lines should be determined, and if necessary the pipes should be drained and removed." Although these lines are no longer actively connected, they are still in place and there is no evidence that they have been thoroughly cleaned. Pockets or residues of solvents/chemicals that were used in the lines may still be present. If the drain lines are to be permanently abandoned, they should be cleaned and removed. If the possibility exists that they may be reused, the lines should be cleaned or documentation should be produced that indicates that they have been cleaned.

Response:

At the time of the binning decision, the Core Team was aware of the recommendation to clean/remove these lines. Although it is possible that there is solvent or product in the lines, the Core Team decided that this does not pose a concern for human health or the environment as long as this information is available. The next operator of the building will decide if the lines are permanently abandoned or reused.

- Appendix L of the Building DS Data Package includes a significant amount of soil sampling analytical results. A number of these surface samples and borehole samples produced analytical results that exceed background values or 10^{-6} Guideline Values for the constituent in question (including plutonium-238, thallium, beryllium, selenium, and magnesium). No mention is made in Section 2.3 of the Building Data Package as to how, when, or under what project administration these soil exceedances will be addressed. Section 2.3 does mention a concern of "PU-238 & Thorium in Soil," indicating that a Pu-238 sample result of 268 pCi/g and a thorium sample of 11.6 pCi/g were detected. ID SCR 307, "...approximately 45 feet south from the footprint of DS

238 & Thorium in Soil," indicating that a Pu-238 sample result of 268 pCi/g and a thorium sample of 11.6 pCi/g were detected. ID SCR 307, "...approximately 45 feet south from the footprint of DS Building," is then referenced, presumably as the location of the Pu-238 and thorium detections. However, SCR 307 is not included in the data presented in Appendix L. Clarification of the management of these soil exceedances needs to be included in the Building DS Data Package.

Response:

SCR 307 is the location of the 268 pCi/g ^{238}Pu and 11.6 pCi/g thorium measurements. Since this location is approximately 45 feet from the building. The data for this location are not listed in Appendix L. This location will be addressed as PRS 415, a new PRS.

Sampling locations A1-14, SO 368, SO 396, and SO 377 are within 15 feet of DS Building and exhibit measurement results above background values but not above 10^{-6} Guideline values. The core team decided that these locations do not need further investigation or review.

Sampling locations A2-8 and A1-11 exhibit measurement results for some constituent above background and 10^{-6} Guideline values but not above 10^{-5} Guideline values. These locations will be addressed in PRS 415 and evaluated by the Core Team.

- The following Recognized Environmental Condition was stated in the HOK/K Phase 1 ASTM Report:

"A sink in the X-ray photographic dark room sits on a raised concrete dais with a metal cover, and piping from the photographic development machine appears to be routed into the dais. Our key site manager did not know what features were below the metal cover. The construction, condition, and contents of the area below the metal cover should be investigated."

There is no statement in the Building DS Data Package indicating that this feature has been investigated or the issue resolved.

Response:

The DS Building Data Package did not discuss the dais. In subsequent investigation the metal cover was raised. The area below the metal cover consists of an elevated curb, most probably intended to serve as a catch for sink discharge. The catch is empty and there is no obvious evidence of residual substance.

2. MMCIC is utilizing the areas immediately adjacent to Building DS for parking spaces for the commercial businesses in E Building and DS Building. MMCIC plans to pave these gravel areas once remediation of the cobalt-60 contaminated drain lines (PRS 122) is completed. MMCIC asks that 1) it be notified prior to initiation of remediation activities so that alternate parking can be arranged for its tenants, and that 2) once remediation of PRS 122 is completed, the areas surrounding Building DS be restored and graded to a condition sufficient for paving the new parking areas.

Response:

The Core Team appreciates this information about MMCIC's plans for this area and understands the concern. The DOE will keep MMCIC informed as plans for PRS 122 are developed.

3. MMCIC personnel have observed brown viscous material oozing between the floor tile in numerous places in the west end of the building. Presently, July 20, 1998, it is most apparent in Room DS 209.

Response:

The Core Team thanks you for pointing out the conditions in DS 209. In subsequent visits to that room, it appeared that moisture, possibly condensation, has entered under the floor tiles. Water mixed with dirt, grease, and floor adhesive has worked its way out between the cracks of the tile. No process took place in DS 209 that would account for the presence of the material. No further action is planned.

4. Metrology and several User Center operations are being carried out by BWO in the building. As with the PRS 122, the environmental impact of their continued operation should be evaluated, and if necessary, cleanup prior to title transfer.

Response:

The Building Data Package describes conditions at a particular point in time. For DS Building, it is March 1998. Before title for a piece of Mound Site is transferred, additional environmental reviews (Residual Risk Evaluation) and disclosure summaries (FOST-like document) will be performed. The environmental impact of continued operations in DS will be evaluated prior to title transfer.

Errata

1. Section 4.2.2.3 is poorly worded or in error. It states that "there are no known hazardous materials, petroleum products or chemicals, other than the water-soluble non-hazardous cutting oil (cimperial 1011) associated with current or past operation in DS Building." This statement is contradicted by Appendix F and Appendix K, in which chemicals/compounds such as mercury, acetone, Freon, etc. are listed, and the documented historical use of explosives, X-rays, solvents, and photographic chemicals in Building DS.

   The wording in this Section 4.2.2.3 should be clarified.

Response:

Section 4.2.2.3 has been changed to read "All chemicals from previous operations have been removed from the building. Remaining chemicals are associated with current user centers and BWO metrology."

2. Section 4.2.2.1 is also poorly worded or in error. It states that "the DS Building safe shutdown survey indicated no direct or removable contamination on the building's floors, corridors, or stairways." This is contradicted by data in Appendix G that shows a number of floor sample radiological detections (as well as equipment, machinery, and cabinet/furniture sample radiological detections) reported during 1996 Building DS radiological surveys. The sample locations associated with these detections were either posted as Controlled Areas and later decontaminated or, if a moveable item, were bagged/tagged and relocated to a Radiological Management Area in another room or building.

   The wording in Section 4.2.2.1 should be clarified.

Response:

Section 4.2.2.1 has been changed to read "DS Building safe shutdown surveys conducted in 1996 did indicate one contaminated location in Room 221 D. Subsequent to cleanup, readings verified the removal of the contamination. No direct or removable contamination remains on the building floors, corridors, or stairways. The equipment identified as contaminated during the 1996 survey has been removed from the building." In addition, the results of a survey performed recently (9/21/98) in Rooms 221 C and D will be added to Appendix G.

3. Pages are missing from the Science and Engineering Associates, Inc. (SEA) report in Appendix N, regarding radiological and video surveys of the radiological drain lines under Building DS. There is no indication that this appendix was intended to include only excerpts of the SEA report.

Response:

Appendix N will be retitled to note "Excerpts."

MOUND PLANT RECOMMENDATION

DS BUILDING

Background:

DS Building is a 47,810 square foot single story concrete building with a built up membrane roof and three penthouses. It was constructed in 1965 and served as the Metrology Lab and Explosive Testing Facility. PRS 128, the DS Building Solvent Storage Shed, is also considered as part of this facility.

Recommendation:

After thorough review of the environmental data and the Building Data Package, the Core Team agrees that no environmental concerns are associated with DS Building. Because of the presence of PRS 122 (radioactive waste lines) located underneath DS Building, the Core Team has determined that it is not appropriate to transfer DS Building at this time. After PRS 122 is evaluated as NFA or clean up has been completed, title transfer for DS Building can occur. However, the Core Team feels that DS Building is protective of human health and the environment for the purpose of leasing for commercial/industrial use.

Concurrence:

DOE/MEMP: _____ 4/16/98
Sam Cheng, D&D Team Leader (date)

USEPA: _____ 4/23/98
Timothy J. Fischer, Remediation Project Manager (date)

OEPA: _____ 4/16/98
Brian K. Nickel, Project Manager (date)

MOUND PLANT

Building Data Package

BDP DS Bldg.

Release Block Q

N
H
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DS Bldg.
L
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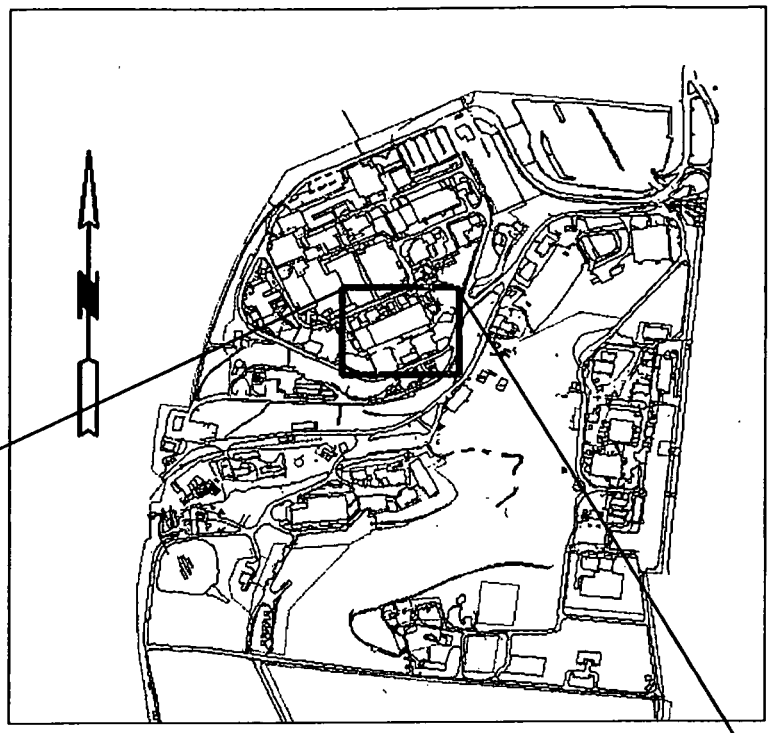
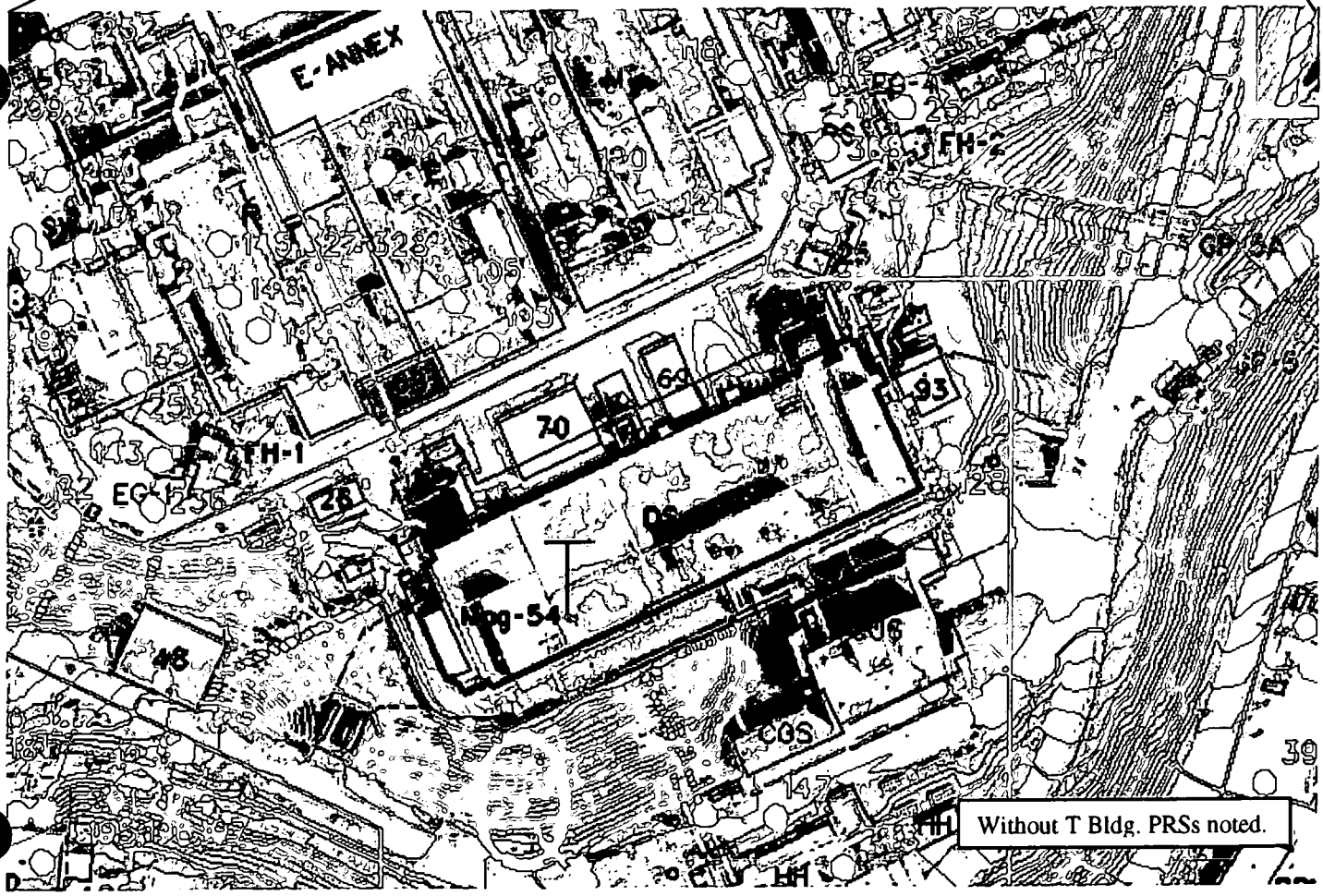
Mound Plant

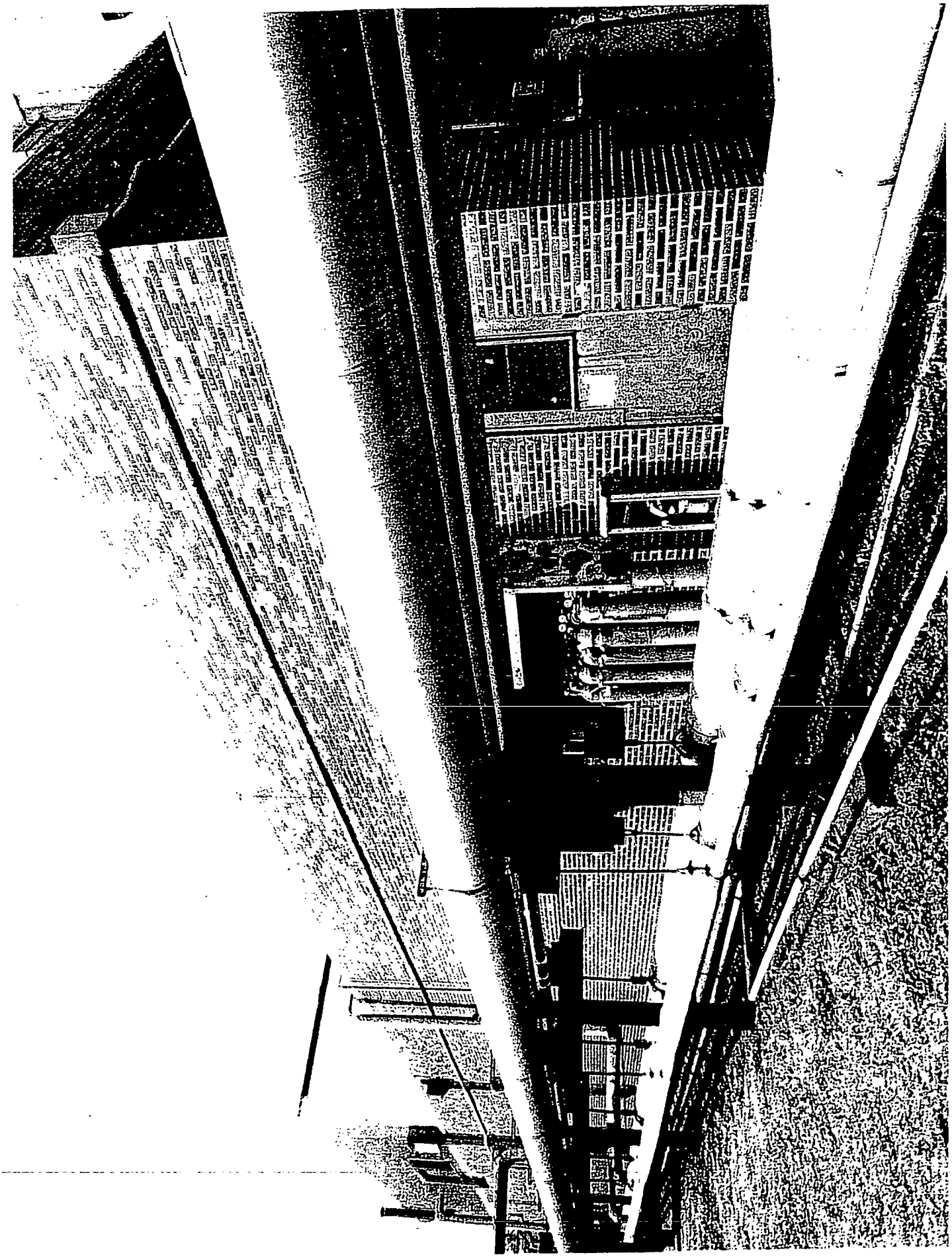
DS Building
Standards & Labs
EM Labs, Offices, & Standards

Release Block Q

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

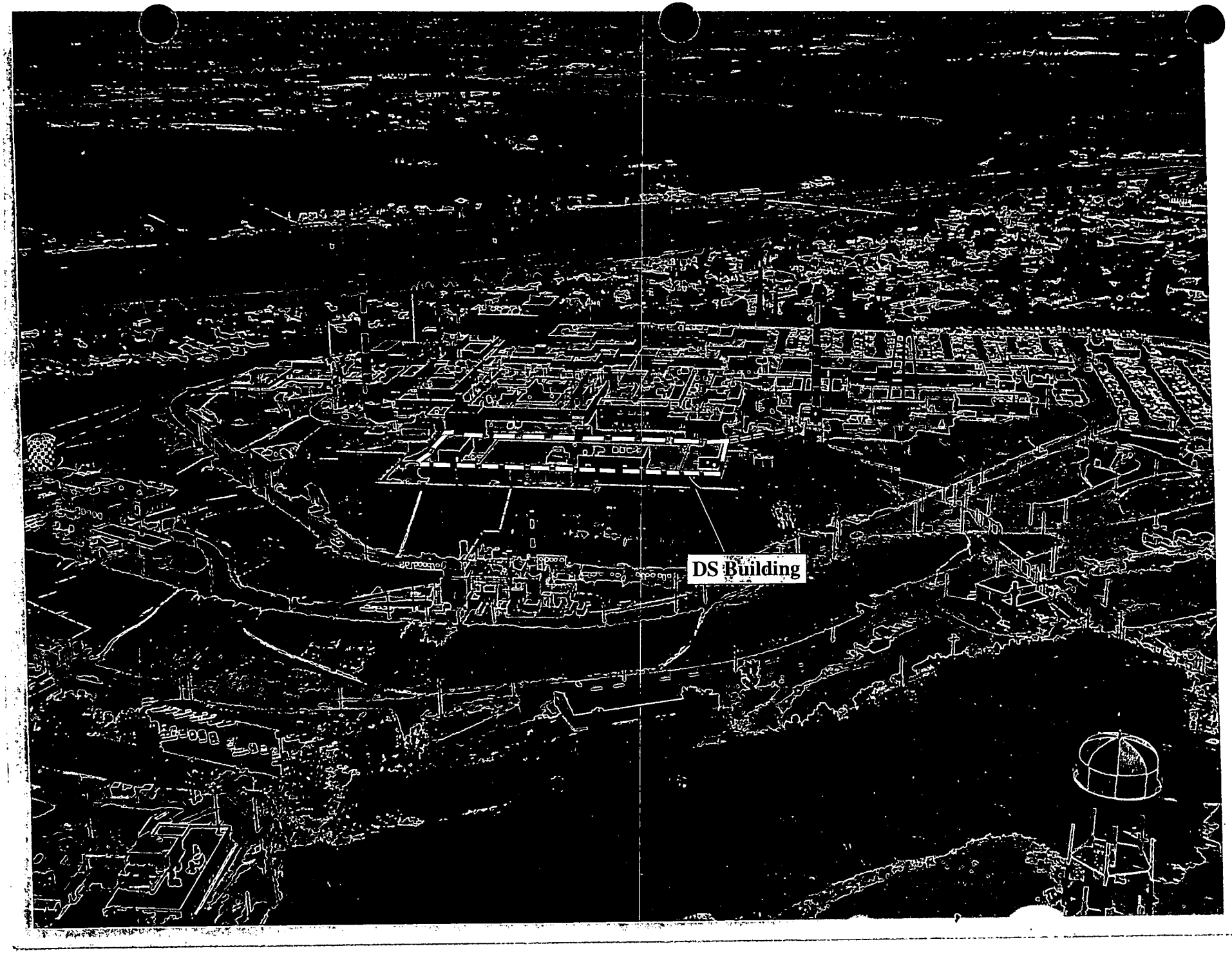


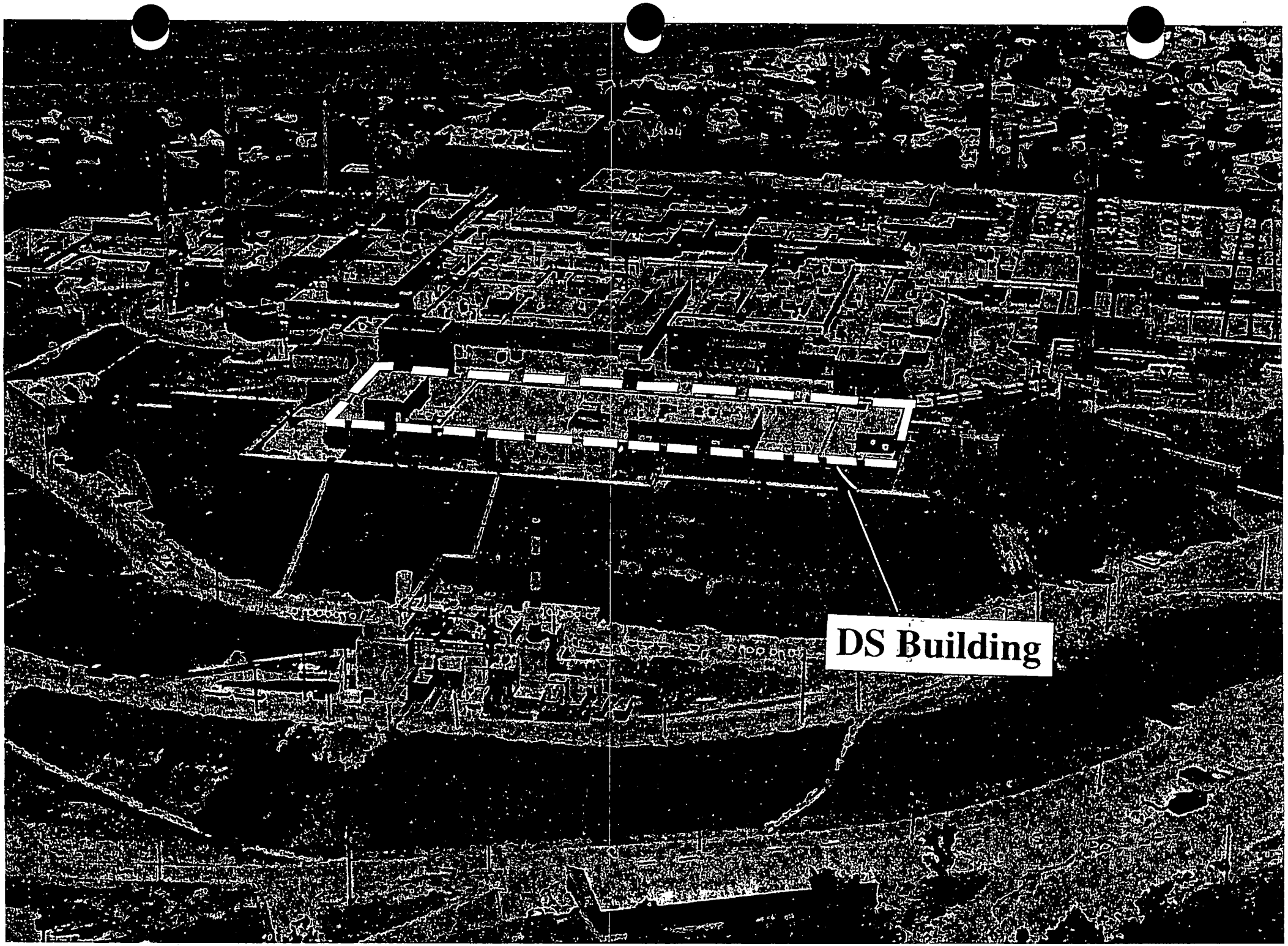




Mound Plant Building DS

9.5-91


DS Building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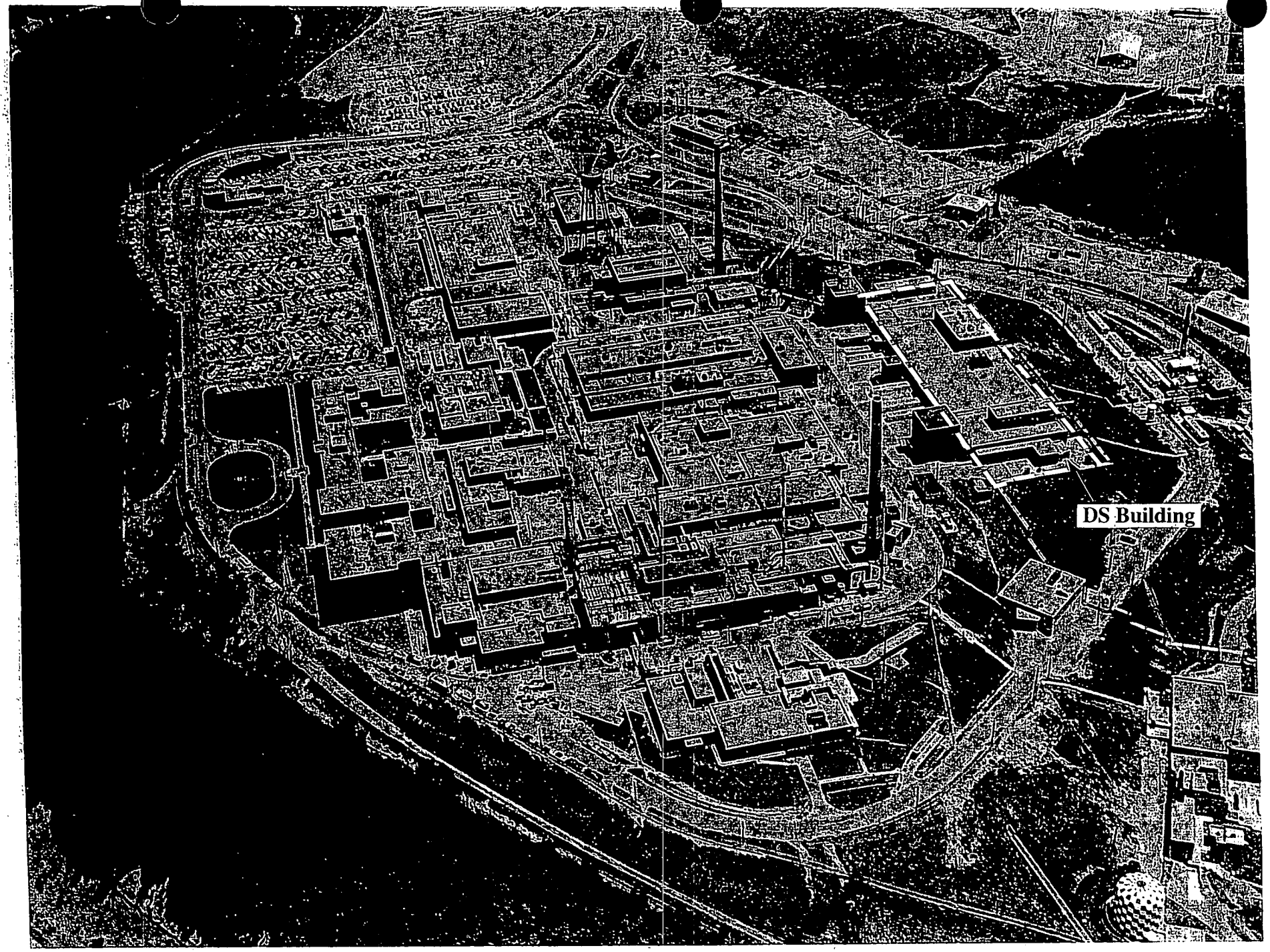
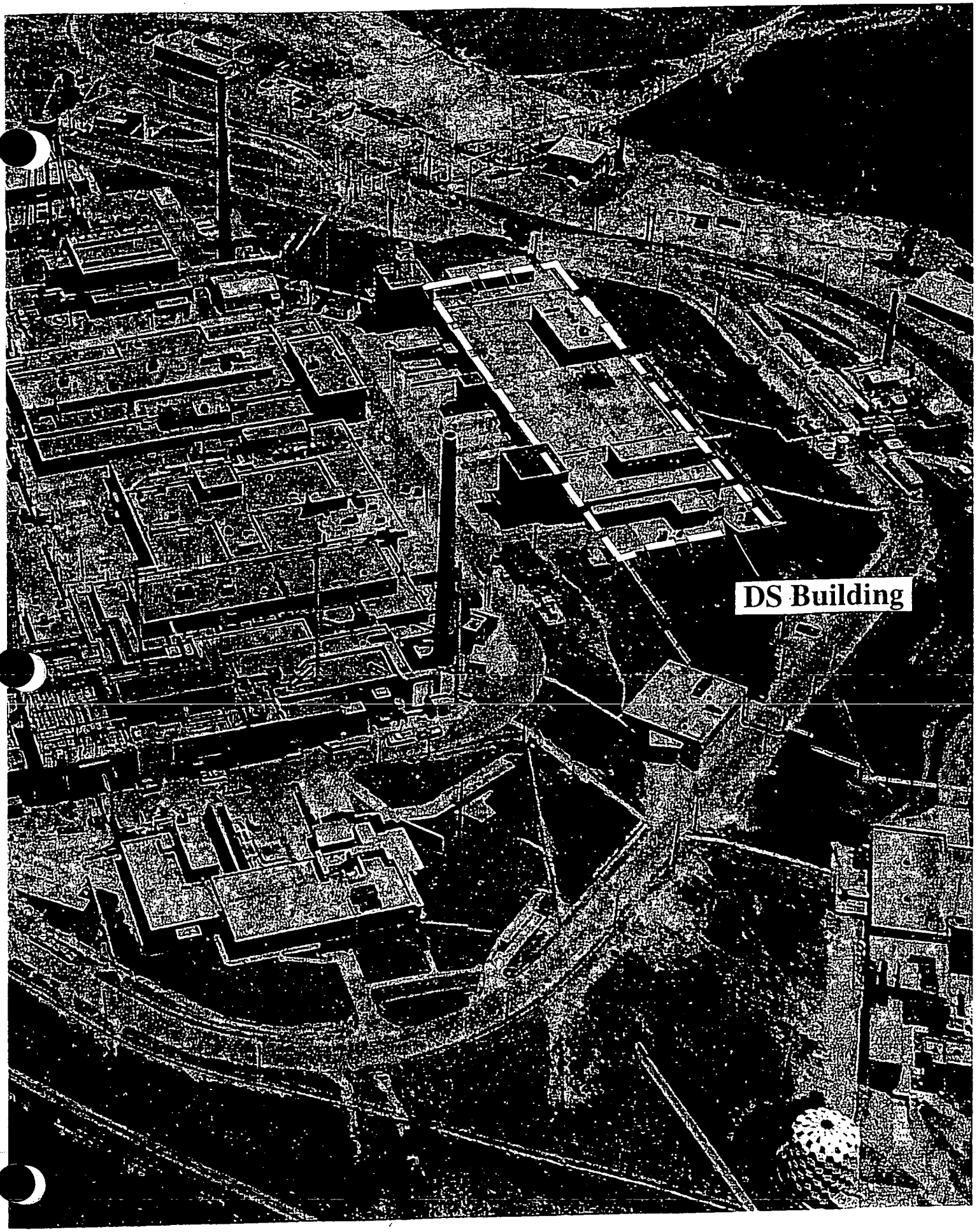
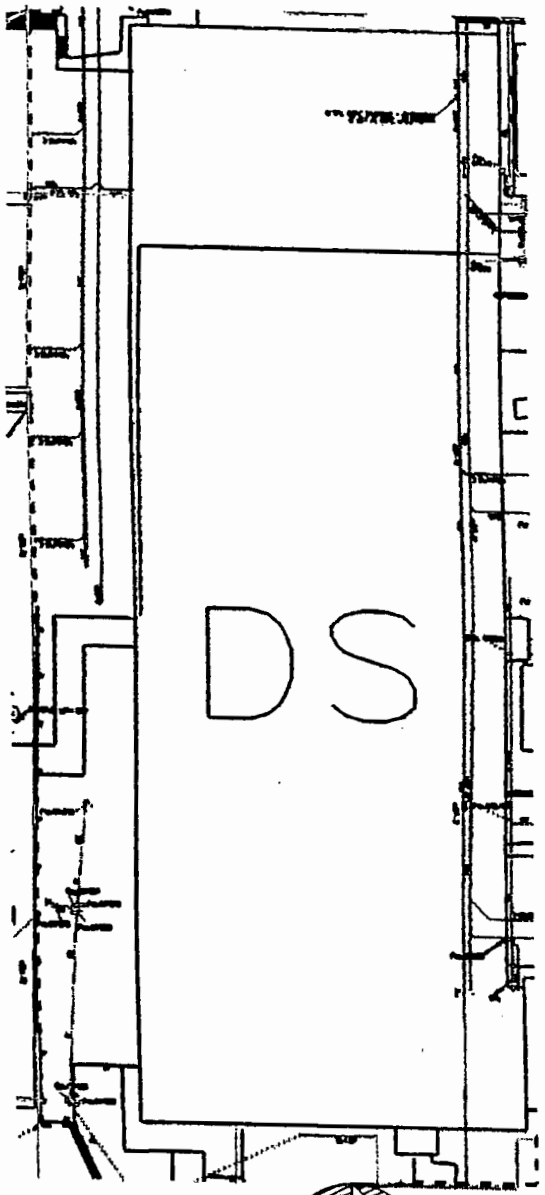

DS Building


DS Building



FIRE
POTABLE
RAW
SANITARY
STORM
RADIOLOGICAL

E.G. & G. - MOUND

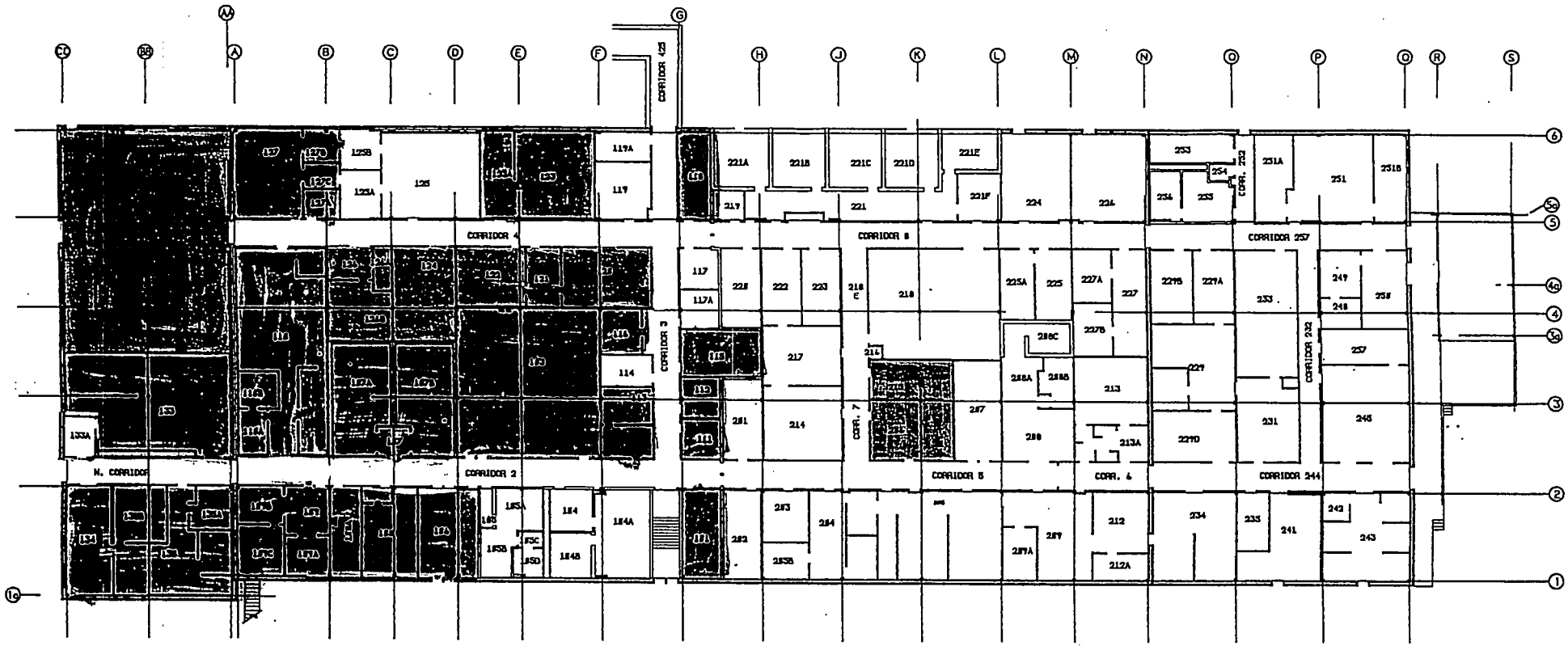
UNDERGROUND WATER & WASTE LINES
DS BLDG.

DATE: 3-5-86

UNCLASSIFIED

9-5-87

ISS	DATE	REVISION	BY	CHKR	ENG	LP&EC	APVD	R
0	12/12/91	ASBUILT ISSUE	DCW				DVD	



METROLOGY

EG&G STAR CITY

PRECISION JOINING TECHNOLOGIES

CLEAN ROOM WANTED BY MMCIC INTACT

DS BLDG
FIRST FLOOR
BLDG CODE:3522

SHEET	1	2	3	4	5	6	TITLE (U) TITLE CLASSIFICATION
ISSUE	0	0					DS BLDG FLOOR PLANS
PART CLASSIFICATION							
DRAWING CLASSIFICATION	UNCL						SIZE D · DRAWING NUMBER FSD911304 · JOB NUMBER 12335
DWG TYPE	GFP	PROM	DS BLDG	CASE	14065	SCALE AS NOTED	SHEET 1 OF 2
STATUS	MD-REL-12/12/91			ORIGIN	MD-BR3-V3.0		

DESIGN ENG	PROJ MGR	
SPONS	ENG SUPV	
LP & EC	PEER REV	
ENG MGR		
APVD	DATE	

APPROVALS: DATE:
AFETY COMMITTEE REQUIRED:
___NONE ___TRUEBOC ___TEBOC ___EMBOC
TECH. REMP.
GR. MGR.
TRUEBOC
TEBOC
EMBOC

BUILDING DATA PACKAGE (BDP)

DS BUILDING

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Appendix I Asbestos Summary/Information
Appendix J Lead Summary/Information
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Appendix L Noted Soil Sampling, Vicinity
Appendix M Occurrence Reports
Appendix N UGL/Co-60 Information (Excerpts)
Appendix O Beryllium Information
Appendix P Phase I Environmental Site Assessment of DS Building (HOK/K)

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. The intended building disposition is "transfer." Ultimate disposition is a function of building condition and DOE/EPA evaluation.

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

1.2 Scope

This document has been prepared in response to an agreement between the Department of Energy (DOE), the U.S. Environmental Protection Agency, and the Ohio Environmental Protection Agency. It is a Building Data Package of DS 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 1527-94).

The scope of the investigation included the building, the soils beneath the building, and a 15-foot wide perimeter border around the building. This perimeter includes roadways, sidewalks, pavement, and grass covered areas. The investigation of DS 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
      - Chemical history
      - Lead paint
      - Asbestos
      - Radon

The building investigation was conducted by BWO personnel on December 1st and 2nd, 1997.

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

- Characterization of Mound's Hazardous, Radioactive, and Mixed Wastes, (August 1990)
- OU-9 Site Scoping Report, Volumes 1-12
- Mound Facility Physical Characterization, December 1992
- Active Underground Storage Plan, November 1994.
- OU-9 Hydrological Investigation Bedrock Report, January 1994.
- OU-9 Hydrological Investigation, Buried Valley Aquifer Report, March 1994
- Environmental Appraisal of the Mound Plant, March 1996
- Phase 1 Environmental Site Assessment of DS Building, (November 1996)
- Results of Radiological and Video Surveys of Drain Lines at the USDOE Mound Facility with the Pipe Explorer $_{TM}$ System, (January 1997)
- Title Search
- Lease Information
- EDR Report
- Building Prints

2.0 Building Specific Overview

Mound Plant is located in the southern portion of the corporation limits of Miamisburg, Ohio. The entire Mound Plant facility is situated on 305 acres of land and contains more than 132 buildings. The subject property consists of Mound Plant DS Building footprint and an arbitrary 15-foot wide perimeter around the building. DS Building contains 47,810 square feet. It was constructed in 1965. No waste was stored in DS Building.

2.1 Current Uses of DS Building

The building houses metrology, receiving inspection and "User Centers" leased to the MMCIC. User Center activities include photographic processes for flexible circuits (Star City), laser resistance welding (Precision Joining Technologies) and calibration activities (Mound Metrology Inc.). Most activities are restricted to the east part of the building. (See Appendix D.)

2.2 Past Uses of DS Building

The building was used for metrology and explosives production and development.

2.3 Summary of Environmental Concerns and Findings

DESCRIPTION	COMMENT	RESOLUTION
Lead Paint	Due to the age of the building it is assumed lead paint is present.	Any cracking or peeling paint has been removed. Ref. Para. 4.2.2.4
Chemicals	The DS Building solvent storage shed has been identified as PRS 128.	A search of OU9, Volume 11, Spills and Response Actions, and discussions with historical experts validates a determination that there were no historical spills. Ref. Para. 4.2.2.3 Ref. Para. 4.2.1.3
Radiological	The Radiological Contaminated Areas have been decontaminated with the exception of two items.	These two items have been disposed of and the building is no longer posted. These items were removed on 4/1/98 by rad ops. Ref. Para. 4.2.2.1
Stains & Corrosion	Rust stains on floor of Room 125A were of a size and location indicating that they resulted from corrosion of metal spacers supporting the solvent tank. No evidence of overflow of solvents from the storage tank itself based on the interview with the building manager.	Have been cleaned up. Ref. Para. 5.1.3
Underground Lines	T-Building related Cobalt 60 contamination.	Will be treated as PRS 122 under the soils project. Ref. Para. 4.2.1.3
Beryllium	Equipment in 131A was potentially contaminated.	The potentially contaminated equipment was removed in the 1980s. Ref. Para. 5.7 Ref. Appendix O, page 3 of 9
Pu-238 & Thorium in Soil	Pu-238 sample was 268 pCi/g. The thorium was 11.6 pCi/g. ID SCR 307 is approximately 45 feet south from the footprint of DS Building.	Will be evaluated as PRS 415.
Interior Solvent Drain Lines	Pipeline integrity is subject of concern.	HOKK ASTM Report, page 35 describes that the lines were emptied and confirmed empty in October 1996.

2.4 Radiological Characterization Summary For DS Building Structure

TYPE	RSDS	LOCATION	SURVEY RESULTS (dpm/100 cm2)	5400.5 Guidelines for Groups 1 & 2 (fixed + loose) (dpm/100 cm2)	NUREG -1500 Guidelines (loose) (dpm/100 cm2)	Attachment 1 Limit (fixed + loose) (See Note 2) (dpm/100 cm2)	COMMENTS
Highest Alpha Smearable Activity	98-DS-26	Corr. #7	2.23	20	211	20	<AL
Highest Alpha Fixed Activity	98-DS-26	221-A	<100	100	Note 1	100	
Highest Beta Smearable Activity	98-DS-40	222	4.24	1000	9940	1000	<AL
Highest Beta Fixed Activity	98-DS-26	221-A	<5K	5000	Note 1	5000	
Highest Tritium Smearable Activity	98-DS-40	221-A	65.79	1000	Note 1	1000	<AL

Note 1: NUREG-1500 gives guidelines for loose beta and alpha only.
Note 2: The limits referenced above are based on MD-80043, Radiological work Requirements Procedure 400 "Transfer of Radioactive Material and Unrestricted Release of Property/Waste," Attachment 1.
Note 3: ND=Non-Detectable Swipe
Note 4: ND FIDLER=Non-Detectable Using FIDLER
Note 5: AL = Action Level
Note 6: MDA=Minimum Detectable Activity

2.5 Associated PRS Table for DS Building

PRS#	CERCLA or Bldg. Related	Binning Status	Comments
PRS 128	Building Related	TBD	DS Building Solvent Storage Shed (emptied)
PRS 122	CERCLA	TBD	Underground Rad Transfer Lines from T-Building

3.0 Site Description

3.1 Site/Vicinity Location and Characteristics

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

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

3.2 Description of Structures, Roads, Other Improvements Related to DS Building

DS Building is a one-story, 47,810-square foot structure of reinforced concrete and concrete block with a built-up membrane roof and three penthouses. Heating and air conditioning systems are central steam and chilled water. DS Building was constructed in 1965.

Potable water and sanitary services at DS Building are provided by the facility. The Mound Plant operates a potable water treatment plant (Building 24) that provides drinking water to the facility using groundwater produced from three on-site production wells. The Mound facility also operates an on-site sanitary sewer treatment plant (Building 57) to

manage the plant's sanitary waste water pursuant to a Nation Pollution Discharge Elimination System (NPDES) permit issued by OEPA. Due to the location of DS Building, the sanitary waste must be lifted to the Mound sanitary sewer system. The "ejector" lift station is located approximately 50 feet to the west of DS Building.

3.3 Current and Past Uses of Buildings Adjacent To DS Building

This information is documented in the Phase I, Environmental Site Assessment of DS Building, prepared by HOK/K, (See Appendix P).

4.0 General Records Review

4.1 General/Historical CERCLA Information

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

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 Mound Plant is currently operating a hazardous waste treatment and storage facility under a new RCRA Part B permit dated October 18, 1996. Mound Plant also maintains a NPDES surface water discharge permit with Facility I.D. number OH 009857. Permits for the open burning of wastes involving explosives and other fuels have been issued by the Regional Air Pollution Control Agency (RAPCA). Other operations that produce particulate or vaporous emissions are registered with RAPCA and OEPA. Mound Plant also submits annual Emergency and Hazardous Chemical Inventory forms to the OEPA, pursuant to SARA, Title III, the Emergency Planning and Community Right-to-Know Act. The 1995 version of this report indicated that no chemicals are stored in DS Building in quantities above the regulatory thresholds. (See Appendix K.)

4.2 Specific Record Sources

4.2.1 History of Past Occurrences, Spills, and Releases

4.2.1.1 Occurrence Reports (See Appendix M.)

An interview with the Occurrence Report Manager, Jeff Boston indicates that there were six Occurrence Reports submitted for DS Building during the period from 1991 to 1997. Of the six reports, four were related to fire alarm system malfunctions and the actuation of the fire protection sprinkler system. One report involved a cooling system ethylene glycol spill. The spill was cleaned and there was no release to the environment. In 1996 radiological contamination was found in several areas of the building during a safe shutdown radiological survey. As a result, some areas in the west end of the building were posted as Radiological Contamination Areas. The majority of these have been decontaminated / removed. The remaining contaminated items have been removed from the building.

4.2.1.2 Spills and Releases

There was no other spills reported other than those identified in the Occurrence Reports.

4.2.1.3 Associated PRS Overview

As a result of the investigations and documentation conducted to comply with the CERCLA cleanup process via the FFA/DOE ER program, DOE and B&W of Ohio have tabulated all the Potential Release Sites (PRSs) identified under the various regulatory programs in effect at the site. Many additional contaminants of concern and types of operations were identified beyond the original NPL listing of site activities. A total of 413 PRSs have been identified. One of these 413 PRSs, PRS 128, has been attributed to DS Building. PRS 122, attributable to T-Building, is related by geographic proximity.

PRS 128 - DS Building Solvent Storage Shed: This storage shed is located at the southeast corner of DS Building. During the on-site inspection, this building was empty; however, the OU-9 Site Scoping Report: Volume 12-Site Summary Report, December 1994 has the shed listed as in service. According to the report, chemicals stored in the shed included organic solvents (including 1,1,1-trichloroethane, trichlorofluoromethane, ethanol, and trichloroethane). The report also recorded a suspected release from this storage area, although no additional information could be found. Sampling in the vicinity noted no contamination of concern above action levels. (See Appendix L.) The area is managed by the Mound plant operations and maintenance program. The shed is intended for future use.

PRS 122 - Radioactive waste lines from T-Building running under DS Building. A survey indicated the presence of Cobalt-60 in the lines. (See Appendix N.) This CERCLA PRS will be treated as a soils project.

4.2.2 Past Sampling Data

4.2.2.1 Radiation Surveys

DS Building safe shutdown surveys conducted in 1996 indicate one contaminated location in Room 221 D. Subsequent to cleanup, readings verified the removal of the contamination. No direct or removable contamination remains on the building floors, corridors, or stairways. The equipment identified as contaminated during the 1996 survey has been removed from the building. (See Appendix G.)

4.2.2.2 15-Foot Sampling Data Summary

See Appendix L.

4.2.2.3 Chemical History/Removal (As Applicable)

All chemicals from previous operations have been removed from the building. Remaining chemicals are associated with current user centers and BWO metrology. (See Appendix K.)

4.2.2.4 Lead Paint

Congress established maximum lead concentrations in residential paint in 1978. This building was constructed in 1965. Lead paint has been found in the building and all flaking paint has been removed.

4.2.2.5 Asbestos

Mound's Technical Manual, Asbestos Program Manual, MD-10391, indicates that (known, assumed, suspected) asbestos is found in DS Building. All asbestos observed was not friable.

4.2.2.6 Radon

The results of a 1980-90 Mound Indoor Radon Study indicated an average radon concentration of 0.4 picocuries/liter in DS Building. The EPA recommended standard for radon is 4.0 picocuries/liter. (See Appendix H.)

4.3 Aerial Photographs

Aerial photographs from 1994, 1983, 1973, 1968, 1965, 1959, and 1949, were reviewed and copies are found in Appendix E.

The 1949 photograph shows the completed initial phase of construction on the Mound Plant Main Hill. Approximately fourteen (14) buildings are visible. Roadways on both the Main Hill and the eastern hill are present.

The overall Mound Plant facilities, as depicted in subsequent years continue to show change and expansion.

DS Building is visible in the photograph dated 1965.

5.0 Site Reconnaissance/Inspections: Findings, Observations

See also Appendix F. Findings have been addressed; verified by teleconference with Building Manager on March 24, 1998.

5.1 Hazardous Substances in Connection with Identified Uses

5.1.1 Space

User Groups are working in the building using standard industrial processes.

5.1.2 Heating/Cooling

The building's heating and air conditioning systems are central steam and chilled water. The building has fire sprinkler service. These systems will continue in operation.

5.1.3 Stains or Corrosion

In the rear of Room 125A is a cleaning hood with solvent dispensers and a sump for previous cleaning operations. Under the cleaning hood are stains that appear to be from past chemical storage practices. These stains have been cleaned as far as practical. The building manager confirms that these stains were most probably rust from corrosion of spacers under a catch container.

Stains were also observed in several of the User Center rooms currently occupied by Star City. Chemical containers left stains under a work table in room 122. In addition, staining was observed in a chemical storage area in room 126A.

5.1.4 Drains and Sumps

The building is also serviced by storm drains according to the underground utility diagram.

5.1.5 Wastewater

Potable water and sanitary service was provided for DS Building. The Mound Plant facility operates an on-site sanitary and storm water sewer treatment plant (Building 57) to manage the plant's storm water and sanitary waste water pursuant to a National Pollution Discharge Elimination System (NPDES) permit issued by OEPA. No wastewater was generated in this area.

5.1.6 Septic Systems

There is no evidence of septic systems (such as leaching field or septic tank vent pipes) in the vicinity of DS Building. Building blueprints show a sewer ejector station to the west of the building. This station is necessary as the elevation of this area is below the Mound sanitary sewer line.

5.1.7 Suspected Asbestos Containing Material

ACM in buildings can be found in five (5) forms: sprayed or troweled on ceilings and walls (surfacing materials); insulation around pipes, ducts, boilers and tanks (pipe and boiler insulation); transite (in ground piping); and in roofing materials (shingles and roofing felts); other products such as ceiling and floor tiles and wall boards (miscellaneous materials).

Past records indicate asbestos is found in the building. All asbestos observed was not friable.

5.1.8 Paint

Lead based paint was used in the U.S. prior to 1978, when Congress established the limits on the maximum lead concentration allowable in residential buildings. The risk of a lead based paint hazard exists only when painted surfaces are damaged (cracked, chipped, loosened, or chewed).

Because of the age of the building, it is likely that lead based paint has been used. Chipped paint was found and has been removed.

5.2 Hazardous Substance Containers and Unidentified Substance Containers

No unidentified substances were found in or near DS Building. Process chemicals are utilized in the building.

5.3 Storage Tanks

No storage tanks are associated with DS Building.

5.4 Indications of PCBs

Fluorescent lighting is used in this building. It is assumed they contain PCBs. They will be replaced with normal maintenance.

5.5 Indications of Solid Waste Disposal

No solid waste was observed in the building. No evidence of hazardous waste was noted in the immediate vicinity of the building.

5.6 Physical Setting Analysis, If Migrating Hazardous Substances Are An Issue

Migrating hazardous substances are not an issue.

5.7 Other Conditions of Concern

Another point of concern was the presence of Beryllium in equipment in Room 131A. The potentially contaminated equipment has been removed. (See Appendix O.)

5.8 Recent Interviews

5.8.1 Building Manager Interview

The current Building Manager of DS Building, Mr. Jeff Boston, has been employed at the plant for 17 years and has been the Building Manager of DS Building for the last year and a half. (See Appendix F.)

5.8.2 Telephone Interviews

Telephone discussions on April 13, 1998 with Mr. Jack Melke, Mr. Paul Lamberger, and Mr. Orien Dodds indicate that no spills occurred at the DS Building Solvent Storage Shed. This collaborates information in OU9, Site Scoping Report: Volume II - Spills and Response Actions, Final, Rev. 0, March 1992.

5.9 Historical Interviews

Additional interviews were also completed in 1990 and 1995 involving personnel working in the process area at that time. (See MLM-ML-90-48-0001, Characterization of Mound's Hazardous, Radioactive, and Mixed Wastes, August 15, 1990.)

Appendix A

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
BUSTR	Bureau of Underground Storage Tank Regulations
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
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
UST	Underground Storage Tank
VOC	Volatile Organic Compound

Appendix B

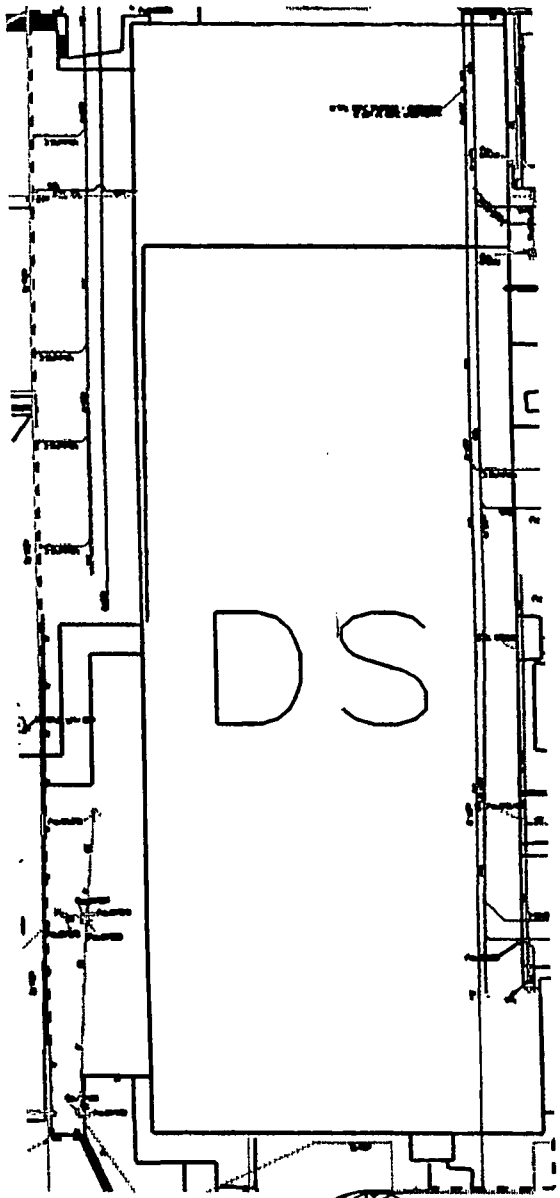
Map of Montgomery County

Appendix C

Site Plan and PRS Release Blocks

Appendix D

Building Drawings



FIRE
POTABLE
RAW
SANITARY
STORM
RADIOLOGICAL

E.G. & G. - MOUND

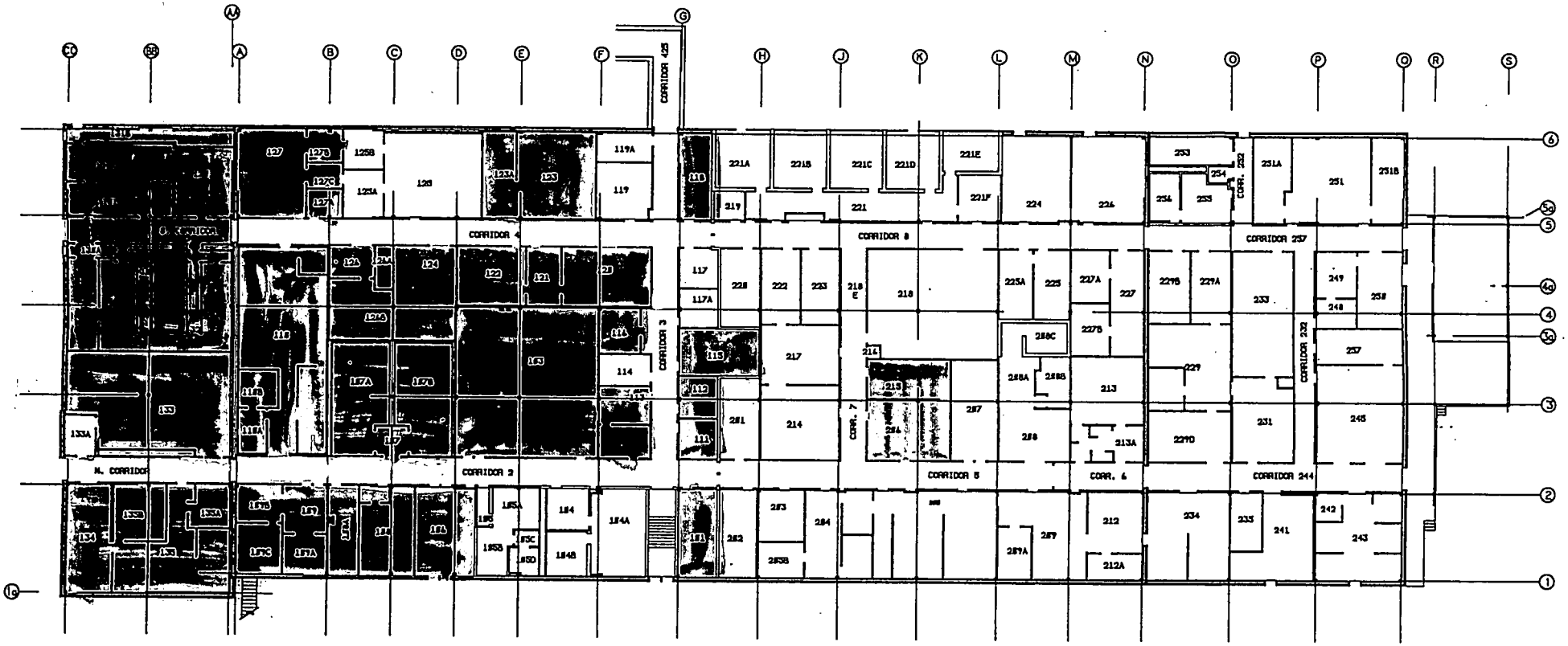
UNDERGROUND WATER & WASTE LINES
DS BLDG.

DATE: 3-5-86

UNCLASSIFIED

9.5-87

ISS	DATE	REVISION	BY	CHKR	ENG	LPMEC	APVD	N
0	12/12/91	ASBUILT ISSUE	DCW				DVD	



METROLOGY

EG&G STAR CITY

PRECISION JOINING TECHNOLOGIES

CLEAN ROOM WANTED BY MMCIC INTACT

0 5' 10' 20' 40'

DS BLDG
FIRST FLOOR
BLDG CODE:3522

APPROVALS:	DATE:
SAFETY COMMITTEE REQUIRED: ___ NONE ___ TRUEROC ___ TEROC ___ EMROC	
TECH. REMP.	
GR. MGR.	
TRUEROC	
TEROC	
EMROC	

DESIGN ENG	PROJ MGR
SPONS	ENG MGMT
LP & EC	PEER REV
ENG MGR	
APVD	DATE

SHEET	1	2	3	4	5	6	TITLE	(U) TITLE CLASSIFICATION
ISSUE	0	0					DS BLDG FLOOR PLANS	
PART CLASSIFICATION								
DRAWING CLASSIFICATION: UNCL							SIZE: D	DRAWING NUMBER: FSD911304
JOB NUMBER: 12335								
DWG TYPE: GFP	PRIM: DS BLDG	CADD: 14865	SCALE: AS NOTED	SHEET 1 OF 2				
STATUS: MD-REL-12/12/91	ORIGIN: MD-BR3-V3.0							

Appendix E

Aerial Photographs

Appendix F

Environmental Appraisal Report of the Mound Plant for DS Building (Extract)

9.5 BUILDING DS

9.5.1 Scope of Building DS 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 DS on February 19, 1996. The Environmental Appraisal Checklist (EAC) was used to record findings. The EAC is found in Attachment 1 (Section 9.5.6.1). Escorting the appraisers were the building manager and other knowledgeable personnel such as the process owner. Other information was supplied by the building manager and recorded on the Building Manager's Questionnaire (BMQ), included as Attachment 2 (Section 9.5.6.2).

9.5.2 Description of Building DS

Building DS is a one-story, 47,810-square foot structure of reinforced concrete and concrete block with a built-up membrane roof and three penthouses. Heating and air conditiong systems are central steam and chilled water *(Mound Facility Physical Characterization*, 12-1-93). The location of Building DS is shown in Attachment 3 (Section 9.5.6.3).

Building DS was constructed in 1965 (MD-10391, *Asbestos Program Manual*, 9-14-95). The building was used for metrology, explosive production, and development. The building still houses metrology, however the majority of the building is in the process of safe shutdown. Floor plans for the building are included as Attachment 4 (Section 9.5.6.4). Some of the rooms are under the User's Center Agreement. Building DS is not known to be contaminated with any radioactive or energetic materials (*Mound Facility Physical Characterization*, 12-1-93).

9.5.3 Summary of Findings

Building DS houses metrology, receiving inspection, User Center laboratories, private industry, and laboratories in the process of Safe Shutdown. The third floor is a utility penthouse. The metrology area contains processes conventional to metrology: measurement, calibrations and testing for the following five areas: electrical, dimensional, physical, mass, and temperature. The User Center Agreement was not inspected. The building is well-maintained, with several issues of environmental concern identified during the walk-through or during review of reference materials.

9.5.4 Observations

9.5.4.1 Air Emissions

There are 28 sources listed on the checklist. Several fumehoods listed in the permit applications are no longer active. Active hoods should be evaluated to determine if they are *de minimis* and then documented as required. Permit applications have been filed with the Regional Air Pollution Control Agency (RAPCA). There is one permit associated with the building. The fumehood that is permitted is currently located in a lab that is under the User Center Agreement. Several applications were returned by RAPCA because emissions were *de minimis*. Associated documentation resides with the EG&G Technology and Monitoring Group. There are no fuel-burning units in the building. There is no evidence of fugitive dust.

Since explosive work had been performed in the building in the past, the air system should be evaluated to ensure against the presence of explosive contamination. Oversight responsibility has not been determined for leases issued under the User Center Agreement by the Department of Energy (DOE). Until this determination is made EG&G Mound is not assuming an oversight role for contractors or lessees who operate air emission sources.

9.5.4.2 Wastewater 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.

9.5.4.2.1 Sanitary Wastewater

The building has sanitary services. According to a diagram of underground utility lines, presented as Attachment 5 (Section 9.5.6.5), the building is serviced by a sanitary line. Confirmation of drainage of sanitary waste into sanitary conveyance lines was not within the scope of this effort, therefore, dye tests or smoke tests were not conducted. This building is partially leased under the User Center Agreement.

Sanitary effluent is conveyed to the onsite tertiary wastewater treatment facility, and subsequently discharged to the Great Miami River. There is no monitoring of building effluent. EG&G MAT

has no oversight role for contractors or lessees who have the ability to discharge to the sanitary and storm systems. Based on operations data, supplied by the process owner, effluent from Building DS does not deviate from that expected by the sanitary treatment plant manager.

9.5.4.2.2 Storm Wastewater

The building is also serviced by storm drains according to Attachment 5 (Section 9.5.6.5). 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 has entered the storm drainage system.

9.5.4.2.3 Chemicals

Many chemicals are stored and used in the building. A list of chemicals found in Building DS is included in the BMQ which is presented as Attachment 2 (Section 9.5.6.2). The information was gathered as part of the chemical inventory which is conducted annually. The inventory dates to 1994. Confirmation of the 1994 inventory was not attempted as 1995 data were being compiled at the time of the appraisal. It is not known what chemicals are used by lessees or contractors.

Storage, handling, and disposal of chemicals listed in the BMQ were reviewed to assure conformance to regulations related to 40 CFR 122, 40 CFR 261-265,268,265, 40 CFR 268, and 29 CFR 1910. None of the chemicals listed in the BMQ are Clean Water Act (CWA) priority pollutants. Chemical storage and handling procedures are in place for proper disposal of chemicals. There is no evidence that chemicals enter the storm or sanitary drains. There have been no reported spills from Building DS.

9.5.4.3 Potable and Service Water

Potable water is supplied to the building. Backflow prevention devices are installed at all visible points of potential cross-connection. There are two water fountains located in the building. Their location and brand names are in Attachment 1 (Section 9.5.6.1) on the EAC. The fountains which supply drinking water have not been tested for lead. According to Environmental Protection Agency (EPA) protocol, annual sampling criteria do not require testing of each fountain. There is service water supplied to the building; it is not distributed within the building.

9.5.4.4 Chemical Storage and Hazardous Materials

Chemicals used in the laboratories and associated processes are stored in Building DS. There are flammable storage cabinets which meet standard National Fire Protection Agency (NFPA) requirements. Some chemicals in the flammable storage cabinets appear to be unused and/or outdated. Nonflammable chemicals were stored in the cabinets designated for flammable chemicals. Oxygen, acetylene and other compressed gases listed in the BMQ, presented in Attachment 2 (Section 9.5.6.2), are used and properly stored and maintained. Material Safety Data Sheets (MSDS's) are available in the building, and are prominently displayed and readily

accessible to employees. Some MSDS's were not current and MSDS's from different manufacturers other than the manufacturer on the label were in use. Chemicals are stored in the building in accordance with applicable standards.

The building is equipped with appropriate emergency response equipment such as a chemical spill containment kit, eyewash, safety shower, and fire extinguisher. Fire extinguishers are bar-coded. The inspection date database is maintained in the fire station, Building 98. Inspection tags were present and current. There is an Emergency Evacuation Plan, and signs were posted in work areas.

There are no aboveground storage tanks in or around the building and no underground storage tanks are associated with this building. There are no sumps, separators, or catch basins, in or around the building.

Pipes were properly marked and signs were posted indicating the presence of asbestos.

There are no capacitors or transformers containing polychlorinated biphenyls (PCB's) located in the building (1995 Annual PCB Document Log).

9.5.4.5 Solid, Hazardous, and Radioactive Wastes

Solid wastes generated are primarily paper. There is paper, scrap metal, and aluminum can recycling to minimize solid waste. Solid wastes are removed by janitorial personnel to a site collection point, then shipped offsite to a local landfill by a contractor. Aluminum cans, glass and cardboard are removed by janitorial personnel to specific collection points, then sent offsite to be recycled by a contractor. White paper is collected, compacted and sent offsite for recycling by a contractor. Scrap metal is collected at a specific site, then sent offsite to be recycled by a contractor. Lead-acid batteries are recycled by a contractor. These service contracts are maintained by Waste Management. Classified paper is collected and taken to the Montgomery County South Incinerator by Security. There is no evidence that hazardous materials or wastes are mixed with solid waste streams.

Hazardous wastes are generated by metrology and associated procedures (*Characterization of Mound's Hazardous, Radioactive, and Mixed Waste*, 8-16-90). All hazardous wastes generated by the processes are stored in a Satellite Accumulation Area (SAA) located inside the building near to and within eye contact of the work area. The SAA procedures and appearance conform to Resource Conservation and Recovery Act (RCRA) requirements. Wastes are collected and transported by a representative of the EG&G Waste Management Group, and are stored in Building 72 for ultimate disposal. There is no onsite treatment of wastes. All are disposed of under a contract. Waste disposal manifests and Certificates of Disposal are maintained by the EG&G Waste Management Group. They conform to RCRA requirements.

9.5.4.6 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. Some of the processes were no longer active, therefore they were not reviewed for waste minimization or pollution prevention techniques. Programs for waste minimization in place are aluminum can, white paper, and scrap metal recycling.

9.5.5 Findings and Recommendations

Photographs were taken to document the environmental appraisal. They are included as Attachment 6 (Section 9.5.6.6). The environmental appraisal of Building DS 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.

DS-1 Evaluate User Center Agreement to see if chemicals need to be identified for emergency response information. It is not known what chemicals are used by lessees or contractors.

DS-2 Evaluate User Center Agreement to determine if environmental permitting responsibilities are covered. EG&G MAT's oversight responsibility for contractors or lessees who have the ability to emit chemicals to the environment must be legally determined.

DS-3 Evaluate User Center Agreement to determine if environmental permitting responsibilities are covered. This building is partially leased under the User Center Agreement. There is no monitoring of wastewater from these laboratories.

DS-4 Evaluate air sources that are not permitted and document *de minimis* determinations in accordance with OAC 3745-15-05.

DS-5 Notify RAPCA that several hoods identified on the application are no longer active.

DS-6 Review contents in storage cabinets for compatibility requirements.

DS-7 Opportunities for waste reduction in Building DS should be considered. Review work practices.

DS-8 Evaluate the chemical inventory and remove chemicals not in use or outdated as waste in accordance with 40 CFR 261-265, 268.

DS-9 Evaluate the air vent system for explosive contamination.

9.5.6.1 Environmental Appraisal Checklist

ENVIRONMENTAL APPRAISAL CHECKLIST

Building Name DS

Appraisers:

Name	Discipline
[signature]	
[signature]	
[signature]	

Building Manager: JEFFREY BOSTON

Process Manager: JEFFREY L. MATTHEWS

EDWARD D. BOGAN

Date: 2/19/96 & 2/20/96

ENVIRONMENTAL APPRAISAL CHECKLIST

Table of Contents

Checklist	Page
Clean Water Act	1
Clean Air Act	2
Hazardous Materials	4
Safe Drinking Water Act	7
RCRA Hazardous Waste	8
TSCA and NESHAP Requirements for Asbestos	13
TSCA—PCB	14
Low-level and Transuranic Waste	17
Waste Minimization/Pollution Prevention Activities	22

Environmental Appraisal Checklist

Building Name: DS

Appraisers: Terry Glander, John Puckett, Mary-Louis Hoagland, Mary Sizemore

Date: 2/19/96 & 2/20/96

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 _____ _____	PARTS OF FIT ARE DEDICATED TO SAFE SHUTDOWN, USER CENTERS. SOME OPERATIONS ARE STILL ACTIVE
	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	BOTH
	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 _____ _____ (Y) / N Y / (N)	DS 219 & 117A; STEAM CONDENSATE RETURN
	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	FLOOR DRAINS IN SOME ROOMS SEE PICTURE IT'S POSSIBLE

9.5-11

9.5-12

Environmental Appraisal Checklist

Building Name: DS

Appraisers: Terry Glander, John Puckett, Mary-Louis Hoagland, Mary Sizemore

Date: 2-19-96 & 2/20/96

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	SEE PAGE 35
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)	
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	N/A
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)	NO ACCIDENTAL

Environmental A[illegible]isal Checklist

Building Name: DS

Appraisers: SIZEMORE HOAGLAND GLANDER PUCKETT

Date: 2-19-96 & 2/20/96

CAA Checklist

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
A	firing chamber	227	22701	Y/(N)	(Y)/N					
	drying ovens	233		Y/(N)	Y/(N)	NA				
B	cleaning parts	226	226001	(Y)/N	(Y)/N	acetone				
C	cleaning	135	135 0001	(Y)/N	(Y)/N	isopropanol ethanol	½ gal.			
		131		(Y)/N	Y/(N)	NA				

Jeff Mathew

A - document B - permit application returned as "deminimis;" however, chemical(s) have changed - should

Source: document.

C - permit application returned as "de minimis."

9.5-13

Environmental Appraisal Checklist

Building Name: DS

Appraisers: SIZEMORE HOAGLAND GLANDER PUCKETT

Date: 2-19-96 & 2/20/96

9.5-14

CAA Checklist

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
cleaning	251	2150001	(Y)/N	Y/(N)	NA				
cleaning	251	2510002	(Y)/N	Y/(N)	NA				
shutdown	245	2450001	(Y)/N	Y/(N)	NA				
user centers	122 124 126		(Y)/N	Y/(N)	NA				
Development/ Standards	217	2170001	(Y)/N	Y/(N)	NA				

Source: _____

Environmental [redacted]isal Checklist

Building Name: DS

Appraisers: SIZELAND GLANDER HOAGLAND PUCKETT

Date: 2-19-96 & 2/20/96

CAA Checklist

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
hood	223	2230001	Y / (N)	Y / (N)	NA				
oven	223		Y / (N)	Y / (N)	NA				
firing chamber	218	~5' x 4'	Y / (N)	Y / (N)	NA				
firing chamber	218	218002 ~3' x 2'	Y / (N)	Y / (N)	NA				
oven	225		Y / (N)	Y / (N)	NA				

Source: _____

9.5-15

Building Name: D5

Appraisers: SIZEMORE HOAGLAND / GLANDER RUCKETT

Date: 2-19-96

9.5-16

CAA Checklist

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
Develop./ Stds.	122	2220001 2220002	(Y)/N	Y/(N)	NA				
prime oven sonic cleaner chem. station	132 132 132	110184 110290 110183	(Y)/N	Y/(N)	NA				
chem. station chem. station spin coating	132 132 132	110186 112189 110320	(Y)/N	Y/(N)	NA				
cleaning	109B	109B0001	(Y)/N	(Y)/N	acetone ethanol Drakeol			312	0.02 0.01
Develop./ Stds.	125B	125B0001 2 3 4 5	(Y)/N	Y/(N)	NA				

* Document as "de minimis."

Source: _____

Environmental A[illegible]isal Checklist

Building Name: DS

Appraisers: PUCKETT SIZEMORE HOAGLAND GLANDER

Date: 2-19-96 & 2/20/96

CAA Checklist

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
Develop./ Stds.	118	1180001 2	(Y)/N	Y/(N)	NA				
ovens	125	1250001 2 3	Y/(N)	Y/(N)	NA				
	DS 209A	190001	Y/(N)	Y/(N)	N/A				
			Y/N	Y/N					
			Y/N	Y/N					

Source: _____

9.5-17

Environmental Appraisal Checklist

Building Name: DS

Appraisers: GLANDER PUCKETT SIZEMORE HOAGLAND

Date: 2-19-96 & 2/19/96

9.5-18

CAA Checklist

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 lb/yr	Quantity to Waste Management	Hours/Yr. Operation	Air Emissions lb/h
	oven	207		(Y)/N	Y/(N)	NA				
	hood	207		(Y)/N	Y/(N)	NA				
*	grinder	201	2010001	Y/(N)	(Y)/N	metal parts				metal – negligible
*	cleaning	215	2150001	Y/(N)	(Y)/N	isopropanol ethanol acetone argon	1.6 1.6 3.3 780 cf	~0	~50	0.06 VOC 0.07 acetone ~16 cf/hr
		214	2140001	Y/(N)	Y/(N)					

Source: _____

* document as de minimis

E

Environmental Appraisal Checklist

Building Name: DS

Appraisers: Terry Glander, John Puckett, Mary-Louis Hoagland, Mary Sizemore

Date: 2/19-20/96

CAA Checklist

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: _____

9.5-19

Environmental Appraisal Checklist

Building Name: DS

Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore

Date: 2/19-20/96

9.5-20

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)	MAJORITY OF CONTAINERS IN AREA ARE ID'ED THE REMAINDER CAN BE ID'ED WITHIN 72 HRS.
29 CFR 1910.1200(g)	MSDS shall be available to the employees in close proximity to the work area.	Y / (N)	NOT ALL JANITORIAL CLOSETS HAD MSDSs AVAILABLE
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)	W SIDE OF FACILITY IS BEING SHUTDOWN & IS EXTREMELY CLUTTERED
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)	MULTIPLE LABS HAD AN INCOMPATIBILITY PROBLEM THIS WAS REMEDIED IN 72HRS.
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

Environmental Appraisal Checklist

Building Name: DS

Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore

Date: 2/19-20/96

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	N/A
29 CFR 1910.151	Eyewashes/showers shall be provided within the work area. Ensure unit is operational.	(Y) / N	
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)	VARIOUS LABS NOT IN COMPLIANCE PROCESS MGR CORRECTING
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)	EMPTY VS FULL CONTAINERS NOT ALWAYS SEGREGATED
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	
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	

9.5-21

Environmental Appraisal Checklist

Building Name: DS

Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore

Date: 2/19-20/96

9.5-22

HM Checklist

Regulatory Guideline	Question	Response	Comments
	Is there a process area?	(Y)/N	
	Does it have proper containment?	(Y)/N	
	Is there a liquid bulk transfer area?	(Y)/N	FERRIC CHLORIDE
	Is there proper containment?	Y/(N)	NO SECONDARY CONTAINMENT
	Is there an above ground storage tank? If so, complete Table B.	Y (N)	

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: DS

Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore

Date: 2/19-20/96

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	
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)	SOME WERE AND SOME WERE NOT; BROUGHT TO ATTENTION OF PROCESS MGR.
	Does the facility contain any water coolers or fountains that are not lead free? Complete Table C.	Y / N	SEE TABLE

TABLE C—Water Fountain Survey

Building	Location	Model #	Comments / Date of Analysis for Lead
DS	NEXT TO ROOM 254	?? C14G-B2	WESTINGHOUSE
DS	CORRIDOR 2 ATTACHMENT'S ROOM	UNKNOWN	OASIS

Source: _____

9.5-23

Environmental Appraisal Checklist

Building Name: DS

Appraisers: Terry Glander, John Puckett, Mary-Louis Hoagland, Mary Sizemore

Date: 2/19-20/96

9.5-24

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	BUT NOT ON ALL CONTAINERS SEVERAL CONTAINERS (SMALL WILL NEED CHARACTERIZATION)
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	

Environmental Appraisal Checklist

Building Name: DS Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore Date: 2/19-20/96

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	DS 258, 243, DS 127A are examples.
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	
	Are containers moved within 3 days of being filled?	(Y) / N	

Environmental Appraisal Checklist

Building Name: DS

Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore

Date: 2/19-20/96

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	
	If no go to next section.		
	If yes, note.		
	For Building 23, Building 72 & Burn Area use special checklist.		

Environmental Appraisal Checklist

Building Name: DS

Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore

Date: 2/19-20/96

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	
	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)	
	Is there a sump?	Y / (N)	
	Is it dry?	Y / N	N/A
	Does the tank or equipment have secondary containment?	Y / (N)	
	Does the tank or equipment have leak detection device(s)?	Y / N	N/A
	Has spill control prevention been enacted?	Y / N	N/A
	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	POSSIBLY THIS NEEDS FURTHER INVESTIGATION DUE TO SAFE SHUTDOWN MODE AND USER AGREEME.
	If the answer was no, then proceed with the following:		
	Has the tank or piece of equipment had an integrity assessment?	Y / N	
	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	
	Is there a closure plan?	Y / N	
	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)	

9.5-27

Environmental Appraisal Checklist

Building Name: DS

Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore

Date: 2/19-20/96

9.5-28

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	AT offsite permitted facility
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	AT offsite permited facility
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: DS

Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore

Date: 2/19-20/96

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	INSPECTION AND ANALYSIS
	Is there any evidence of friable asbestos?	Y / (N)	
	Is the asbestos removal properly managed? (See questions listed below)	Y / N N/A	If there is no asbestos removal, do not complete the following section.
NESHAPS FOR ASBESTOS FOR ANY ONGOING ASBESTOS REMOVAL:			
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	

9.5-29

Environmental Appraisal Checklist

Building Name: DS Appraisers: Terry Glander, John Puckett, Mary-Louis Hoagland, Mary Sizemore Date: 2/19-20/96

9.5-30

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	
	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	
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	
	If yes, are auditable records maintained.	Y / N	
40 CFR.30 (a) (1) (lx)	Are any PCB transformers in use, or stored for possible reuse, that contain PCB's at concentrations of 500 ppm or greater?	Y / N	
	Are they visually inspected quarterly? If yes, are auditable records maintained?	Y / N	

Building Name: DS

Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore

Date: 2/19-20/96

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	
	Are labeled PCB articles and containers stored so that the labels can be referenced?	Y / N	
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	
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	
40 CFR 761.62 (b) (1) (iv)	Are storage are floors curbed and constructed of continuous smooth and impervious materials?	Y / N	
40 CFR 761.62 (b) (1) (i)	Are the curbs at least 6 inches high?	Y / N	
40 CFR 761.62 (b) (1) (iii)	No drains are allowed in storage areas. Are there drains in the storage areas?	Y / N	

9.5-31

Building Name: DS

Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore

Date: 2/19-20/96

9.5-32

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	
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	
40 CFR 761.65 (c) (5)	Have all leaking PCB articles and containers been transferred to non-leaking containers?	Y / N	
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	

GENERAL COMMENTS:

Building Name: DS

Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore

Date: 2/19-20/96

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	
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	

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Environmental Appraisal Checklist

Building Name: DS

Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore

Date: 2/19-20/96

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	
	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	

Building Name: DS

Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore

Date: 2/19-20/96

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	
	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: DS Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore Date: 2/19-20/96

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	
	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: DS Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore Date: 2/19-20/96

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	
	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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Environmental Appraisal Checklist

Building Name: DS

Appraisers: Terry Glander, John Puckett, Mary-Louis Hoagland, Mary Sizemore

Date: 2/19-20/96

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Waste Minimization/Pollution Prevention Activities Screening Checklist

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

Waste Minimiaztion/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	SAFE SHUTDOWN NEEDS TO EVALUATE WASTE MIN OPPORTUNITIES IN AREAS OF LEAD RECYCLING, BRASS, ETC. DUE TO THE USER/AGREEMENTS IT CAN NOT BE FULLY DETERMINED WHAT CHEMICALS ARE
	Are there solvent wastes?	(Y) / N	LEFTOVER ACETONE ONLY
	Is vehicle maintenance performed?	Y / N	N/A
	Are oils used ?	(Y) / N	VACUUM PUMPOILS
	Are these corrosive wastes?	(Y) / N	FERRIC CHLORIDE
	Are there sludges?	Y / (N)	
	Are there halogenated organic (nonsolvent) wastes?	Y / (N)	
	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	N/A
	Ion exchange process?	Y / N	
	Lead in gasoline lowered to reduce tank sludge toxicity?	Y / N	
	Storage tank agitators installed?	Y / N	
	Corrosive resistant materials used?	Y / N	
	Prevention of crude oil oxidation ?	Y / N	
	Drying?	Y / N	

Environmental Appraisal Checklist

Building Name: DS

Appraisers: Terry Glander, John Puckett, Mary-Louis Hoagland, Mary Sizemore

Date: 2/19-20/96

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)	
	Is crystallization used to remove corrosives from solution by cooling?	Y / (N)	
	Is the process of evaporation of liquid wastes by heating used to leave behind a more concentrated solution?	Y / (N)	
CYANIDE AND REACTIVE WASTES			
	Has non-cyanide or low concentration of cyanide process replaced zinc cyanide bath ?	Y / (N)	
	Are any of these processes used to recycle cyanide wastes?	Y / (N)	
	Refrigeration/crystallization?	Y / (N)	
	Evaporation?	Y / (N)	
	Ion exchange?	Y / (N)	
	Membrane separation which includes reverse osmosis or electrodialysis?	Y / (N)	
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
	Are spills reduced by locating sinks or dunk buckets near auto service bays?	Y / N	N/A

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Environmental Appraisal Checklist

Building Name: DS

Appraisers: Terry Glander, Mary-Louis Hongland, John Puckett, Mary Sizemore

Date: 2/19-20/96

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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)	
	Are solid wastes generated from the collection of baghouse dust?	Y / (N)	
	Wet instead of dry grinding used?	Y / (N)	
	The output spray dried?	Y / (N)	
	Has baghouse emptying and recycling of baghouse fines been scheduled?	Y / (N)	
	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)	
	Evaporation of waste rinsewater?	Y / (N)	
	Reverse osmosis?	Y / (N)	
	Ion exchange?	Y / (N)	
	Electrolysis?	Y / (N)	
	Agglomeration?	Y / (N)	
CORROSIVE WASTES			
	Are acidic or basic cleaning solutions used as treatment for pH adjustment chemicals?	Y / (N)	CSTAR CITY IS USING THE FERRIC CHLORIDE)

Building Name: D.S Appraisers: Terry Glander, John Puckett, Mary-Louis Hoagland, Mary Sizemore Date: 2/19-20/96

Waste Minimization/Pollution Prevention Activities Checklist

Regulatory Guideline	Question	Response	Comments
	Are these treatment techniques used to promote separation of oil/water wastes?		N/A
	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:		NEEDS FURTHER EVALUATION DO TO INFLUX OF CLOSURES. USER AGREEMENT NEEDS RESOLUTION
	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	
	Are waste solvents free from water and garbage?	Y / N	
	Are recycled solvent containers labeled as such?	Y / N	
	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	
	Is a method used to minimize the use of new materials such as a countercurrent process?	Y / N	

Environmental Appraisal Checklist

Building Name: DS

Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore

Date: 2/19-20/96

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?		√ VACUUM PUMP OIL, WD40
	Hydraulic oil?	Y / N	NEEDS VERIFIED
	Transformer oil?	Y / N	" "
	Metal working fluids?	(Y) / N	VACUUM PUMP OIL WD40
	Spent lubricating oils?	(Y) / N	VACUUM PUMP OIL.
	Can the process be modified or changed to use water-based fluids?	Y / (N)	SAFE SHUTDOWN
	Are these good housekeeping and operation practices used to minimize oil waste production?		N/A
	Use oils not contaminated with other liquids?	Y / N	
	Oil spills prevented?	Y / N	
	Drip pans installed?	Y / N	
	Oil soaked rags laundered?	Y / N	
	Rags and absorbants used to their limit?	Y / N	

Environmental Appraisal Checklist

Building Name: DS Appraisers: Terry Glander, John Puckett, Mary-Louis Hoagland, Mary Sizemore Date: 2/19-20/96

Waste Minimization/Pollution Prevention Activities Checklist

Regulatory Guideline	Question	Response	Comments	
	If there is a recycling program, what technique is used?	Y / N		
	Distillation?	Y / N		
	Solids removal?	Y / N		
	Dispersion breaking?	Y / N		
	Dissolved and emulsified organics recovery?	Y / N		
	Are any of these housekeeping procedures used to minimize the production of solvent wastes?			
	Separators cleaned and checked?	Y / N		
	Parts not allowed to enter the degreaser while wet?	Y / N		
	Sludge from the bottom of the tank not allowed to accumulate?	Y / N		
	Lids kept on tanks?	Y / N		
	Freeboard space on tanks increased?	Y / N		
	Are better operating practices used to reduce waste?	Y / N		
	How long is solvent waste stored and where?	_____ _____	↓	

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9.5.6.2 Building Manager's Questionnaire

Building Manager's Questionnaire

Building Name: DS Building Manager: J.L. Boston Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

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

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

PPE IN VARIOUS LOCATIONS

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

4. Provide a physical description of the building.

Building DS is constructed of reinforced concrete and concrete blocks. The roof is BUM (asphalt). Total area is 47,800 ft². HVAC systems are central steam and chilled water. Asbestos has been found in the building. Building is not known to be contaminated with any radioactive ~~or energetic materials~~, although both types have been handled in the building. DS west to be sanitized to 3X level by 9/3.

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 metrology studies ~~and energetic materials production and development~~. and DOE User Centers or lease to MMCIC and ~~Shut~~ SAFE Shutdown Activities

Source: Mound Buildings, 5-9-95

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

Source: Mound Buildings, 5-9-95

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Building Name: DS Building Manager: J.L. Boston Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

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

Process(es) Housed: Tape processing, slapper detonator development, process technology development, welding technology, off schedule production, energetic component development, low energy component development, x-ray processing, final acceptance, IMPAC, material handling, metrology

How Wastes Are Generated:

Tape Processing: Photoresist is put on a 250-ft roll of copper tape. A mask then covers part of the tape. The tape is exposed to ultraviolet light which hardens the unmasked photoresist. A dilute solution of Na_2CO_3 is used to remove the unhardened photoresist. This solution is flushed down the drain. The tape is passed through a ferric chloride solution to etch it. A dilute solution of KOH is then used to remove the hardened photoresist. The KOH solution is also washed down the drain.

Ferric chloride is handled as follows: A 55-gal drum of fresh solution is brought into the room where the processing machine is used. Seventeen gallons of ferric chloride is pumped into the machine. After 750 ft of tape are processed, the ferric chloride solution is pumped out of the machine and into a waste drum. The 17-gal tank in the machine is then filled with water, and the water is pumped into the waste drum. The tank is filled with water once again, and this water is flushed down the drain.

The tape then moves to the nickel plating room. Tape is put into the plater, which is connected to tanks containing three different materials: nickel sulfamate/water/boric acid solution, water, and sulfuric acid/water solution. First the delivery line is flushed with water, and that water goes down the drain. Sulfuric acid is used to clean the tape and is returned to its container. The delivery line is again flushed with water which goes in the drain. Nickel sulfamate solution is delivered to the tape, and some nickel is plated out. The solution is returned to its container. The line is flushed with water which is collected in a 15-gal waste drum.

Wastes from the plating operation are spent nickel sulfamate solution and water, dirty sulfuric acid (tank of acid is changed two or three times a year, depending on volume of production), and nickel cleanup waste, which includes any papers used to clean up spills.

Next, a bridge is bonded to the tape. HCl and ethyl alcohol are used to clean these two parts. Both cleaning agents are used in small quantities and are flushed down the drain.

Throughout the process, alcohol may be used to wipe the tape, but the alcohol evaporates, and there is no liquid waste to dispose of.

Current plans call for moving the production portion of tape processing to the basement of Building COS. The development portion will remain in DS. After the move is completed, ferric chloride may be

replaced with cupric chloride which can be regenerated with HCl. Cupric chloride can be reused. Some excess cupric chloride will be generated and will need to be disposed of.

Slapper Detonator Development: This work occasionally requires use of the tape processing equipment described above. Additional potentially hazardous materials are 50% HCl solution which is collected in waste cans for Waste Management to pick up; ethyl alcohol which is used for cleaning and, if used in significant quantities, is put in waste cans; nickel sulfamate and gold cyanide solutions which are used for plating nickel and gold on the tape and are collected in waste cans for disposal; acetone which is used in small quantities for cleaning and quickly evaporates; and small quantities of explosives (PETN, HMX, LX-16) whose wastes are put in "Explosive Waste" containers.

Process Technology Development: This group works on film fabrication and surface modification using both physical and chemical means at a variety of temperatures and pressures. They use small amounts of various chemicals. There is no significant waste stream.

Welding Technology: Acetone and 200-proof ethyl alcohol are used for wiping parts clean. The solvents evaporate. There is no hazardous waste stream.

Off Schedule Production: In this operation, orders for small numbers of parts are filled. The wastes include small amounts of explosive wastes which are sent to the burn area on site for destruction, hardened epoxies which go in a trash can, and solvents used for cleaning parts in an ultrasonic bath. The solvents used are Freon TF, tricholorethane, and ethyl alcohol. They are piped into the room, and spent solvents are poured into a sink which drains to a waste drum in the DS solvent shed.

Energetic Component Development: Secondary explosives are used in this work in small quantities. Explosive wastes in the form of paper, cloth, etc., contaminated with traces of explosives are put into lined containers which are emptied when they are about half full or contain about a gram of explosive. Wastes removed from the containers are packaged, labeled, and sent to the on-site burn area for destruction. Pieces of explosive which are to be discarded are packaged, labeled, and stored in a service bunker until they can be taken to the burn area. Solvents used in these labs are generally in squeeze bottles. They evaporate quickly and there is no liquid waste. Solvents include isopropyl alcohol, ethyl alcohol, acetone, toulene, Freon, and trichloroethane. Occasionally, Freon TF is used in a bath for high voltage testing, and ethylene glycol is used to make a black ink required to locate deviations from the desired surface contour for some parts. Wastes from these operations are put in cans for Waste Management to pick up.

Low Energy Component Development: Energetic components are fabricated using pyrotechnics and primary, secondary, and special explosives. Explosive wastes are put in marked containers and eventually sent to be burned on site. Ethanol and acetone are occasionally used for cleaning. The solvent is put on a Kimwipe which is then used to clean

Building Name: DS Building Manager: J.L. Boston Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

the part. The solvent evaporates and the Kimwipe is put in the trash or explosive waste. No liquid hazardous wastes are generated.

X-Ray Film Processing: The x-ray film development in Building DS is done with a Hope model processor which uses Kodak chemicals (Kodak Industrex Developer and Replenisher, Kodak Industrex Fixer and Replenisher, Kodak Liquid Developer System Cleaner, and Kodak Fixer Wash System Cleaner). These chemicals are collected in a waste can for pickup by Waste Management. In February (1990) a new Fuji processor replaced the Hope model. Different chemicals are to be used, and Waste Management will help plan for waste disposal.

Metrology may generate 1 gal of solvent waste, primarily acetone, each year.

Final Acceptance, IMPAC, and Material Handling generate no hazardous wastes.

Contact: DON HOMAN
Phone #: 3116

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

Building Manager's Questionnaire

Building Name: DS Building Manager: J.L. Boston 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
SAFE SHUTDOWN ACTIVITIES

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
USU Center	122	DS-122	Y / N					
USU Center	124	DS-124	Y / N					
Develop. Stds	125	125001	Y	Acetone ethanol alumina	.005 .002 .001		1.04 .416 .208	
Develop. Stds	125	1250002	Y	Isopropanol lead tin	.003 .001 0		6.24 .208 0	
Develop. Stds	125B	125B 0004	Y	Freon TF Ethanol Isopropanol Trichloroethane	.35 .0068 .051 .018		728 14.144 106.08 37.44	
Develop. Stds	125B	125B00005	Y	Freon TF Ethanol Trichloxoethane	.009 .002 .0048		1.404 .312 .7488	
Develop. Stds	127	1270001	Y	Ethanol	.248		6.448	
Develop. Stds	118		Y	Epichlorahydrin	.088		.352	
Develop. Stds	207	2070001	Y	Epichlorohydrin Acetone Isopropanol Diethanolamine	.0012 .016 .0756 .0012		.0624 .832 3.9312 .0624	
Develop. Stds	207	Oven	Y	Epichlorohydrin diethanolamine	.0023 .0003		3.68 .48	
Develop. Stds	226	22260001	Y	Epichlorohydrin	.0035		.014	
Develop. Stds	226	226002	Y	Epichlorohydrin misc HAP	.0012 .0066		.0624 .3432	
Develop. Stds	133	1330001	Y	Ethanol Freon Stoddard Solvent	.04 .1 .01		8.32 20.8 2.08	
Develop. Stds	135	1350001	Y	Isopropanol	.786		1.572	
Safe Shutdown	131		N					
Develop. Stds	251	DS2510001	Y	Isopropanol	.003		1.872	
Develop. Stds	251	DS2510002	Y	Isopropanol desolve It	.141 .0013		29.328 .2704	
Develop. Stds	245	DS2450001	Y	Acetone Isopropanol Ethanol mednanol Bioact EC-7	.08 .08 .08 .08 .01		3.84 3.84 3.84 3.84 .48	
User Center	124							
User Center	126A							
User Center	122/6							

Building Name: DS Building Manager: J.L. Boston Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

Process Source	Room Number	Hood Number	Active	Chemicals Used	Quantity Used	Quantity to Waste Management	Lbs./Yr. Operation	Al. Emissions
Develop. Stds	217	DS217 0001	Y	Epichlorohydrine petrol distillates Ethyl Orthosilicate	.0091 .0003 .0001		.2366 .0078 .0026	
Develop. Stds	222	DS222 0001	Y	Epichlorohydrin	.0001		.0208	
Develop. Stds	222	DS222 0002	Y	Epichlorohydrin	.0001		.0208	
Process Development	110	110183	Y	Ethanol Ammonium hydoxide dydrogen peroxide Acetone Freon 22	.005 .004 .0015 .0002 .0001		11.52 9.216 3.456 .4608 .2304	
Process Development	110	110184	Y	hexamethyl disilizane	.0001		.0032	
Process Development	110	110186	Y	Ethanol Ammonium Hydroxide Hydrogen Peroxide Acetone Freon 22	.005 .004 .0015 .0002 .0001		11.52 9.216 3.456 .4608 .2304	
Process Development	110	110290	Y	Ammonium hydroxide hydrogen peroxide	.0001 .0001		.8736 .8736	
Process Development	110	110320	Y	photoresist photoresist thinner photoresist developer acetonexoluene/ PMPS xylene/PMPS	.0008 .0009 .001 .0008 .001 .001		.32 .36 .4 .32 .4 .4	
Process Development	112	112189	Y	Ethanol Ammonium hydroxide hydrogen peroxide acetone Freon 22	.005 .004 .0015 .0002 .0001		11.52 9.216 3.456 .4608 .2304	
Process Development	109B	DS109B 0001	Y	Acetone Ethanol	.02 .012		6.24 3.744	
Develop. Stds	125B	125B 0001	Y	Epichlorohydrin	.012		.624	

Source: Mound Air Emissions Database 11/30/95

Building Manager's Questionnaire

Building Name: DS Building Manager: J.L. Boston Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

11. Describe air pollution control equipment used to reduce emissions for each source.

Process Source	Emissions	Control Equipment	Functioning
Fumehood Room 122		demister and rough filter	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?

Process Source	Permit	Log	Permit Conditions & Frequency of Monitoring
Fumehood Room 122		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?

15. Does the building discharge to the sanitary sewer? Yes No
Where?

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

Building Manager's Questionnaire

Building Name: DS Building Manager: J.L. Boston 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. SEE ATTACHED LIST

Chemical Name	State	Amount (MAX)

Source: Chemical Inventory 1994

BABY POWDER DISINFECTANT	VALLEY JANITOR SUPPLY	14	OZ	14	OZ	0	OZ	DS	101	L	F	1	[illegible]
CRT CLEANING [redacted]	INMAC	7	[redacted]	8	OZ	1	OZ	DS	101	L	N	1	[redacted] BORNEMANN
DUST MOP TREATMENT	STANDARD SANITATION SYSTEMS	17	OZ	18	OZ	1	OZ	DS	101	L	F	1	BORNEMANN
INK #620 BLACK	AERO BRANDS	7	OZ	8	OZ	1	OZ	DS	101	L	N	1	4 BORNEMANN
LIQUID PAPER	GILLETTE	3.6	OZ	3.6	OZ	1	OZ	DS	101	L	N	1	4 BORNEMANN
MARKER BOARD CLEANER	WEBER COSTELLO	32	OZ	32	OZ	8	OZ	DS	101	L	N	1	4 BORNEMANN
POLISH LEMON FURNITURE	VALLEY JANITOR SUPPLY	34	OZ	5	OZ	17	OZ	DS	101	L	F	1	4 BORNEMANN
2-TON EPOXY	DEVCON CORP	28	G	28	G	4	G	DS	103	L	N	1	4 BORNEMANN
3 IN 1 OIL	BOYLE MEDWAY INC	48	OZ	48	OZ	9	OZ	DS	103	L	F	1	4 BORNEMANN
3-36 MULTI SPRAY	CRC CHEMICALS	16	OZ	16	OZ	0	OZ	DS	103	L	F	1	4 BORNEMANN
ACETONE	FISHER	10	ML	300	ML	290	ML	DS	103	L	M	1	4 BORNEMANN
ANTI-STATIC SOLUTION	DEVCON	1	GA	1	GA	0.25	GA	DS	103	L	N	1	4 BORNEMANN
BENZOLTRIAZOLE	FISHER	8	OZ	8	OZ	1	OZ	DS	103	L	N	1	4 BORNEMANN
CASTING POWDER	FACSIMILE	2	LB	3	LB	1	LB	DS	103	S	N	1	4 BORNEMANN
CASTONE	RANSOM & RANDOLPH CO	1.5	LB	2	LB	0.5	LB	DS	103	S	F	1	4 BORNEMANN
CURING LIQUID	FACSIMILE	3	PT	3	PT	0.5	PT	DS	103	L	F	1	4 BORNEMANN
DISINFECTANT/DEODORANT	BETCO CORP	14	OZ	14	OZ	1	OZ	DS	103	L	F	1	4 BORNEMANN
DUSTIN SHINE	MISCO INTERNATIONAL CHEMICALS INC	19	OZ	19	OZ	2	OZ	DS	103	L	F	1	4 BORNEMANN
EEL SKID	WILSON INSTRUMENTS	1.5	PT	1.5	PT	0.25	PT	DS	103	L	F	1	4 BORNEMANN
ETHYL ALCOHOL	FISHER	2	GA	2	GA	1	GA	DS	103	L	F	1	4 BORNEMANN
FORMULA 101	CROWN	12	QT	12	QT	2	QT	DS	103	L	F	1	4 BORNEMANN
GAGE BLOCK CLEANER	DO ALL	6	OZ	12	OZ	6	OZ	DS	103	L	F	1	4 BORNEMANN
GAGE BLOCK PRESERVATIVE	DO ALL	102	OZ	132	OZ	30	OZ	DS	103	L	F	1	4 BORNEMANN
HEAD CLEANER	HEWLETT PACKARD	6	OZ	8	OZ	2	OZ	DS	103	L	M	1	4 BORNEMANN
HEADSTART CLEANER	BUTCHER POLISH CO	8	OZ	8	OZ	2	OZ	DS	103	L	N	1	4 BORNEMANN
HOUSEHOLD OIL	GULF OIL CORP	4	OZ	4	OZ	2	OZ	DS	103	L	F	1	4 BORNEMANN
INTENSIVE CARE LOTION	CHEESEBROUGH PONDS	10	OZ	10	OZ	5	OZ	DS	103	L	N	1	4 BORNEMANN
KLEEN-SURF	DO ALL	45	OZ	45	OZ	10	OZ	DS	103	L	F	1	4 BORNEMANN
LENS CLEANER	FOGPRUF	8	OZ	8	OZ	3	OZ	DS	103	L	N	1	4 BORNEMANN
LIQUID PAPER	GILLETTE	7.2	OZ	7.2	OZ	1.2	OZ	DS	103	L	N	1	4 BORNEMANN
LIQUID WRENCH	RADIATOR SPECIALTY CO	4	OZ	4	OZ	2	OZ	DS	103	L	F	1	4 BORNEMANN
LUBRIPLATE	FISKE BROTHERS REF.	14	OZ	14	OZ	2	OZ	DS	103	L	F	1	4 BORNEMANN
M-1 RUST PREVENTATIVE	STARRETT	3	GA	3	GA	0	GA	DS	103	L	F	1	4 BORNEMANN
METAL LUSTER	HOLCOMB	384	OZ	384	OZ	32	OZ	DS	103	L	N	1	4 BORNEMANN
METAL MARKER	NISSEN	6	OZ	6	OZ	0	OZ	DS	103	L	R	1	4 BORNEMANN
MICRO CLEANER	INTERNATIONAL PRODUCTS INC	8	OZ	8	OZ	1	OZ	DS	103	L	N	1	4 BORNEMANN
MOBIL OIL	MOBIL (MOORE)	1	GA	1	GA	0.5	GA	DS	103	L	F	1	4 BORNEMANN
MULTI-PURPOSE GREASE	FISKE BROTHERS REFINING	29	OZ	29	OZ	2	OZ	DS	103	L	F	1	4 BORNEMANN
PAINT THINNER	ALLPRO CORP	1	GA	1	GA	0.5	GA	DS	103	L	N	1	4 BORNEMANN
PARTING AGENT	IMS COMPANY	12	OZ	12	OZ	0	OZ	DS	103	L	F	1	4 BORNEMANN
SEPARATOR	FLEXBAR MACHINE CORP	5	OZ	5	OZ	0.5	OZ	DS	103	L	M	1	4 BORNEMANN
SHINE-UP	JOHNSON WAX	15	OZ	15	OZ	8	OZ	DS	103	L	F	1	4 BORNEMANN
SOLDER, RESIN CORE	J.W. HARRIS CO	1	LB	1	LB	0	LB	DS	103	S	R	1	4 BORNEMANN
SPRA-LUBE SILICONE	GC ELECTRONICS	5	OZ	8	OZ	3	OZ	DS	103	L	F	1	4 BORNEMANN
STAINLESS STEEL CLEANER/POLISH	3M	250	OZ	279	OZ	20	OZ	DS	103	L	F	1	4 BORNEMANN

CHEMICAL	MANUFACT	U	Unit	MAX	Unit	AVG	Unit	BD	RM	STATE	STOR	F	TMP	SUPER
STARRETT PLA[illegible]LEANER	SURRY CHEMICALS	5	GA	5	GA	1	GA	DS	103	L	N	1	4	BORNEMAI
STARRETT TOOL & INSTRUMENT OIL	WILLIAM F. NYE, INC	9	OZ	9	OZ	1	OZ	DS	103	L	F	1	4	BORNEMAI
STATIC NULL	GC ELECTRONICS	8	OZ	14	OZ	6	OZ	DS	103	L	F	1	4	BORNEMAI
STODDARD SOLVENT	SOHIO	2	GA	2	GA	1	GA	DS	103	L	F	1	4	BORNEMA
SUPER-COTE	J&L METROLOGY	60	OZ	60	OZ	4	OZ	DS	103	L	N	1	4	BORNEMA
VELOCITE #6	MOBIL (mOORE)	5	QT	5	QT	0	QT	DS	103	L	F	1	4	BORNEMA
VINYL COATING	CROWN	104	OZ	120	OZ	15	OZ	DS	103	L	F	1	4	BORNEMA
WAYLUBE 80	COLT LTD. ELOX DIV.	1	QT	1	QT	0.25	QT	DS	103	L	F	1	4	BORNEMA
WD-40	WD-40 CO	2.5	QT	2.5	QT	0.5	QT	DS	103	L	F	1	4	BORNEMA
INK STAMP PAD	SANFORD	2	OZ	2	OZ	1	OZ	DS	108A	L	M	1	4	BORNEMA
3 IN 1 OIL	BOYLE MEDWAY	3	OZ	3	OZ	2	OZ	DS	109	L	F	1	4	BORNEMA
ACETONE	FISHER	2	PT	2	PT	4	PT	DS	109	L	F	1	4	BORNEMA
ALCOHOL	MIDWEST GRAIN	4	PT	4	PT	4	PT	DS	109	L	F	1	4	BORNEMA
GLASS CLEANER	CARROL	1	GA	1	GA	0.75	GA	DS	109	L	N	1	4	BORNEMA
JEWELERS ROUGE	DIVINE BROTHERS CO	3.75	OZ	4	OZ	0.25	OZ	DS	109	S	R	1	4	BORNEMA
KRYLON MATTE	BORDEN	3	OZ	3	OZ	2	OZ	DS	109	L	F	1	4	BORNEMA
RUBBER CEMENT	DENNISON MANUFACTURING CO	4	OZ	8	OZ	4	OZ	DS	109	L	N	1	4	BORNEMA
WD-40	WD-40 CO	24	OZ	24	OZ	6	OZ	DS	109	L	F	1	4	BORNEMA
3 IN 1 OIL	BOYLE MEDWAY	3	OZ	3	OZ	2	OZ	DS	110	L	F	1	4	BORNEMA
CIRCUIT COOLER	SPC TECHNOLOGY	96	OZ	96	OZ	10	OZ	DS	110	L	F	1	4	BORNEMA
CRT CLEANING SOLUTION	INMAC	4	OZ	4	OZ	2	OZ	DS	110	L	N	1	4	BORNEMA
DARKEOL RQ	PENRECO	30	GA	30	GA	1	GA	DS	110	L	C	1	4	BORNEMA
DRY LUBRICANT	MILLER STEPHENSON	16	OZ	16	OZ	0	OZ	DS	110	L	F	1	4	BORNEMA
ETHYL ALCOHOL	MIDWEST GRAIN	8	OZ	8	OZ	4	OZ	DS	110	L	N	1	4	BORNEMA
FREON TF	CHEMTRONICS INC	64	OZ	64	OZ	8	OZ	DS	110	L	F	1	4	BORNEMA
RTV 102 SILICONE	GENERAL ELECTRIC	47	OZ	47	OZ	3	OZ	DS	110	L	R	1	4	BORNEMA
SOLDER, MULTI-CORE SN60	MULTICORE SOLDERS LTD	2	LB	2	LB	0.5	LB	DS	110	S	R	1	4	BORNEMA
WD-40	WD-40 CO	12	OZ	12	OZ	2	OZ	DS	110	L	F	1	4	BORNEMA
LIQUID PAPER	GILLETTE	2.4	OZ	2.4	OZ	1	OZ	DS	112	L	N	1	4	BORNEMA
FOGPRUF	MINE SAFETY APPLIANCES CO.	2	OZ	4	OZ	1	OZ	DS	115	L	N	1	4	BORNEMA
LIQUID PAPER	GILLETTE	4.8	OZ	4.8	OZ	2	OZ	DS	115	L	N	1	4	BORNEMA
ALCOHOL	MIDWEST GRAIN	8	OZ	8	OZ	2	OZ	DS	119	L	N	1	4	BORNEMA
INTENSIVE CARE	PONDS	10	OZ	10	OZ	1	OZ	DS	119	L	N	1	4	BORNEMA
MOBILE DTE	MOBIL	10	GA	10	GA	0	GA	DS	120	L	N	1	4	HARDEN
BONDER, SUPER LOCTITE 416	LOCTITE CORP.	1	OZ	1	OZ	0	OZ	DS	121	L	N	1	4	HARDEN
CLEANER,MARKER BOARD	WEBER COSTELO	16	OZ	16	OZ	0	OZ	DS	121	L	N	1	4	HARDEN
CORRECTION FLUID,LIQUID PAPER		0.6	OZ	0.6	OZ	0	OZ	DS	121	L	N	1	4	HARDEN
DUSTER	SPI SUPPLIES	280	OZ	280	OZ	0	OZ	DS	121	G	L	2	4	HARDEN
EPOXY,EXTRA FAST SETTING	COLE PARMER	3.5	OZ	3.5	OZ	0	OZ	DS	121	L	R	1	4	HARDEN
INK, QUICK DRY STAMP PAD,RED	SANFORD	5	OZ	5	OZ	0	OZ	DS	121	L	F	1	4	HARDEN
INK,INDIA,LATEX BASE DWG INK FOR	KOH-I-NOOR	5.25	OZ	5.25	OZ	0	OZ	DS	121	L	M	1	4	HARDEN
INK,STAMP PAD	SANFORD	4	OZ	4	OZ	0	OZ	DS	121	L	F	1	4	HARDEN
LOCTITE	LOCTITE CORP.	14.4	OZ	14.5	OZ	0	OZ	DS	121	L	N	1	4	HARDEN
ACETONE	FISHER SCIENTIFIC	4	L	4	L	0	L	DS	122	L	M	1	4	HARDEN
ACID,HYDROCHL[illegible]	WHEATON	1		1	L	0	L	DS	122	L	M	1		HARDEN
ACID,NITRIC		120	ML	120	ML	0	ML	DS	122	L	N	1		HARDEN

CHEMICAL	MANUFACT	USE	Unit	MAX	Unit	AVG	Unit	BD	RM	STATE	STOR	PRES	TMP	SUPER
FREON	MILLER STEPHENSON	64	Z	63		0	OZ	DS	126	L	Y	2	4	HARDEN
GREASE,VACUUM	DOW-CORNING	2	OZ	2	OZ	0	OZ	DS	126	S	F	1	4	HARDEN
SEALING COMPOUND	KILLARD	64	OZ	64	OZ	0	OZ	DS	126	S	F	1	4	HARDEN
ACETONE	FISHER	500	ML	500	ML	100	ML	DS	131	L	N	1	4	HARDEN
EC7	BIOACT	500	ML	500	ML	0	ML	DS	131	L	M	1	4	HARDEN
ETHLENE GLYCOL		2	GA	2	GA	0	GA	DS	131	L	N	1	4	HARDEN
ETHYL ALCOHOL	MIDWEST GRAIN	3	GA	2	GA	1	GA	DS	131	L	N	1	4	HARDEN
HYDRAULIC OIL		500	ML	500	ML	0	ML	DS	131	L	N	1	4	HARDEN
HYDROLUBES		1	GA	1	GA	0	GA	DS	131	L	N	1	4	HARDEN
MET-L-X		3	LB	3	LB	0	LB	DS	131	S	F	1	4	HARDEN
MOLYBDENUM DISULFIDE	SIGMA ALDRICH CORP.	20	G	20	G	0	G	DS	131	S	M	1	4	HARDEN
OIL	TEXACO	1	QT	1	QT	0	QT	DS	131	L	F	1	4	HARDEN
PENETRATING OIL	BLUE RIBBON	4	OZ	4	OZ	0	OZ	DS	131	L	F	1	4	HARDEN
RUST REMOVER	CLING-SURFACE	1	PT	1	PT	0	PT	DS	131	L	N	1	4	HARDEN
SPAN 80	ICI AMERICAS IND	1	PT	1	PT	0	PT	DS	131	L	M	1	4	HARDEN
TRITON 101	ROHM & HAAS	500	ML	500	ML	0	ML	DS	131	L	M	1	4	HARDEN
VINYLTRICHLOROSILANE	FLUKA	500	ML	500	ML	0	ML	DS	131	L	F	1	4	HARDEN
DIFFUSION PUMP OIL	FIL-TECH	1	L	1	L	0	L	DS	131B	L	N	1	4	HARDEN
DUO SEAL PUMP	DUO SEAL	1	GA	1	GA	0	GA	DS	131B	L	N	1	4	HARDEN
PERFLUORO POLYETHER	MONTEFLUOS	3	GA	3	GA	0	GA	DS	131B	L	N	1	4	HARDEN
PUMP OIL	CVC	3	L	3	L	0	L	DS	131B	L	N	1	4	HARDEN
PUMP OIL,ALCATEL 100	ALEATEL	3	L	3	L	0	L	DS	131B	L	N	1	4	HADEN
TYRENO-12	FIL-TECH	2	L	2	L	0	L	DS	131B	L	N	1	4	HARDEN
ACETIC ACID	MALLINCKRODT	500	ML	500	ML	0	ML	DS	132	L	M	1	4	HARDEN
ACETONE	FISHER	8	L	8	L	2	L	DS	132	L	M	1		HARDEN
AMMONIUM HYDROXIDE	FISHER	2.5	L	2.5	L	0	L	DS	132	L	M	1	4	HARDEN
ETHYL ALCOHOL	AAPERM & McCORMICK	1	GA	1	GA	0	GA	DS	132	L	N	1	4	HARDEN
FERRIC CHLORIDE		1	L	1	L	0	L	DS	132	L	N	1	4	HARDEN
HYDROCHLORIC ACID	MALLINKRODT	14	LB	14	LB	0	LB	DS	132	L	M	1	4	HARDEN
HYDROGEN ELECTROLYTE	SENSIDYNE	200	ML	200	ML	0	ML	DS	132	L	N	1	4	HARDEN
HYDROGEN PEROXIDE	FISHER	1	L	1	L	0	L	DS	132	L	N	1	4	HARDEN
NITRIC ACID	MALLINKRODT	7	LB	7	LB	0	LB	DS	132	L	M	1	4	HARDEN
PHOSPHORIC ACID	MALLINCKRODT	500	ML	500	ML	0	ML	DS	132	L	M	1	4	HARDEN
PROPANOL	FISHER	1	GA	1	GA	0	GA	DS	132	L	M	1	4	HARDEN
SCOTCHWELD		0.5	PT	0.5	PT	0	PT	DS	132	S	M	1	4	HARDEN
SODIUM HYDROXIDE	MALLINKRODT	1	KG	1	KG	0	KG	DS	132	S	N	1	4	HARDEN
SODIUM SULFITE	FISHER	200	G	200	G	0	G	DS	132	L	M	1	4	HARDEN
STRIPPER (CHROME ETCHANT)	MICROPAC	1	L	1	L	0	L	DS	132	L	N	1	4	HARDEN
SULFURIC ACID	MALLINKRODT	7	LB	7	LB	0	LB	DS	132	L	M	1	4	HARDEN
TOULENE	MCB	2.5	L	2.5	L	0	L	DS	132	L	M	1	4	HARDEN
TRICHLOROETHANE	FISHER	4	L	4	L	0	L	DS	132	L	M	1	4	HARDEN
TRIMETHOXYSILYMETHACRYLATE	FLUKA	500	ML	500	ML	0	ML	DS	132	L	M	1	4	HARDEN
3 IN 1 OIL	BOYLE MEDWAY	6	OZ	6	OZ	2	OZ	DS	135	L	F	1	4	BORNEMA
ADHESIVE 1 SEALING COMP	STEVENS IND	1.75	OZ	1.75	OZ	0.2	OZ	DS	135	L	R	1	4	BORNEMA
AIR JET	GC ELECTRONICS	7.5	LB	9	LB	1.5	LB	DS	135	L	F	1	4	BORNEMA
ALCONOX DETERGENT	ALCONOX	2	LB	4	LB	1	LB	DS	135	S	K	1	4	BORNEMA

CHEMICAL	MANUFACT	USE	Unit	MAX	Unit	AVG	Unit	BD	RM	STATE	STOR	PRES	TMP	SUPER
ALCOHOL,DEHYDRATED	MIDWEST GRAIN CO.	A 3	GA	3	GA	0	GA	DS	122	L	N	1	4	HARDEN
ALCOHOL,DEHYDRATED	MIDWEST GRAIN CO.	1	GA	1	GA	0	GA	DS	122	L	N	1	4	HARDEN
ALCOHOL,ETHYL		1	L	1	L	0	L	DS	122	L	N	1	4	HARDEN
ALCOHOL,ETHYL	WHEATON	1	L	1	L	0	L	DS	122	L	M	1	4	HARDEN
CEMENT,MULTI PURPOSE,CLEAR	HWI	8	OZ	8	OZ	0	OZ	DS	122	L	R	1	4	HARDEN
CEMENT,PVC,CLEAR	ACE HARDWARE	4	OZ	4	OZ	0	OZ	DS	122	L	R	1	4	HARDEN
CLEANER	MILLER STEPHENS	15	OZ	15	OZ	0	OZ	DS	122	L	Y	2	4	HARDEN
CLEANSER, AJAX	AJAX	14	OZ	14	OZ	0	OZ	DS	122	S	F	1	4	HARDEN
COPPER BRITE		16	QT	16	QT	0	QT	DS	122	L	N	1	4	HARDEN
DESICCANT,PROTEK-SORB ACTIVATED	DAVISON CHEMICAL	940	GM	940	GM	0	GM	DS	122	S	J	1	4	HARDEN
DESICCANT,SUPER PROTEK-SORB SILICA	DAVISON CHEMICAL	658	GM	658	GM	0	GM	DS	122	S	J	1	4	HARDEN
FERRIC CHLORIDE		1	OZ	1	OZ	0	OZ	DS	122	L	N	1	4	HARDEN
FLOURINERT		1.5	OZ	1.5	OZ	0	OZ	DS	122	L	J	1	4	HARDEN
FLUID,VACUUM PUMP DIRECT DRIVE		1	L	1	L	0	L	DS	122	L	N	1	4	HARDEN
FLUORINERT	3M	45	LB	45	LB	0	LB	DS	122	L	F	1	4	HARDEN
FLUX,ROSIN	UNICAL CHEMICAL	1	QT	1	QT	0	QT	DS	122	L	M	1	4	HARDEN
GEL,DUPRO QUICK SUPER GLUE	LOCTITE CORP.	0.6	OZ	0.6	OZ	0	OZ	DS	122	L	R	1	4	HARDEN
MICROCLEAN	COLE PARMER	4	OZ	4	OZ	0	OZ	DS	122	L	N	1	4	HARDEN
OIL,PUMP	ALCATEL	1	L	1	L	0	L	DS	122	L	F	1	4	HARDEN
POLISH,ALUMINUM	BUEHLER	6	OZ	6	OZ	0	OZ	DS	122	L	N	1	4	HARDEN
POWDER,SCOURING GLASS CLEANER		14	OZ	14	OZ	0	OZ	DS	122	S	F	1	4	HARDEN
PREPS,ALCOHOL,2PLY-MEDIUM	KENDAL WEBCOL	1200	BX	1200	BX	0	BX	DS	122	L	K	1	4	HARDEN
RE-NU,CONTACT	MILLER STEPHENS	16	OZ	16	OZ	0	OZ	DS	122	L	Y	2	4	HARDEN
SEALANT,GENERAL PURPOSE	DOW CORNING	3	OZ	3	OZ	0	OZ	DS	122	L	R	1	4	HARDEN
WASHING LIQUID,JOY LEMON FRESH	CONCORD	32	OZ	32	OZ	0	OZ	DS	122	L	N	1	4	HARDEN
WD-40	WD-40 CO.	9	OZ	9	OZ	0	OZ	DS	122	L	Y	2	4	HARDEN
WIPES,STATICIDE	ACACL INDUSTRIES	6	BX	6	BX	0	BX	DS	122	L	K	1	4	HARDEN
ARGON UPH	MATHESON	70	CF	70	CF	70	CF	DS	123	G	L	1	4	BORNEMAI
CARBON MONOXIDE IN AIR	MATHESON	54	CF	54	CF	54	CF	DS	123	G	L	1	4	BORNEMAI
NITROGEN UPH	MATHESON	64	CF	64	CF	64	CF	DS	123	G	L	1	4	BORNEMAI
OXYGEN IN ARGON	MATHESON	108	CF	108	CF	108	CF	DS	123	G	L	1	4	BORNEMAI
OXYGEN IN NITROGEN	MATHESON	108	CF	135	CF	135	CF	DS	123	G	L	1	4	BORNEMAI
CLEANER,COPPER	LONDON CHEMICAL	5	GA	5	GA	0	GA	DS	124	L	N	1	4	HARDEN
ELECTRO BRITE		5	GA	5	GA	0	GA	DS	124	L	N	1	4	HARDEN
LUBRICANT,FILM	IRACLE POWDER PRODUCT	6	OZ	6	OZ	0	OZ	DS	124	S	Y	2	4	HARDEN
PAINT	KRYLON	13	OZ	13	OZ	0	OZ	DS	124	L	Y	2	4	HARDEN
PAINT	CUSTOM TECH	6	OZ	6	OZ	0	OZ	DS	124	L	Y	2	4	HARDEN
PAINT	KRYLON	12	OZ	12	OZ	0	OZ	DS	124	L	Y	2	4	HARDEN
PRIME,COAT 1204	DOW CORNING	13.5	OZ	13.5	OZ	0	OZ	DS	124	L	F	1	4	HARDEN
PRIMER,SILICONE	GE	1	PT	1	PT	0	PT	DS	124	L	M	1	4	HARDEN
PUR-A-GOLD,POTASS.GOLD CYANIDE	SEL-REX	75	OZ	75	OZ	0	OZ	DS	124	S	N	1	4	HARDEN
STATIC FREE,C400	CHEMTRONICS	4	OZ	4	OZ	0	OZ	DS	124	L	Y	2	4	HARDEN
STIK FREE	BARD LAB	6	OZ	6	OZ	0	OZ	DS	124	L	Y	2	4	HARDEN
TRICH[illegible]ETHYLENE	MILLER STEPHENS	[illegible]	OZ	16	OZ	0	OZ	DS	124	L	Y	2	4	HARDEN
DIE[illegible]NSTANT	LOCKTITE		OZ	0.7	OZ	0	OZ	DS	126	L	N		4	HARDEN
[illegible] AGENT	SMOOTH-ON PRODUCTS	1.25	LB	1.25	LB	0	LB	DS	126	L	F	1	4	HARDEN

CHEMICAL	MANUFACT	USE	[illegible]	MAX	Unit	AVG	Unit	BD	RM	STATE	STOR	PRES	TM	[illegible]
SOLDER FLUX Si	W. HARRIS CO	1	[illegible]	1	LB	1	LB	DS	135	S	F	1	4	NEMANN
SOLDER, ALPHA	ALPHA METALS	2	[illegible]	5	LB	1	LB	DS	135	S	R	1	4	RNEMANN
SOLDER, DIVCO	LEAD CO	8	OZ	16	OZ	4	OZ	DS	135	S	R	1	4	BORNEMANN
SOLDER, ERSIN MULTICORE	MULTICORE SOLDERS LTD	4.5	LB	5	LB	0.5	LB	DS	135	S	R	1	4	BORNEMANN
SOLDER, RESIN CORE	KESTER	4	OZ	16	OZ	4	OZ	DS	135	S	R	1	4	BORNEMANN
SPINNECTIC OIL (RUSKA)	EXXON	3	GA	4	GA	1	GA	DS	135	L	F	1	4	BORNEMANN
STAINLESS STEEL CLEANER/POLISH	3M	2.5	LB	2.5	LB	0.5	LB	DS	135	L	F	1	4	BORNEMANN
SULFER	MALLINCKRODT CHEMICAL WORKS	1	LB	1	LB	0	LB	DS	135	S	F	1	4	BORNEMANN
VACSORB MOLECULAR SIEVE	UOP	11	LB	12	LB	1	LB	DS	135	S	F	1	4	BORNEMANN
WD-40	WD-40 CO	18	OZ	18	OZ	6	OZ	DS	135	L	F	1	4	BORNEMANN
ETHYL ALCOHOL	MIDWEST GRAIN PRODUCTS	0.5	GA	1	GA	0.5	GA	DS	151	L	N	1	4	LOWREY
ALCOHOL	MIDWEST GRAIN	2	GA	2	GA	0	GA	DS	201	L	N	1	4	EGLESTON
ASILAMINE		500	ML	500	ML	0	ML	DS	201	L	N	1	4	EGLESTON
DUSTER	SIPI	14	OZ	14	OZ	2	OZ	DS	201	G	Y	2	4	EGLESTON
EPOXY	COLE PARMER	35	OZ	35	OZ	6	OZ	DS	201	L	J	1	4	EGLESTON
LOCKTITE	LOCKTITE	8	OZ	8	OZ	1	OZ	DS	201	L	N	1	4	EGLESTON
MOLD RELEASE	MILLER STEPHENSON	16	OZ	16	OZ	0	OZ	DS	201	L	Y	2	4	EGLESTON
MOLD RELEASE	AXEL	1	GA	1	GA	0	GA	DS	201	L	F	1	4	EGLESTON
OIL	LIQUID WRENCH	4	OZ	4	OZ	0	OZ	DS	201	L	F	1	4	EGLESTON
RTV SILICON	GE	10.3	OZ	10.3	OZ	0	OZ	DS	201	S	N	1	4	EGLESTON
SOLDER FLUX	UNK	4	OZ	4	OZ	0	OZ	DS	201	S	N	1	4	EGLESTON
SOLDER PASTE	RUBY CHEMNICAL							DS	201	S	F	1	4	F [illegible]
ULTRASONIC CLEANER	BRANSONIC	1	QT	1	QT	0	QT	DS	201	L	N	1	4	[illegible] STON
ULTRASONIC CLEANER	BRANSONIC	1	QT	1	QT	0	QT	DS	201	L	N	1	4	EGLESTON
WD-40	WD-40 CO.	9	OZ	9	OZ	0	OZ	DS	201	L	Y	2	4	EGLESTON
ARGON	AIR PRODUCTS	1500	CF	1500	CF	4500	CF	DS	206	G	L	2	4	MILLER
BUTANE	AIR PRODUCTS	8	OZ	8	OZ	1	OZ	DS	206	G	L	2	4	MILLER
3140 RTV COATING	DOW	16	OZ	16	OZ	0	OZ	DS	207	L	F	1	4	HARDEN
3141 RTV COATING	DOW	16	OZ	16	OZ	0	OZ	DS	207	L	F	1	4	HARDEN
ATC-3 ACCELERATOR	W.H.BRADY CO.	1	L	1	L	0	L	DS	207	L	N	1	4	HARDEN
ATC-3 ACCELERATOR	MILLER-STEPHENSON	6	GA	6	GA	0	GA	DS	207	L	F	1	4	HARDEN
EPON RESIN 828	MILLER-STEPHENSON	32	OZ	32	OZ	0	OZ	DS	207	L	N	1	4	HARDEN
EPON RESIN 828	MILLER-STEPHENSON	32	OZ	32	OZ	0	OZ	DS	207	L	N	1	4	HARDEN
EPOXY KIT	COLE PARMER	1	OZ	2	OZ	1	OZ	DS	207	P	K	1	4	HARDEN
EPOXYLITE HARDNER	EPOXYLITE CORP.	0.5	LB	0.5	LB	0.1	LB	DS	207	L	F	1	4	HARDEN
EPOXYLITE RESIN	EPOXYLITE CORP.	1.48	LB	1.48	LB	0.1	LB	DS	207	L	F	1	4	HARDEN
NADIC METHYL ANHYDRIDE	SPECTRUM CHEMICAL	2.5	KG	2.5	KG	0	KG	DS	207	L	M	1	4	HARDEN
NIAX 1025 POLYOL	UNION CARBIDE	5	GA	5	GA	0	GA	DS	207	L	F	1	4	HARDEN
NIAX POLYOL PPG-1025	W.H.BRADY	1	L	1	L	0	L	DS	207	L	N	1	4	HARDEN
PERMABOND 910	PERMABAOND INTL.	1	OZ	1	OZ	0.1	OZ	DS	207	L	N	1	4	HARDEN
PHFFT PRECISION DUSTER	FISHER	18	OZ	18	OZ	4	OZ	DS	207	G	Y	2	4	HARDEN
PLETHANOLAMINE	FISHER	500	ML	500	ML	0	ML	DS	207	L	M	1	4	HARDEN
SILICON RUBBER COMPOUND RTV 630A	GE	0.91	LB	1	LB	0.1	LB	DS	207	L	F	1	4	HARDEN
SILICONE PRIMER BLUE	GWE	1	PT	1	PT	0	PT	DS	207	L	M	1	4	HARDEN
SILICONE RUBBER CURING AGENT RTV630B	GE	0.09	LB	0.1	LB	0.01	LB	DS	207	L	N	1	4	HARDEN
THREAD LOCKER 222	LOCTITE	1.69	OZ	1.69	OZ	0.5	OZ	DS	207	L	N	1	4	HARDEN
[illegible]	[illegible]	[illegible]	OZ	[illegible]	OZ	1	OZ	DS	215	L	N	1	[illegible]	[illegible]

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Building Name: DS Building Manager: J.L. Boston 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?

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

23. Where do excess janitorial supplies go?

Source: _____

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

Chemical	Amount	Chemical	Amount

Source: _____

Building Manager's Questionnaire

Building Name: DS Building Manager: J.L. Boston 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.

Registration Number	Content	Quantity	Last Inspection Date	Preventive Maintenance Performed	Inside Or Outside
68476-34-6	DIESEL FUEL	30 GAL		Y/N	
7697-37-2	NITRIC ACID	01 C		Y/N	
7440-37-1	ARGON	01 C		Y/N	215
7440-37-1	ARGON	02 C		Y/N	206
7440-37-1	ARGON	01 C			135
7440-37-1	ARGON	01 C			123
7664-93-9	SULFURIC ACID	01 C			132
7782--37-9	NITROGEN	03 C			135
7782-37-9	NITROGEN	04 C			135
7782-37-9	NITROGEN	02 C			135
7782-37-9	NITROGEN	01 C			123
7782-37-9	NITROGEN	01 C			135
7782-37-9	NITROGEN	04 C		Y/N	Outside

Source: Emergency and Hazardous Chemical Inventory Form - Chemical Storage Tanks on EGG Mound Site Owned and Maintained by Outside Contractors 8/8/94

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

Double-Walled	Contents	Days/Year In Use	Overflow Tank	Previous Overflow
Y / N			Y / N	Y / N

Source: _____

27. Does the building generate, store, or dispose of hazardous waste? Yes No

Materials	Amount
ATTACHED	

Source: Characterization of Mounds Hazardous, Radioactive, and Mixed Wastes 08/15/90

DS BLDG	CYANO PHENOL	D002	0.4
DS BLDG	DEVELOPER CD-30	D002	0.8
DS BLDG	DIETHYLENE GLYCOL MONOBUTYL ETHER ACETATE	D001	36.2
[illegible]LDG	DIHYDROXY DIPHENYL SILANE	NONE	0.2
[illegible]LDG	DRAIN CLEANER	D002	5.7
DS BLDG	DRY ACID SALT WASTE	NONE	264.0
DS BLDG	DYKEM DX-296	D001	1.3
DS BLDG	ELECTRO BRITE	D002	1.4
DS BLDG	EPOXYLITE 8822 PART A	NONE	1.0
DS BLDG	EPOXYLITE 8822 PART B	NONE	0.5
DS BLDG	ETHYL ALCOHOL, WATER WASTE	D001	116.3
DS BLDG	ETHYLENE GLYCOL, WATER	NONE	480.0
DS BLDG	FERRIC CHLORIDE	D002 D006 D007 D008	644.4
DS BLDG	FERRIC CHLORIDE WASTE	D002	487.3
DS BLDG	FERRIC CHLORIDE WASTE	D002	464.2
DS BLDG	FERRIC CHLORIDE WASTE	D002	605.0
DS BLDG	FERRIC CHLORIDE WASTE	D002	313.0
DS BLDG	FREON WASTE	F002	738.5
DS BLDG	FREON WASTE	F002	737.0
DS BLDG	HAFNIUM HYDRIDE, ACETONE (FORMERLY LP91-1249)	D001 D003 F003	0.5
DS BLDG	HALTHANE 73-18 CURING AGENT	NONE	1.0
DS BLDG	METRON 197	D001	89.6
DS BLDG	HYDROCHLORIC ACID	D002	7.1
DS BLDG	HYDROCHLORIC ACID	D002	2.0
DS BLDG	IODINE	NONE	2.0
DS BLDG	ISOPAR H	D001	36.8
[illegible]LDG	KEPRO 1G	D001	7.6
[illegible]LDG	KESTER FLUX	D001	2.0
DS BLDG	KONICA PCC-A	NONE	4.0
DS BLDG	LEAD FILTERS	D008	3.0
DS BLDG	LOCTITE 416	D001	1.1
DS BLDG	LUPERSOL DDM-9	D001	8.0
DS BLDG	MARKEM 7132 IVORY INK	NONE	0.1
DS BLDG	MARKEM 8829 BLACK INK	NONE	0.3
DS BLDG	MARKEM 8829 IVORY INK	NONE	0.1
DS BLDG	MERCURY WASTE	D009 U151	0.4
DS BLDG	METHYL ISOBUTYL KETONE	D001 F003	3.7
DS BLDG	MOLD RELEASE 225	D001	2.1
DS BLDG	NABC CLEANER	NONE	2.0
DS BLDG	NICKEL SULFATE	NONE	269.0
DS BLDG	NICKEL SULFATE CLEANUP MATERIAL	NONE	52.9
DS BLDG	PCB OIL BOTTLES	PCB2	25.0
DS BLDG	PHENANTHROLINE	NONE	0.1
DS BLDG	PHOTO RESIST	D002	1.8
DS BLDG	PHOTO RESIST	D002	1.7
DS BLDG	POLYAMIDE RESIN	D001	2.0
DS BLDG	PURPLE INK	D001	0.8
DS BLDG	RUSTICIDE	D002	1.0
DS BLDG	SILICA GEL	NONE	156.5
DS BLDG	SILICA GEL	NONE	126.5
DS BLDG	SILICA GEL WASTE	NONE	154.9
[illegible]BLDG	SILICA GEL WASTE	NONE	257.5
[illegible]LDG	SILICON POWDER	NONE	0.1

DS-125	ANTI STATIC SOLUTION	NONE	0.3
DS-125	ARSENOUS ACID	D002 D004	0.3
DS-125	BARIUM CHLORIDE	D005	0.9
DS-125	BARIUM CHLORIDE	D005	2.2
DS-125	BIOACT WASTE	D001 D040 F001 F003	106.8
DS-125	BLUE PAST 2301	NONE	51.9
DS-125	BLUE PASTE	NONE	0.9
DS-125	BROMINE	D002 D003	1.7
DS-125	COPPER METAL ACCELERATOR	NONE	8.7
DS-125	COPPER OXIDE	NONE	0.6
DS-125	COPPER STRIP ACCELERATOR	NONE	1.0
DS-125	DEXTROSE	NONE	12.9
DS-125	DIOCTYL PHTHALATE	NONE	4.6
DS-125	DIPHENYL METHANE 4,4 DIISOCYANATE	D001 D003	1.0
DS-125	EPON RESIN 828	NONE	5.5
DS-125	EPON RESIN 828	NONE	3.7
DS-125	EPON RESIN 828	NONE	0.6
DS-125	EPOXY RESIN	D001	1.8
DS-125	EPOXYLITE 8822 PART A	NONE	1.3
DS-125	EPOXYLITE 8822 PART A	NONE	1.3
DS-125	EPOXYLITE 8822 PART B	D002	0.5
DS-125	EPOXYLITE 8822 PART B	D002	0.5
DS-125	ETHANOL WASTE	D001	40.5
DS-125	ETHANOL WASTE	D001	41.1
DS-125	ETHANOL WASTE	D001	24.5
DS-125	ETHYL ALCOHOL	D001	8.2
DS-125	ETHYL ALCOHOL	D001	3.9
DS-125	FREON	F002	7.9
DS-125	FREON TF	F002	40.0
DS-125	FREON WASTE	F002	7.5
DS-125	FREON WASTE	F002	27.2
DS-125	GE 630 PART A	NONE	1.9
DS-125	GE 630 PART B	NONE	0.2
DS-125	GE SILICON PRIMER SS4155	D001	1.4
DS-125	GREEN DYE	NONE	3.2
DS-125	GREEN GLUE	NONE	2.9
DS-125	IODINE	NONE	1.3
DS-125	IRON POWDER ACCELERATOR	D003	1.8
DS-125	KESTER SOLDERING FLUX 197	D001	1.0
DS-125	MAGNESIUM OXIDE	NONE	2.3
DS-125	MANGANESE DIOXIDE	D001	0.3
DS-125	METHANOL WASTE	D001 F003	4.0
DS-125	PATCHING COMPOUND	F003 F005	1.9
DS-125	PDI BLUE 2301	NONE	18.1
DS-125	PDI YELLOW 2248	NONE	19.3
DS-125	PERMABOND 910	NONE	0.1
DS-125	POTASSIUM BIIODATE	D001	0.9
DS-125	POTASSIUM BROMATE	D001	0.8
DS-125	POTASSIUM BROMIDE	NONE	1.2
DS-125	POTASSIUM DICHROMATE	D001 D007	0.4
DS-125	POTASSIUM FERROCYANIDE	D003	0.7
DS-125	POTASSIUM IODATE	D001	0.6
DS-125	PRINTED CIRCUIT BOARDS	D008	5.7
DS-125	RTV-630 PART B	F005	0.1
DS-125	SILCON DIOXIDE	NONE	64.0

DS-125	SILICA GEL	NONE	4.6
DS-125	SILICA GEL	NONE	16.5
DS-125	SILICA GEL PACKETS	NONE	18.4
[illegible]25	TIN METAL ACCELERATOR	NONE	0.4
[illegible]-125	TRICHLORO ETHYLENE	D040 F001	2.2
[illegible]125	TRICHLOROETHYLENE WASTE	D040 F001	279.0
DS-125	TRIPHENYL PHOSPHITE	NONE	2.8
DS-125	TRIPHENYL PHOSPHITE	NONE	1.4
DS-125	VACUUM PUMP FLUID	NONE	3.8
DS-125	VERSAMID 140	NONE	3.1
DS-125	VERSAMID 140	NONE	3.4
DS-125	WELDWOOD CONTACT CEMENT	D001 F002 F005	1.5
DS-125	YELLOW PASTE	NONE	0.8
DS-125	YELLOW PASTE 2248	NONE	109.6
DS-126	AMMONIA THALOCYANINE	D002 D003	3.0
DS-126	AMMONIUM HYDROXIDE	D002	1.9
DS-126	AMMONIUM SULFATE	NONE	0.1
DS-126	BORON STANDARD SOLUTION	NONE	8.2
DS-126	BROMO CRESOL PURPLE	D001	0.2
DS-126	CHROMIC PERCHLORATE	D001 D007	0.1
DS-126	COPPER CLEANER WITH FERRIC CHLORIDE	D002	2.3
DS-126	EMRALON 320	D001	3.0
DS-126	FERRIC CHLORIDE SOLIDS	NONE	14.0
DS-126	MARKEM 207 CLEANER	F002	6.6
DS-126	METHYL ORANGE SOLUTION	NONE	3.4
DS-126	NICKEL STANDARD SOLUTION IN NITRIC	NONE	1.9
DS-126	NICKEL SULFATE	NONE	0.1
DS-126	ORION IONALYZER	NONE	0.1
[illegible]126	ORION IONALYZER	NONE	0.1
[illegible]126	SODIUM HYDROXIDE SOLUTION	D002	1.8
DS-126	SULFURIC ACID	D002	0.3
DS-126	TINNING SOLUTION	D002	2.2
DS-126	TOLUENE	D001 F005	0.3
DS-131	ACETIC ACID	D001 D002	3.8
DS-131	ACETIC ACID	D001 D002	2.0
DS-131	ASIMILINE 170	NONE	1.0
DS-131	BIOACT EC7	D001	7.1
DS-131	CABOSIL	NONE	10.0
DS-131	CARBON TETRA CHLORIDE	D019	1.8
DS-131	CYANOCURE	NONE	2.9
DS-131	DOW 705 FLUID	NONE	2.0
DS-131	DYMAN INK	D001	0.3
DS-131	ETHANOL	D001	6.9
DS-131	ETHANOL WASTE	D001	7.4
DS-131	ETHYL ALCOHOL	D001	4.2
DS-131	ETHYL ALCOHOL	D001	0.5
DS-131	EXTERNAL MOLD RELEASE	D001 D035 F002 F003 F005	8.0
DS-131	GE SILICONE SS4179	D001	1.5
DS-131	ISOPROPANOL	D001	8.6
DS-131	METHYL PYRRILODINONE (1-,-2-)	D001	1.3
DS-131	METHYLENE CHLORIDE	F002	9.4
DS-131	MICROPOSIT DEVELOPER CD-30	D002	8.9
DS-131	MICROPOSIT EDGE BEAD REMOVER	D001	33.9
[illegible]S-131	MICROPOSIT PHOTO RESIST	D001 F003	2.9
[illegible]31	MICROPOSIT PHOTO RESIST 51400	D001 F003	9.7

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DS-131	MICROPOSIT PRIMER	D001	2.5
DS-131	MICROPOSIT REMOVER	D001	9.0
DS-131	MICROPOSIT THINNER TYPE A	D001 F003	8.6
DS-131	MOLYBDENUM DISULFIDE	NONE	0.2
DS-131	PHENYL METHYL POLY SILANE	D001	0.8
DS-131	PHOSPHORIC ACID	D002	2.9
DS-131	PRIME COAT	D001	0.9
DS-131	RECORDER INK	D001	1.8
DS-131	SOLDER FLUX	D001	0.1
DS-131	SPAN 80	NONE	1.7
DS-131	STAY CLEAN	D002	2.0
DS-131	TETRAHYDROFURAN	D001 D003 U213	11.3
DS-131	TOLUENE	D001 F005 U220	8.9
DS-131	TRICHLOROETHANE (1,1,1-)	F002	14.3
DS-131	TRICHLOROETHYLENE	D040 F002	4.8
DS-131	TRITON N101	NONE	0.5
DS-131	ULTRASONIC CLEANER- GENERAL	D002	0.5
DS-131	ULTRASONIC CLEANER- INDUSTRIAL	D002	0.8
DS-131	WHITE GAS	D001	10.0
DS-135	BRAZING FLUX	NONE	1.2
DS-135	DE-OX-ID	D001	0.2
DS-135	DOW 560 FLUID	NONE	2.0
DS-135	DYKEM LAYOUT RED DX-296	D001	0.3
DS-135	FREON	F002	2.1
DS-135	GC RUBBER CEMENT	D001 D035 F005	0.1
DS-135	HEAT SINK COMPOUND	NONE	0.2
DS-135	LITHIUM CHLORIDE SOLID	NONE	0.7
DS-135	LITHIUM CHLORIDE SOLUTION	NONE	1.5
DS-135	LUDOX	D002	47.0
DS-135	METHYLENE BUTANE	D001	6.1
DS-135	METHYLENE CHLORIDE	F002	1.1
DS-135	MONOPLEX DOS	NONE	33.0
DS-135	OIL WASTE	NONE	3.6
DS-135	OIL WASTE	NONE	0.6
DS-135	PENTANE	D001	5.7
DS-135	PERMABOND 910	D001	0.1
DS-135	POTASSIUM IODIDE SOLUTION	NONE	1.1
DS-135	PVC SOLVENT CEMENT	D001	0.6
DS-135	RECORDER INK	D001	1.2
DS-135	RTV-7 CURING CATALYST	NONE	1.0
DS-135	RTV-7 SILICONE RUBBER	NONE	1.9
DS-135	RUBBER TO METAL CEMENT	D001 D035 F005	1.4
DS-135	SOLDERING PASTE	NONE	0.5
DS-135	VALVE LUBRICANT	NONE	8.6
DS-207	AEROJET ACCELERATOR ATC-3	D007	57.4
DS-207	DIETHANOL AMINE	NONE	2.0
DS-207	DOW 3140 RTV	NONE	2.6
DS-207	EPON 828	NONE	2.5
DS-207	EPOXYLITE 8822 PART A	NONE	1.3
DS-207	EPOXYLITE 8822 PART B	D002	0.5
DS-207	ETHYL ALCOHOL	NONE	9.9
DS-207	GE SILICONE SS4155	D001	1.4
DS-207	GLASS BUBBLES	NONE	21.6
DS-207	LOCTITE 222	D001	0.2
DS-207	MOLECULAR SEIVES	NONE	1.0

DS-207	MOLECULAR SEIVES	NONE	2.0
DS-207	MOLECULAR SEIVES	NONE	1.0
DS-207	MOLECULAR SEIVES	NONE	2.0
DS-207	MOLECULAR SEIVES	NONE	3.3
DS-207	NADIC METHYL ANHYDRIDE	D002	8.3
DS-207	NIAX POLYOL PPG-1025	NONE	42.4
DS-207	RTV 630 PART A	NONE	0.6
DS-214	ACETIC ACID SPILL CLEANUP	NONE	142.1
DS-214	ACETIC ACID SPILL CLEANUP	NONE	224.5
DS-215	EPOXY RESIN	D001	1.3
DS-215	EPOXY RESIN WITH POLYAMINE	D001	1.2
DS-216	SCOTCH WELD	D001	0.3
DS-217	COPPER BRITE	NONE	31.0
DS-217	PHOSPHORIC ACID	D002	1.0
DS-218	3M ELECTRICAL RESIN A	D001	0.5
DS-218	3M ELECTRICAL RESIN B	D001	0.5
DS-218	BELZONA E METAL BASE	NONE	2.8
DS-218	BELZONA META SOLIDIFIER	NONE	0.9
DS-218	CONAP CONATHANE EN7-B	NONE	0.5
DS-218	ELASTOMER CONDITIONER	NONE	0.5
DS-218	ENERGINE CLEANING FLUID	D001	0.5
DS-218	EPOXY CTBN	NONE	3.1
DS-218	EPOXYLITE 8822 PART A	NONE	1.5
DS-218	EPOXYLITE 8822 PART B	NONE	0.5
DS-218	MP FLUID ELASTOMER BASE	NONE	3.9
DS-218	MP FLUID ELASTOMER SOLIDIFER	NONE	1.9
DS-218	SILICONE	D001	2.0
DS-218	SILICONE	D001	6.0
DS-218	SILICONE CURING AGENT	D001	0.1
DS-218	TOLUENE DIISOCYANATE	D001	1.0
DS-225	ARMSTRONG ADEHSIVE	D001	15.8
DS-225	CARBON DISULFIDE	D001 F005	3.0
DS-225	CEMENT SOLVENT	D001	1.4
DS-225	CONATHANE EN7 PART B	NONE	0.5
DS-225	DE-OX-ID	D001	0.5
DS-225	EPON 828	NONE	4.5
DS-225	EPOXY RESIN	D001	1.0
DS-225	EPOXYLITE 8822 PART A	NONE	2.5
DS-225	EPOXYLITE 8822 PART B	D002	1.0
DS-225	FLUX 30	D002	0.4
DS-225	FLUX 30	D002	0.4
DS-225	HALTHANE CURING AGENT 73-18	NONE	0.1
DS-225	HALTHANE RESIN 73-18	NONE	0.2
DS-225	LEAD OCTOATE WITH SYRINGES	D008	5.0
DS-225	MARKEM BLACK INK	NONE	0.3
DS-225	NICKEL ACETATE	NONE	106.0
DS-225	NICKEL CHLORIDE	NONE	8.9
DS-225	RESIN WASTE	NONE	70.3
DS-225	RESIN WASTE	NONE	85.8
DS-225	RESIN WASTE	NONE	176.0
DS-225	SPRAY CLEAN	D001 D022	10.6
DS-225	SS 4155	D001	1.0
DS-225	TRIPHENYL PHOSPHATE	NONE	1.4
DS-225	TRIPHENYL PHOSPHITE	D001	1.4
DS-225	TRIPHENYL PHOSPHITE	NONE	6.2

DS-225	VERSIMID 125	NONE	1.0
DS-225	VERSIMID 140	NONE	1.0
DS-226	3M SCOTCHLITE	NONE	2.9
DS-226	CALCIUM SULFATE	NONE	4.1
DS-226	DIETHANOLAMINE	NONE	12.4
DS-226	DIPSODAL	NONE	1.2
DS-226	DUPONT 1202 THINNER	D001	7.2
DS-226	EPON RESIN 828	NONE	14.7
DS-226	ISOPROPANOL	D001	9.0
DS-226	KESTER FLUX 197	D001	4.8
DS-226	LACQUER THINNER	D001	6.9
DS-226	MARKEM 207 CLEANER	F002	15.1
DS-226	METHYLENE CHLORIDE	U080 F002	23.0
DS-226	NITRIC ACID	D002	7.0
DS-226	PDI BLUE 38010	NONE	9.1
DS-226	PDI BLUE PASTE	NONE	0.4
DS-226	PDI BLUE PASTE 22-38010	NONE	7.6
DS-226	PDI YELLOW 20480	NONE	7.8
DS-226	PDI YELLOW PASTE	NONE	0.5
DS-226	PDI YELLOW PASTE 22-20481	NONE	8.7
DS-226	SODIUM CHLORATE (.1%), WATER	D001	3.9
DS-226	VERSAMID 140	NONE	0.4
DS-227	CHROMIUM POWDER	D007	4.4
DS-227	GADOLINIUM METAL	NONE	0.4
DS-227	HASTELLOY	D006 D007	0.1
DS-227	MOLYBDENUM POWDER	D003	6.0
DS-227	NARLINER	D001 F005	5.8
DS-227	POTASSIUM BICARBONATE	NONE	2.0
DS-227	SUBMICRON MOLYBDENUM	D003	1.0
DS-227	TANTALUM POWDER	D003	3.6
DS-227	TITANIUM BORIDE	NONE	0.1
DS-227	TUNGSTEN POWDER	D003	2.2
DS-229	HALTHANE 7318 A	D003	0.2
DS-229	HALTHANE 7318 B	NONE	0.2
DS-229	KESTER 197 THINNER	D001	4.0
DS-229	SULFUR	NONE	2.0
DS-231	B4 HARDENER	D002	0.2
DS-231	DER 331	NONE	2.2
DS-231	OAKITE 33	D002	46.9
DS-231	VERSIMID 140	NONE	2.0
DS-246	ACETIC ACID	D001 D002	2.1
DS-246	ACETIC ACID, GLACIAL	D002	1.0
DS-246	ALUMINUM IODIDE	D003	0.2
DS-246	ALUMINUM POWDER	D003	0.1
DS-246	AMMONIUM ACETATE	NONE	1.1
DS-246	BARIUM GRANULES	D005	0.1
DS-246	BISMUTH LEAD	D008	0.2
DS-246	CALCIUM SHOT	D003	0.1
DS-246	CALCIUM SHOT	D003	0.1
DS-246	CHROMIUM IODIDE	D007	0.1
DS-246	CHROMIUM OXIDE	D007	0.1
DS-246	CHROMIUM SHOT	D007	0.1
DS-246	COBALTIC IODIDE	NONE	0.1
DS-246	CONDUCTIVE RED ENAMEL SOLVENT COATING	D001	1.1

DS-246	COPPER IODIDE	NONE	1.1
DS-246	COPPER OXIDE	NONE	0.1
[redacted]46	ETHANOL, ISOPROPANOL, ACETONE WASTE	D001	6.2
[redacted]6	FLUORAD FC430	NONE	0.3
DS-246	GLYCEROL	NONE	2.4
DS-246	HYDROCHLORIC ACID	D002	6.5
DS-246	HYDROFLUORIC ACID	D002 U134	0.3
DS-246	INDIUM POWDER	NONE	0.1
DS-246	KODAK PMT ACTIVATOR	NONE	10.2
DS-246	LEAD AND COPPER	D008	1.0
DS-246	MERCURY	D009	0.1
DS-246	MERCURY CONTAMINATED GLASSWARE	D009	6.2
DS-246	MERCURY, METALLIC	D009 U151	5.3
DS-246	MOCK EXPLOSIVE PINK POWDER	NONE	1.2
DS-246	MOLECULAR SEIVE	NONE	1.1
DS-246	MOLYBDENUM PENTACHLORIDE	NONE	0.1
DS-246	MOLYBDENUM TETRAOXIDE	NONE	0.2
DS-246	MOLYBDENUM TETRASULFIDE	D003	0.6
DS-246	MOLYBDENUM, MANGANESE POWDER	NONE	0.4
DS-246	MOLYDAG 210	NONE	0.1
DS-246	NICKEL FLAKE	D003	1.0
DS-246	NICKELOUS OXIDE	NONE	0.5
DS-246	NITRIC ACID	D002	5.7
DS-246	PHENYL SULFONE	NONE	0.1
DS-246	PHOSPHORIC ACID	D002	4.9
DS-246	PHOSPHORUS POWDER	D003	0.1
[redacted]246	POTASSIUM CARBONATE	NONE	1.7
[redacted]46	RTV 630 PART A	NONE	1.0
[redacted]246	RTV 630 PART B	NONE	0.1
[redacted]46	RUBBER CEMENT	D001	0.1
DS-246	SILICON DIOXIDE	NONE	0.5
DS-246	STRONTIUM GRANULES	D003	0.1
DS-246	TANTALUM BROMIDE	D003	0.1
DS-246	TEMPERATURE INDICATING FLUID	F002	2.0
DS-246	TIN FLUORIDE	NONE	0.1
DS-246	TITANIUM FOIL	D003	0.2
DS-246	TUNGSTEN CHLORIDE	NONE	0.1
DS-246	UROCHEM BLUE SOLVENT COATING	D001	1.0
DS-246	YTTRIUM CHLORIDE	NONE	0.1
DS-246	YTTRIUM FOIL	D003	0.2
DS BLDG	ACETIC ACID	D002	3.0
DS BLDG	AKROCHEM PETROREZ 801	NONE	1.0
DS BLDG	ALGINIC ACID	NONE	4.0
DS BLDG	ALUMINUM OXIDE	NONE	0.5
DS BLDG	ALUMINUM OXIDE	NONE	20.0
DS BLDG	AMSCO SOLVENT	D002	4.0
DS BLDG	CHEM MIX	D001	1.0
DS BLDG	CHESTERTRON BELT FLO	D001	4.8
DS BLDG	CHLOROFORM	D022	11.3
DS BLDG	CITRIC ACID SOLUTION	NONE	3.0
[redacted]BLDG	CONATHANE EN-7 PART A	NONE	2.0
[redacted]LDG	CPVC SOLVENT CEMENT	D001	0.7

p 7i

Building Manager's Questionnaire

Building Name: DS Building Manager: J.L. Boston 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

32. Is mixed 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: _____

Building Name: DS Building Manager: J.L. Boston 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: _____

Building Manager's Questionnaire

Building Name: DS Building Manager: J.L. Boston 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?

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: _____

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

Building Name: DS Building Manager: J.L. Boston 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.

37. Has a pollution prevention program been developed for the building? Yes No

Appendix G

Radiological Summary/Information

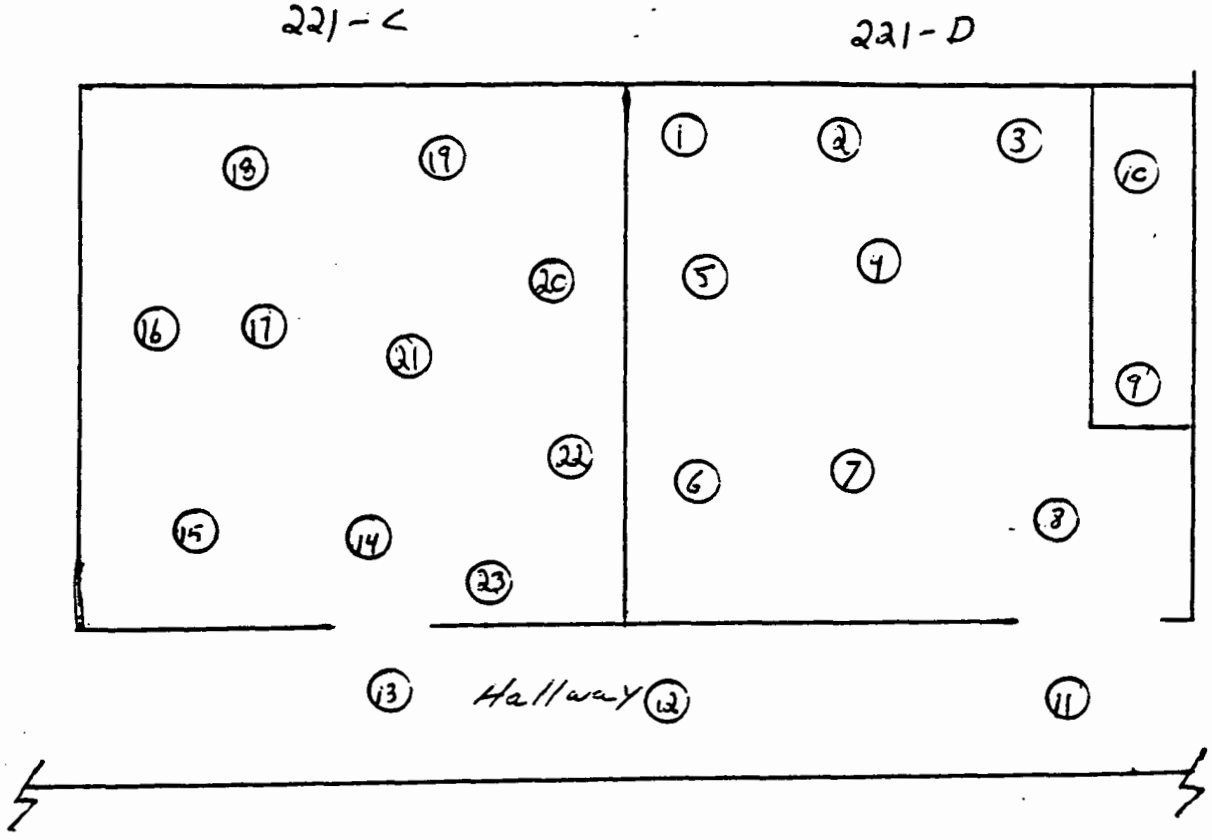
W-1
W-23 P1

RADIOLOGICAL SURVEY DATA SHEET

Page 1 of 3

LOCATION: (BLDG./AREA/ROOM) DS Room 221-C + D	SURVEY NO. 98-M-07
PURPOSE: Lost Post Decon Survey	RWP NO. N/A
	DATE: 9-21-98
	TIME: 1400

MAP/DRAWING



COPY

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/100cm²

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
electra	5269/5383	12-24-98
	N	
	A	

[redacted]

HPs 8257	Date: 9-21-98
[redacted]	
HPs 5996	Date: 9-22-98

ML-9620 (2-98)

RADIOLOGICAL SURVEY DATA SHEET (cont.)

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
1				Floor
2				Floor
3				Floor
4				Floor
5				Floor
6				Floor
7				Floor
8				Floor
9				Work Bench
10				Work Bench
11				Floor
12				Floor
13				Floor
14				Floor
15				Floor
16				Floor
17				Floor
18				Floor
19				Floor
20				Floor
21				Floor
22				Floor
23				Floor

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

COMMENTS: Please see Attached for Tritium swear results

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.

Protocol #: 1 Name:Pw H3 #401393 22-Sep-98 01:01
Region A: LL-UL= 0.5-18.6 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region B: LL-UL= 2.0-18.6 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region C: LL-UL=40.0-2000 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
[illegible] = 2.00 QIP = tSIE/AEC ES Terminator = Count
T 98-M-07 [W1-W23] BELCHER 9-21-98 RLH
Conventional DPM
Nuclide 1 = 800
Luminescence Correction On

S#	TIME	LUM	FLAG	CPMA	CPMB	CPMC	tSIE	DPM1	2Sigma
-1	10.00	14	B	8.50	8.60	13.80	615.		0.00
0	2.00	1		387.00	365.40	0.00	609.	929.24	97.44
1	2.00	14		0.00	0.00	0.00	525.	0.00	0.00
2	2.00	20		0.00	0.00	0.00	398.	0.00	0.00
3	2.00	9		0.00	0.00	0.00	399.	0.00	0.00
4	2.00	24		0.00	0.00	0.00	422.	0.00	0.00
5	2.00	43		0.00	0.00	0.00	485.	0.00	0.00
6	2.00	7		0.00	0.00	0.00	409.	0.00	0.00
7	2.00	29		0.00	0.00	0.00	396.	0.00	0.00
8	2.00	3		9.00	8.40	0.00	430.	27.29	19.38
9	2.00	18		0.00	0.00	0.00	346.	0.00	0.00
10	2.00	0		0.00	0.00	0.00	341.	0.00	0.00
11	2.00	9		0.00	0.00	0.00	391.	0.00	0.00
12	2.00	6		0.50	0.00	0.00	382.	1.75	15.75
13	2.00	22		0.00	0.00	1.20	412.	0.00	0.00
14	2.00	6		0.50	0.40	2.80	427.	1.60	13.45
15	2.00	0		0.50	0.00	0.00	389.	1.72	15.96
16	2.00	27		0.00	0.00	0.10	396.	0.00	0.00
17	2.00	5		0.00	0.00	0.00	389.	0.00	0.00
18	2.00	0		0.00	0.00	0.00	435.	0.00	0.00
19	2.00	0		0.00	0.00	0.70	399.	0.00	0.00
20	2.00	8		0.00	0.00	0.70	414.	0.00	0.00
21	2.00	7		0.00	0.00	0.00	458.	0.00	0.00
22	2.00	11		0.00	0.00	0.00	480.	0.00	0.00
23	2.00	9		0.00	0.00	0.00	380.	0.00	0.00

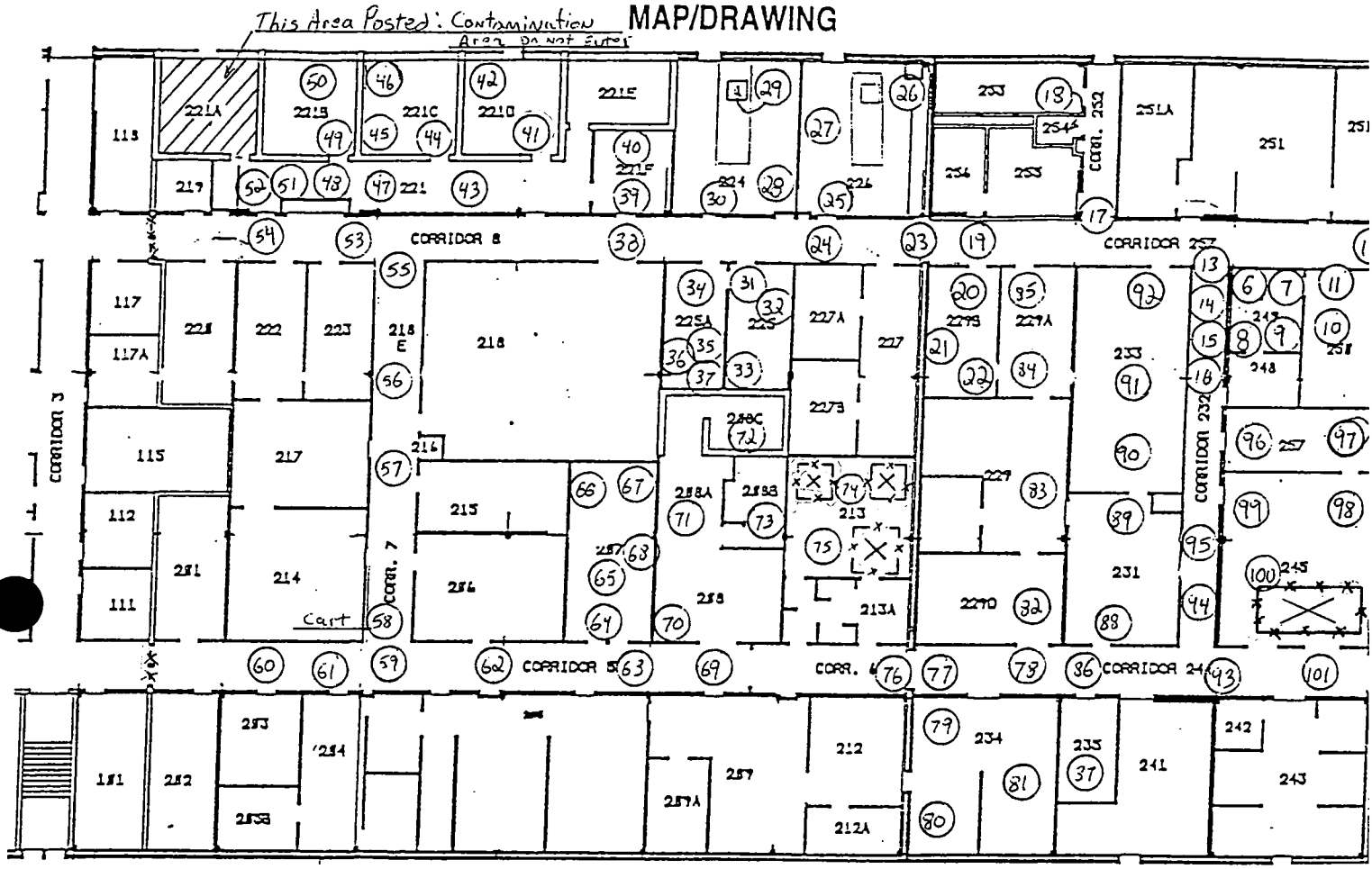
COPY

R-205 U1/U101

RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM) DS bldg.	SURVEY NO. 97-DS-029
PURPOSE: Job Coverage	RWP NO. SW-147-97
	DATE: 3-11-98
	TIME: 1400

MAP/DRAWING



* Smear ①-⑤ Taken in Room 125-B on Stains on Floor

[X] = Posted X-Ray

DS BLDG
FIRST FLOOR
BLDG CODE:3522

COPY

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/100cm²

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
N/A	N/A	N/A

[redacted] Date: 3-12-98

3957 Date: 03/11/98

[redacted] 60031 Date: 3-12-98

P-3

Protocol #: 3 Name:PW H3 401388 11-Mar-98 17:34
Region A: LL-UL= 0.5-18.6 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region B: LL-UL= 2.0-18.6 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region C: LL-UL=20.0-2000 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Time = 2.00 QIP = tSIE/AEC ES Terminator = Count
98-DS-029 BELCHER [U1-U101] 03-11-98 TAS
Conventional DPM
Nuclide 1 = 800
Luminescence Correction On

S#	TIME	CPMA	CPMB	CPMC	FLAG	LUM	tSIE	DPM1	2Sigma
-1	10.00	15.70	17.50	11.60	B	67	634.		0.00
0	2.00	1969.80	1867.00	9.90		1	651.	3716.80	257.82
1	2.00	0.00	0.00	2.90		29	404.	0.00	0.00
2	2.00	0.00	0.00	1.90		22	388.	0.00	0.00
3	2.00	0.00	0.00	0.00		43	458.	0.00	0.00
4	2.00	0.00	0.00	0.00		59	448.	0.00	0.00
5	2.00	0.00	0.00	0.00		64	422.	0.00	0.00
6	2.00	0.80	0.00	0.00		25	512.	1.71	16.74
7	2.00	0.00	0.00	0.00		46	505.	0.00	0.00
8	2.00	0.00	0.00	2.40		36	509.	0.00	0.00
9	2.00	0.00	0.00	2.90		100	514.	0.00	0.00
10	2.00	0.00	0.00	2.90		53	507.	0.00	0.00
11	2.00	0.00	0.00	0.90		45	546.	0.00	0.00
12	2.00	0.00	0.00	0.00		21	474.	0.00	0.00
13	2.00	1.30	0.00	0.40		11	425.	3.13	16.76
14	2.00	0.00	0.00	0.00		46	522.	0.00	0.00
15	2.00	0.00	0.00	1.90		26	441.	0.00	0.00
16	2.00	6.30	3.50	0.00		20	443.	14.72	19.88
17	2.00	1.80	0.00	2.90		6	447.	4.19	15.65
18	2.00	0.00	0.00	2.90		32	455.	0.00	0.00
19	2.00	0.00	0.00	3.40		36	499.	0.00	0.00
20	2.00	13.30	10.50	7.40		23	506.	28.65	21.42
21	2.00	0.00	0.00	0.90		16	468.	0.00	0.00
22	2.00	0.00	0.00	2.90		24	467.	0.00	0.00
23	2.00	0.30	0.00	0.00		23	528.	0.63	15.97
24	2.00	0.00	0.00	5.40		33	447.	0.00	0.00
25	2.00	0.00	0.00	0.00		25	389.	0.00	0.00
26	2.00	0.00	0.00	0.00		18	498.	0.00	0.00
27	2.00	12.80	11.00	0.00		55	287.	42.67	47.13
28	2.00	0.00	0.00	0.00		10	351.	0.00	0.00
29	2.00	0.30	0.00	0.00		20	400.	0.74	17.95
30	2.00	0.00	0.00	0.00		22	505.	0.00	0.00
31	2.00	0.00	0.00	2.40		16	308.	0.00	0.00
32	2.00	0.00	0.00	1.90		26	283.	0.00	0.00
33	2.00	0.00	0.00	6.40		25	326.	0.00	0.00
34	2.00	0.00	0.00	1.90		28	461.	0.00	0.00
35	2.00	0.30	0.00	1.40		27	489.	0.66	17.37
36	2.00	0.00	0.00	2.40		36	444.	0.00	0.00
37	2.00	0.00	0.00	3.40		18	494.	0.00	0.00
38	2.00	27.80	24.50	2.40		9	400.	69.09	26.56
39	2.00	4.80	2.50	0.00		21	448.	11.15	19.34
40	2.00	2.80	1.00	5.40		15	429.	6.68	17.73
41	2.00	529.30	493.00	2.40		2	460.	1209.53	106.95
42	2.00	0.00	0.00	0.00		17	332.	0.00	0.00
43	2.00	0.00	0.00	0.00		37	386.	0.00	0.00
44	2.00	0.00	0.00	1.90		28	381.	0.00	0.00

COPY

S#	TIME	CPMA	CPMB	CPMC	FLAG	LUM	tSIE	DPM1	2Sigma
45	2.00	15.30	15.00	0.90		52	324.	43.68	40.29
46	2.00	0.80	0.00	1.40		62	395.	2.00	29.70
47	2.00	7.80	8.50	0.40		50	440.	18.29	28.08
48	2.00	0.80	3.00	0.90		69	432.	1.90	31.92
49	2.00	23.30	42.50	3.40		82	372.	60.24	71.29
50	2.00	0.00	1.00	2.40		82	307.	0.00	0.00
51	2.00	0.00	0.00	5.90		23	375.	0.00	0.00
52	2.00	178.80	165.00	5.40		4	414.	437.02	57.41
53	2.00	3.80	1.50	0.90		26	467.	8.61	18.87
54	2.00	24.30	21.00	5.90		25	458.	55.65	27.34
55	2.00	19.30	19.00	7.40		30	445.	44.98	26.95
56	2.00	0.30	0.00	1.40		27	453.	0.69	18.20
57	2.00	3.30	0.00	0.90		15	439.	7.75	17.63
58	2.00	0.00	0.00	2.40		33	361.	0.00	0.00
59	2.00	1.30	0.00	0.00		46	492.	2.85	21.51
60	2.00	0.00	0.00	5.40		48	497.	0.00	0.00
61	2.00	3.80	0.50	2.90		14	385.	9.62	19.17
62	2.00	0.00	0.00	0.40		36	519.	0.00	0.00
63	2.00	0.00	0.00	1.40		32	463.	0.00	0.00
64	2.00	43.80	39.50	2.90		11	449.	101.54	29.37
65	2.00	0.00	0.00	0.40		17	401.	0.00	0.00
66	2.00	0.00	0.00	4.40		31	500.	0.00	0.00
67	2.00	0.00	0.00	0.00		17	348.	0.00	0.00
68	2.00	0.00	0.00	4.90		29	318.	0.00	0.00
69	2.00	0.00	0.00	0.00		54	430.	0.00	0.00
70	2.00	0.00	0.00	0.00		46	495.	0.00	0.00
71	2.00	0.00	0.00	2.40		6	571.	0.00	0.00
72	2.00	0.00	0.00	1.90		36	355.	0.00	0.00
73	2.00	0.00	0.00	6.40		21	438.	0.00	0.00
74	2.00	0.00	0.00	0.00		18	487.	0.00	0.00
75	2.00	0.00	0.00	1.90		67	444.	0.00	0.00
76	2.00	0.00	0.00	0.00		19	453.	0.00	0.00
77	2.00	0.00	0.00	0.00		17	430.	0.00	0.00
78	2.00	0.00	0.00	0.00		10	472.	0.00	0.00
79	2.00	1.80	0.00	0.00		14	390.	4.53	18.02
80	2.00	5.30	3.00	0.00		16	510.	11.35	16.92
81	2.00	0.00	0.00	0.40		14	358.	0.00	0.00
82	2.00	0.00	0.00	0.40		54	415.	0.00	0.00
83	2.00	0.00	0.00	1.40		22	415.	0.00	0.00
84	2.00	0.00	0.00	0.00		28	502.	0.00	0.00
85	2.00	10.30	7.00	0.90		8	463.	23.46	18.60
86	2.00	0.00	0.00	1.40		23	478.	0.00	0.00
87	2.00	0.00	0.00	0.00		14	348.	0.00	0.00
88	2.00	0.00	0.00	0.00		40	540.	0.00	0.00
89	2.00	0.00	0.00	1.40		27	468.	0.00	0.00
90	2.00	0.00	0.00	2.40		40	534.	0.00	0.00
91	2.00	0.00	0.00	0.90		6	510.	0.00	0.00
92	2.00	0.00	0.00	0.00		23	587.	0.00	0.00
93	2.00	0.00	0.00	6.90		24	348.	0.00	0.00
94	2.00	0.00	0.00	2.40		13	436.	0.00	0.00
95	2.00	0.00	0.00	4.40		43	603.	0.00	0.00
96	2.00	0.00	0.00	2.40		7	380.	0.00	0.00
97	2.00	0.00	0.00	0.00		44	467.	0.00	0.00
98	2.00	0.00	0.00	0.00		30	454.	0.00	0.00
99	2.00	1.30	0.00	2.40		6	495.	2.84	14.54
100	2.00	0.00	0.00	0.00		54	339.	0.00	0.00

S#	TIME	CPMA	CPMB	CPMC	FLAG	LUM	tSIE	DPM1	2Sigma
101	2.00	0.00	0.00	0.40		25	388.	0.00	0.00

COPY

Contamination Found in DS Building

DS Building is a 47,810-ft2 building used for metrology, explosives production, and development in support of defense programs. For the purpose of Site Characterization, surveys began on October 22, 1996. The survey protocol is based on the DOE-MB Radiological Protection Position Determination, Release of Materials, May 1, 1996.

Item Number	Date	Room	Item Description	Levels (dpm/100 cm2)	Status
1	11/05/96	221A	Cabinet shelf	2.9 million dpm; tritium	Room posted as Controlled Area/RBA/RMA cabinet posted as High Contamination Area
2	10/29/96	218	Channel Locks (first item found)	3000 dpm alpha - fixed	Bagged/tagged - moved to RMA in M- Bldg.
3	10/29/96	215	Punch Press	2,378 dpm tritium	Room posted as Controlled Area and RMA.
		215	Rotary Motor	800 dpm alpha - fixed	same as above
	10/29/96		100% survey of lab and process equipment		
4	11/5/96	212	Box of electrical tools	20,000 dpm tritium	Bagged/tagged - moved to RMA in 221A
5	10/14/96	123	6000 gauges were being surveyed for release by Rad Ops. 1 of 458 (sampling size)	2,200 dpm tritium	Item re-surveyed. Results less than 1000 dpm. Lot released.
6	11/05/96	201	Sources in switches. Part of equipment.	Cs-137; Ni-63	Bagged/tagged - moved to RMA in 221A
7	11/07/96	205	Test circuit board	107,238 dpm tritium	Bagged/tagged - moved to RMA in 221A (Originally in rm. 126)
8	11/06/96	209	Metal stand - Counter Lab type	10,000 dpm tritium	Bagged/tagged - moved to RMA in 221A
9	11/07/96	201	Feather duster/foxtail brush	1,271 dpm tritium	Bagged/tagged - moved to RMA in 221A

Item Number	Date	Room	Item Description	Levels (dpm/100 cm2)	Status
10	11/07/96	126A	pH Probes - 4	2,400 dpm beta/gamma	Sent to gamma spec.
11	11/11/96	205	Metal cart	651 dpm; alpha; fixed	Bagged/tagged - moved to RMA in 221A
12	11/12/96	221F	Counter top	1528 dpm; alpha; fixed 123 dpm; beta; fixed	Posted counter as Controlled Area/RMA
13	11/12/96	221C	Welding electrode	6159 dpm; beta; fixed 424 dpm; alpha; fixed	Sent to gamma spec. Gamma spec determined tungsten.
14	11/13/96	221B	Wooden crate	2127 dpm; tritium	Moved to 221A
15	11/13/96	135	Four filaments	2700 dpm alpha; fixed 6000 dpm; beta; fixed	Gamma spec determined tungsten and 72 dpm alpha loose due to Th-232.
16	11/13/96	135	Power supply	2176 dpm, tritium	Bagged/tagged - moved to 221A
	11/14/96		Instructed to post DS Bldg.		
17	11/14/96	135	Trash can	1010 dpm tritium	Bagged/tagged - moved to 221A
18	11/14/96	224	Box of metal parts	2070 dpm tritium	Re-survey individual components
19		226	Roll around cart	2819 dpm; beta; loose	Wrapped/tagged - moved to 221A; evaluating post
20		226	Two power cords	1729 dpm; tritium	Bagged/tagged - moved to 221A
21	11/18/96	224	Re-survey of individual components in box of metal parts - 15 items	105,858 dpm; tritium - highest	Bagged/tagged to be moved to 221A; room is 100% surveyed
22	11/18/96	226	Regulator	1729 dpm; tritium	Bagged/tagged - moved to 221A
23		226	Power Supply	3185 dpm; tritium	Bagged/tagged - moved to 221A
24	11/26/96	106	500 lb weights - 2	147 dpm & 102 dpm; alpha; fixed	Labeled as FCA.

Item Number	Date	Room	Item Description	Levels (dpm/100 cm2)	Status
25	12/04/96	103	Two drawers from two different cabinets.	1- 1,333 tritium - loose 2 - 22 dpm alpha - loose	Drawers bagged/tagged - moved to 221 A. The count room results for the drawer with alpha was < 20 dpm.
26	12/04/96	103	Two drawers from two different cabinets.	1 - 1,940 tritium - loose 2 - 26 dpm alpha, loose and 398 fixed alpha	Drawers bagged/tagged - moved to 221A.
27	12/04/96	109B	Cabinet door	1,000 dpm alpha - loose 8,768 dpm alpha - fixed 1,090 dpm beta - fixed	Smear was alpha & gamma spec. indicating Am 241 and Pu 238. Door has been removed, bagged/tagged - moved to 221A.
28	12/04/96	109B	Box of standards - weights.	200 dpm alpha - fixed 3,000 dpm beta - fixed	Bagged/tagged - moved to 221A.
29	12/09/96	109C	Floor	10,804 dpm tritium - loose	Posted as contamination area. Decon and deposited.
30	12/09/96	109C	Metrology scale	409 dpm alpha - fixed	Bagged/tagged - moved to 221A.
31	12/09/96	133	Photometer	41,000 dpm beta - fixed	Bagged/tagged - sent to gamma spec.
32	12/10/96	109B	Cabinet drawer	2,392 dpm - tritium	Bagged/tagged - moved to 221A
33	12/16/96	109C	Mettler scale	2,333 dpm - tritium	Bagged/labeled/posted RMA
34	12/17/96	110	Floor	1,114 dpm - tritium	Posted as CA
35	12/19/96	110	Keyboard	1,758 dpm - tritium	Bagged/tagged - moved to 221A
36	01/07/97	107	Wooden Box Top	150 dpm alpha - fixed	Bagged/tagged - moved to 221A
37	01/13/97	107A	Floor	1,000 dpm - tritium	Posted as CA
38	01/22/97	125	Metal and plastic assembly	1,095 dpm - tritium	Bagged/tagged - moved to 221A
39	01/22/97	125	Bulletin Board	5,274 dpm - tritium	Posted as CA
40	01/29/97	111	Floor	4,072 dpm - tritium	Posted as CA

Item Number	Date	Room	Item Description	Levels (dpm/100 cm2)	Status
41	01/29/97	116	Floor	4,648 dpm - tritium	Posted as CA
42	02/03/97	118	Computer monitor	350 dpm alpha - fixed	Tagged - moved to 221A
43	02/04/97	127A	Trash can	2,415 dpm - tritium	Bagged/tagged - moved to 221A
44	02/04/97	214	Plexiglass shelving	2,056 dpm - tritium	Bagged/tagged - moved to 221A
45	02/04/97	217	Constant Temp. Chamber	9,177 dpm - tritium	Posted as CA
	02/05/97	217	Re-survey of Constant Temp. Chamber	116,083 dpm - tritium	Previously posted as CA
46	02/05/97	214	Door handle	2,498 dpm - tritium	Posted as CA
47	02/05/97	222	Cabinet	12,801 dpm - tritium	Posted as CA
48	02/05/97	222	Air supply vent	5,000 dpm - tritium	Posted as CA
49	02/05/97	222	Floor	4,818 dpm - tritium	Posted as CA
50	02/10/97	220	Floor	18,478 dpm - tritium	Posted as CA
51	02/10/97	119A	Floor - Broom closest	1,241 dpm - tritium	Posted as CA
52	02/10/97	223	Floor	23,331 dpm - tritium	Posted as CA
53	02/13/97	235	Step stool	1,913 dpm - tritium	Moved to 221A
54	02/13/97	250	Computer software	30 dpm - alpha loose	Posted as CA
55	02/13/97	250	Bags of waste - 11	330 dpm - alpha loose	Posted as CA
56	02/18/97	250	Trash can	1,345 dpm - tritium	Posted as CA
57	02/18/97	251	Floor	40 dpm alpha - loose	Area posted as CA
58	02/18/97	251	Bottom of Scale	300 dpm alpha - fixed	Within previously posted area

Supplement 1

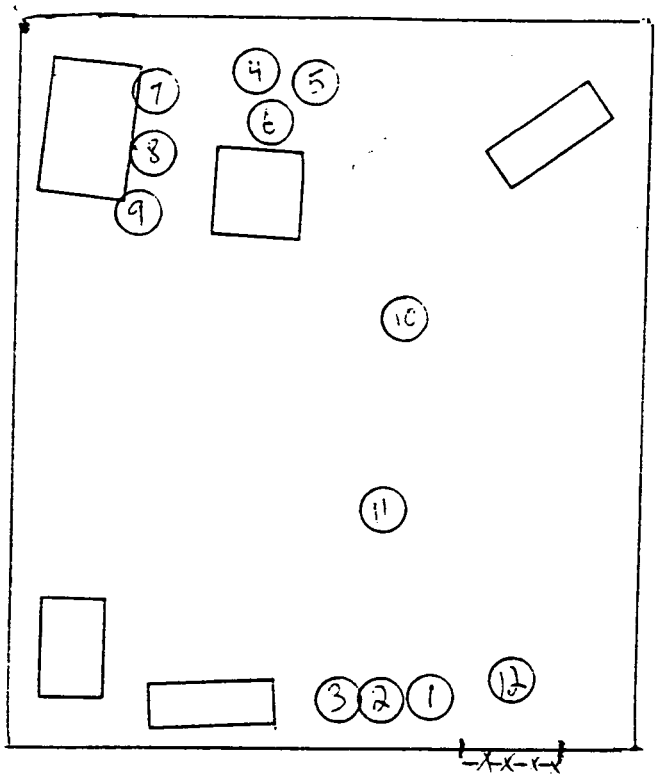
Appendix G

K-206 6/16/12

RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM) DS 221-A	SURVEY NO. 98-DS-40
PURPOSE: Post Decon	RWP NO. SW-142-97
	DATE: 3-25-98
	TIME: 1300

MAP/DRAWING



* This Room is Posted Contamination Area Do Not Enter

LEGEND: # = mrem/hr (γ) whole body
# E = mrem/hr (β+η+γ) extremity on contact
xxx = Posted Area Boundry
(#) = mrem/hr neutron
[#] = air sample number
(#) = swipe number
(#/α) or /β = direct cont. measurement in dpm/100cm²

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
N/A	N/A	N/A

Completed by: (Signature/HP#)	Date:
Blain Belcher (Blain W Belcher)	3-25-98
Counted by: (Signature/HP#)	Date:
Dorothine McQueen 6031	03/25/98
[redacted]	Date: 3-30-98

ML-9620 (8-97)

Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Aqua
Data file name: SMEAR041
Batch Ended: 3/25/98 15:28

Alpha activity action level (DPM): 20
Beta activity action level (DPM): 200

Certainty level for MDA and flags: 95%

Crosstalk correction performed.

Batch ID: T 98-DS-40 BELCHER [12] 03-25-98 JM

Recalibration Date: 2/2/99
Serial Number: 26966-1

Detector ID	Sample ID	Alpha Activity			Beta Activity		
		DPM	σ	flags	DPM	σ	flags
A1	1	0.00	2.19	<MDA	0.00	1.41	<MDA
A2	2	0.00	2.13	<MDA	0.00	1.50	<MDA
A3	3	0.00	1.94	<MDA	0.00	1.33	<MDA
A4	4	0.00	1.97	<MDA	1.48	2.56	<MDA
B1	5	1.76	2.08	<AL	1.70	2.39	<MDA
B2	6	1.76	2.00	<AL	0.00	1.41	<MDA
B3	7	0.00	1.91	<MDA	3.69	2.75	<AL
B4	8	0.00	1.90	<MDA	0.00	1.94	<MDA
C1	9	0.00	2.26	<MDA	4.24	2.84	<AL
C2	10	0.00	2.22	<MDA	3.97	3.11	<AL
C3	11	0.00	1.96	<MDA	0.00	1.20	<MDA
C4	12	1.66	1.99	<AL	2.34	2.24	<MDA

26 Mar 98 18:01 ALPHA/BETA - 1.01 Page #1
Protocol #: 2 PW H3 403728 User : 3950

5-30-98

Time: 2.00
Mode: DPM Nuclide: SMVIAL Quench Set: SMVIAL
Background Subtract: 1st Vial

	LL	UL	LCR	2S%	BKG
Region A:	0.5 -	18.6	0	0.0	8.80
Region B:	2.0 -	18.6	0	0.0	7.00
Region C:	40.0 -	2000	0	0.0	10.50

Quench Indicator: tSIE/AEC
Ext Std Terminator: Count
T 98-DB-40 BELCHER [81-812] 03-26-98 JM
Luminescence Correction On
Coincidence Time(ns): 16
Delay Before Burst(ns): Normal
Protocol Data Filename: c:\data\PROT2.DAT
Count Data Filename: c:\data\SDATA2.DAT
Spectrum Data Drive & Path: c:\data

S#	TIME	CPMA	LUM	FLAG	tSIE	DPM1	2Sigma	CPMC
-1	10.00	8.80	23	B	612.39		0.00	10.50
0	2.00	1549.70	0	E	648.09	3080.91	213.56	0.00
1	2.00	12.20	0		639.79	24.08	13.54	0.00
2	2.00	16.70	0		592.78	33.79	15.21	0.00
3	2.00	14.70	0		630.23	29.11	14.32	1.00
4	2.00	15.20	0		493.68	34.42	16.54	0.00
5	2.00	12.20	0		556.47	25.57	14.38	0.00
6	2.00	1.20	0		468.62	2.78	11.49	0.00
7	2.00	3.20	0		318.14	9.60	16.03	0.00
8	2.00	0.00	0		318.77	0.00	0.00	3.00
9	2.00	0.20	0		395.84	0.51	12.19	3.50
10	2.00	31.70	0		564.75	65.79	19.59	1.50
11	2.00	19.20	0		546.56	40.89	16.75	0.00
12	2.00	8.70	0		573.46	17.91	12.99	0.00

Appendix H

Radon Summary/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

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	Monid	Dupid	Install Date	Retrieve Date	Comments
	21		ABOVE AIR SAMPLER	161.1	125.0	1670055	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
		SM	19 MID EAST WALL	4.8		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		1670051		12/13/89	2/19/90	
		OLD SO BLDG	BASEMENT RIGHT CABINET	2.0		1661595		12/14/89	2/19/90	
	55		1 BELOW THERMOSTAT 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	
	998	FIRE STATION	ROOM 002 EQUIPMENT ROOM WITH SUMP	1.0		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		1661519		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		1670060		12/12/89	2/19/90	
	37		6 NORTH WALL	1.0		1670046		12/12/89	2/19/90	
	34		34 A WEST WALL	.9	.6	1672062	1672042	12/12/89	2/19/90	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		1670029		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		1670039		1/15/90	2/19/90	
		T	153	.8		1670067		1/15/90	2/19/90	
		T	78	.9		1670077		1/15/90	2/19/90	
		T	38	.9		1661508		1/15/90	2/19/90	
	105	PARTS MACHINING BUILDING	STAIRWELL NEXT TO ROOM 127	.9		1661564		12/12/89	2/19/90	
	25	ARAC	3 ON BOOK CASE MIDDLE	.8		1671314		12/16/89	2/19/90	
	60		1 ON DOOR TO ROOM 3	.8		1670049		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		1670068		12/13/89	2/16/90	
		SM	8 WEST WALL AT OLD RECOVERY	.8		1672057		12/11/89	2/16/90	
		WD BLDG	WD 8	.8		1670045		12/18/89	2/16/90	
	87		124	.8		1670032		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	1666532	12/15/89	2/19/90	
	22		RM 1 EAST CORRIDOR ON STORAGE RACK	.7		1670070		12/13/89	2/19/90	
	56	FIRE PUMP HOUSE	ROOM 1 THERE IS ONLY 1 ROOM	.7		1670066		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		1670040		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		1670016		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	
	96	FIRE STATION	ROOM 114 OORM	.6		1661507		12/12/89	2/19/90	
		COS	NW STAIRWELL AT BASEMENT LEVEL	.6		1672086		12/14/89	2/19/90	
		OSH	120 C	.6		1661573		12/12/89	2/16/90	
		SM	150 WEST END GAS BOX	.6		1670043		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	

a	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	1660533	1660816	12/13/89	2/16/90	
	101		ROOM 5 ON SOUTH WEST WALL IN OFFSET	.5		1671208		12/12/89	2/19/90	
		"B" 175	175 WEST WALL	.5		1670048		12/12/89	2/16/90	
	36		ELECTRICAL PANEL RM IN ELECTRONICS	.5		1670062		12/12/89	2/19/90	
	40		100	.6		1654480		12/13/89	2/16/90	
	43		1 EAST WALL OVER WATER DISPENSER	.5		1670076		12/12/89	2/20/90	
	44		ON BULLETTIN BOARD	.5		1670047		12/12/89	2/16/90	
	47		102 MIDDLE OF EAST WALL	.5		1670059		12/12/89	2/16/90	
	50		CELL 113	.5		1661502		12/13/89	2/19/90	
	79		CENTRAL HALLWAY WEST OF DOOR TO RM7	.5		1661605		12/18/89	2/16/90	
	89		101 NEAR BACK CORNER BY ROOF DRAIN	.5		1670079		12/15/89	2/19/90	
	91		1ST FLOOR	.5		1661525		12/15/89	2/16/90	
	91		2ND FLOOR OUTSIDE RM215	.5		1661593		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		1661572		12/14/89	2/16/90	
		A	1080 WEST WALL	.5		1661580		12/14/89	2/16/90	
		COS	119 N WALL NEAR PUNCH PRESS	.5		1654456		12/12/89	2/19/90	
		COS	319 WALL CABINET TO RIGHT OF SINK	.5		1661590		12/12/89	2/19/90	
		E BUILDING	159 WEST WALL	.5		1670033		12/14/89	2/16/90	
		E BUILDING	103 WEST WALL	.6		1670072		12/14/89	2/16/90	
		E ANNEX	E 212 NORTH WALL	.5		1661587		12/19/89	2/16/90	
		GH BUILDING	ROOM 2	.5		1670065		12/12/89	2/16/90	
		GP 81	1A MIDDLE OF WEST WALL	.5		1670054		12/12/89	2/19/90	
		H BLDG	ROOM 127	.5		1661571		12/12/89	2/16/90	
		HH	HH-8	.5		1671269		12/19/89	2/19/90	
		I BUILDING	BASEMENT LEFT CRAWL SPACE DOOR	.5		1671260		12/12/89	2/19/90	
		N BUILDING	N 108	.5		1670056		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	
		OSM	4HT FLOOR	.5		1670020		12/12/89	2/16/90	
		OSE	CORR 212 SOUTH WALL NEAR 210 DOOR	.5		1670036		12/15/89	2/16/90	
		OSM	319	.5		1670069		12/13/89	2/16/90	
		OSM	2ND FLOOR	.5		1661611		12/12/89	2/16/90	
		POWER HOUSE PH-1	STATIONARY BOARD CORNER	.5		1670073		12/12/89	2/19/90	
		R BUILDING	145 WEST WALL ABOVE BALANCE	.5		1654538		12/14/89	2/16/90	
		SM/R TRITIUM COMPLEX	128 OVER LARGE METAL FLOOR DISC	.5		1670019		12/12/89	2/16/90	
		W BLDG	W135 WEST CENTRAL WALL	.5		1671293		12/12/89	2/16/90	
		WD BLDG	WDA 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		1670027		12/15/89	2/16/90	
	TF-2		114 EAST WALL CENTER OF ROOM	.4		1670064		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		1670017		12/12/89	2/19/90	
	27		CELL 8 - WALL	.4		1661583		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		1661570		12/14/89	2/19/90	
	39		BREAK RM	.4		1670050		12/14/89	2/19/90	
	42		101 B EAST WALL	.4		1670031		12/13/89	2/19/90	

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	
	48		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		170 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	
		M BUILDING	M 21 WEST WALL	.4		1678057		12/15/89	2/20/90	
		POWER HOUSE PH-1	OFFICE SUPERVISOR	.4		1678035		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

Appendix I

Asbestos Summary/Information

Appendix J

Lead Summary/Information

DLZ Laboratories, Inc.

ENVIRONMENTAL TESTING • COMPLIANCE ANALYSES
INDUSTRIAL HYGIENE

MATT UELEN
BABCOCK & WILCOX OF OHIO, INC.
P.O. BOX 3000, BLDG A-273
MIAMISBURG, OH 45343

Lab Number: SL17335-1
Report Date: 03/12/98
DLZ Project Number: 8667-01

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
98030920	Solid	CLIENT	09 MAR 98	09 MAR 98

CONSTITUENT	RESULT	*PQL	UNITS	METHOD	ANALYZED	BY
Metals Prep	0.86		g	3050A	03-11-98	DBL
Lead, Total	0.01	0.002	Percent	6010A	03-11-98	RLP

* Practical Quantitation Limit

DLZ Laboratories, Inc.

ENVIRONMENTAL TESTING • COMPLIANCE ANALYSES
INDUSTRIAL HYGIENE

MATT UELEN
BABCOCK & WILCOX OF OHIO, INC.
P.O. BOX 3000, BLDG A-273
MIAMISBURG, OH 45343

Lab Number: SL17335-2
Report Date: 03/12/98
DLZ Project Number: 8667-01

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
98030921	Solid	CLIENT	09 MAR 98	09 MAR 98

CONSTITUENT	RESULT	*PQL	UNITS	METHOD	ANALYZED	BY
Metals Prep	1.76		g	3050A	03-11-98	DBL
Lead, Total	0.02	0.001	Percent	6010A	03-11-98	RLP

* Practical Quantitation Limit

DLZ Laboratories, Inc.

ENVIRONMENTAL TESTING • COMPLIANCE ANALYSES
INDUSTRIAL HYGIENE

MATT UELEN
BABCOCK & WILCOX OF OHIO, INC.
P.O. BOX 3000, BLDG A-273
MIAMISBURG, OH 45343

Lab Number: 3L17335-3
Report Date: 03/12/98
DLZ Project Number: 8667-01

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
98030922	Solid	CLIENT	09 MAR 98	09 MAR 98

CONSTITUENT	RESULT	*PQL	UNITS	METHOD	ANALYZED	BY
Metals Prep	0.21		g	3050A	03-11-98	DBL
Lead, Total	0.03	0.01	Percent	6010A	03-11-98	RLP

* Practical Quantitation Limit

DLZ Laboratories, Inc.

ENVIRONMENTAL TESTING • COMPLIANCE ANALYSES
INDUSTRIAL HYGIENE

MATT UELEN
BABCOCK & WILCOX OF OHIO, INC.
P.O. BOX 3000, BLDG A-273
MIAMISBURG, OH 45343

Lab Number: SL17335-4
Report Date: 03/12/98
DLZ Project Number: 8667-01

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
98030923	Solid	CLIENT	09 MAR 98	09 MAR 98

CONSTITUENT	RESULT	*PQL	UNITS	METHOD	ANALYZED	BY
Metals Prep	0.51		g	3050A	03-11-98	DBL
Lead, Total	0.11	0.005	Percent	6010A	03-11-98	RLP

* Practical Quantitation Limit

DLZ Laboratories, Inc.

ENVIRONMENTAL TESTING • COMPLIANCE ANALYSES
INDUSTRIAL HYGIENE

MATT UELEN
BABCOCK & WILCOX OF OHIO, INC.
P.O. BOX 3000, BLDG A-273
MIAMISBURG, OH 45343

Lab Number: SL17335-5
Report Date: 03/12/98
DLZ Project Number: 8667-01

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
98030924	Solid	CLIENT	09 MAR 98	09 MAR 98

CONSTITUENT	RESULT	*PQL	UNITS	METHOD	ANALYZED	BY
Metals Prep	0.52		g	3050A	03-11-98	DBL
Lead, Total	0.04	0.003	Percent	6010A	03-11-98	RLP

* Practical Quantitation Limit

DLZ Laboratories, Inc.

ENVIRONMENTAL TESTING • COMPLIANCE ANALYSES
INDUSTRIAL HYGIENE

MATT UELEN
BABCOCK & WILCOX OF OHIO, INC.
P.O. BOX 3000, BLDG A-273
MIAMISBURG, OH 45343

Lab Number: SL17335-6
Report Date: 03/12/98
DLZ Project Number: 8667-01

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
98030925	Solid	CLIENT	09 MAR 98	09 MAR 98

CONSTITUENT	RESULT	*PQL	UNITS	METHOD	ANALYZED	BY
Metals Prep	0.83		g	3050A	03-11-98	DBL
Lead, Total	<0.003	0.003	Percent	6010A	03-11-98	RLP

* Practical Quantitation Limit

DLZ Laboratories, Inc.

ENVIRONMENTAL TESTING • COMPLIANCE ANALYSES
INDUSTRIAL HYGIENE

MATT UELEN
BABCOCK & WILCOX OF OHIO, INC.
P.O. BOX 3000, BLDG A-273
MIAMISBURG, OH 45343

Lab Number: SL17335-7
Report Date: 03/12/98
DLZ Project Number: 8667-01

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE/TIME	RECEIVED
98030926	Solid	CLIENT	09 MAR 98	09 MAR 98

CONSTITUENT	RESULT	*PQL	UNITS	METHOD	ANALYZED	BY
Metals Prep	0.32		g	3050A	03-11-98	DBL
Lead, Total	0.03	0.008	Percent	6010A	03-11-98	RLP

* Practical Quantitation Limit

DLZ Laboratories, Inc.

ENVIRONMENTAL TESTING • COMPLIANCE ANALYSES
INDUSTRIAL HYGIENE

MATT UELEN
BABCOCK & WILCOX OF OHIO, INC.
P.O. BOX 3000, BLDG A-273
MIAMISBURG, OH 45343

Lab Number: SL17335
Report Date: 03/12/98
DLZ Project Number: 8667-01

I certify that the data presented as part of this report meets the minimum quality assurance standards specified in the referenced analytical method(s). Based on my review of the data, I believe that the submitted information is true, accurate, complete and meets the minimum standards specified in 40 CFR 136, 40 CFR 763, and/or SW-846. Any exceptions encountered in the analysis of samples contained within this report have been noted and an assessment of the quality of the data is presented. I am aware that there are significant penalties for submitting with knowledge, false information, including the possibility of fines and/or imprisonment.

DLZ Laboratories, Inc.

Quality Control Manager

Appendix K

Chemical History

INVENTORY REPORT

DATE:03/23/98
PAGE: 1

LOCATION: CANAL-TRAI

CHEMICAL	CONTAINER ID	STATUS	Quantity	Units	Container Description
ALCOHOL, ISOPROPYL	VI980851	PROCESS	0.00	OUNCE (LIQ)	BOTTLE, PLASTIC
CLEANER, WINDOW	VI980853	PROCESS	0.50	GALLON	BOTTLE, PLASTIC
CLEANER, WINDOW	VI980854	PROCESS	0.25	GALLON	BOTTLE, PLASTIC
GEMCHLOR	VI980852	PROCESS	2.00	GALLON	BOTTLE, PLASTIC
P-10 GAS	CI980001	PROCESS	1.00	EACH	CYLINDER, COMPRESSED GAS
P-10 GAS	CI980002	PROCESS	1.00	EACH	CYLINDER, COMPRESSED GAS
ULTIMA GOLD	CI962415	PROCESS	5.00	LITER	BOTTLE, PLASTIC

DATE:03/23/98
PAGE: 1

LOCATION: DS-103

CHEMICAL	CONTAINER ID	STATUS	Quantity	Units	Container Description
ALCOHOL, ETHYL	CI973002	PROCESS	0.75	GALLON	BOTTLE, PLASTIC
ALCOHOL, ETHYL	CI973003	PROCESS	1.00	GALLON	BOTTLE, PLASTIC
ALCOHOL, ISOPROPYL	CI960463	PROCESS	500.00	MILLILITER	BOTTLE, PLASTIC
ANTI STATIC SOLUTION	VI981058	PROCESS	48.00	OUNCE (LIQ)	BOTTLE, PLASTIC
ANTI STATIC SPRAY	VI980443	PROCESS	3.00	OUNCE (LIQ)	CAN, AEROSOL
BENZOL TRIAZOLE	VI981156	EXCESS	12.00	MILLILITER	BOTTLE, PLASTIC
CASTONIE	CI04400	PROCESS	2.50	POUND	CAN, OTHER
CEMENT, RUBBER	VI981159	EXCESS	4.00	OUNCE (LIQ)	BOTTLE, PLASTIC
CLEANER	VI981161	EXCESS	11.00	GRAM	BOTTLE, PLASTIC
CLEANER, CARPET	VI981152	EXCESS	150.00	MILLILITER	BOTTLE, PLASTIC
CLEANER, GRANITE	VI981051	PROCESS	64.00	OUNCE (LIQ)	BOTTLE, PLASTIC
CLEANER, GRANITE	VI981052	PROCESS	32.00	OUNCE (LIQ)	BOTTLE, PLASTIC
CLEANER, GRANITE	VI981053	PROCESS	32.00	OUNCE (LIQ)	BOTTLE, PLASTIC
CLEANER, GRANITE	VI981054	PROCESS	32.00	OUNCE (LIQ)	BOTTLE, PLASTIC
CLEANER, MAGNETIC HEAD	CI04424	EXCESS	15.00	GRAM	BOTTLE, GLASS
CLEANER, STAINLESS STEEL	CI980436	PROCESS	11.50	OUNCE (LIQ)	CAN, AEROSOL
CLEANER, STAINLESS STEEL	VI980434	PROCESS	6.50	OUNCE (LIQ)	CAN, AEROSOL
CLEANER, STAINLESS STEEL	VI980435	PROCESS	21.50	OUNCE (LIQ)	CAN, AEROSOL
CLEANER, STAINLESS STEEL	VI980436	PROCESS	11.50	OUNCE (LIQ)	CAN, AEROSOL
CLEANER, STAINLESS STEEL	VI980437	PROCESS	21.50	OUNCE (LIQ)	CAN, AEROSOL
CLEANER, STAINLESS STEEL	VI980438	PROCESS	13.50	OUNCE (LIQ)	CAN, AEROSOL
CLEANER, STAINLESS STEEL	VI980439	PROCESS	21.50	OUNCE (LIQ)	CAN, AEROSOL
CLEANER, STAINLESS STEEL	VI980440	PROCESS	21.50	OUNCE (LIQ)	CAN, AEROSOL
CLEANER, STAINLESS STEEL	VI980441	PROCESS	21.50	OUNCE (LIQ)	CAN, AEROSOL
CLEANER, STAINLESS STEEL	VI981157	EXCESS	0.50	OUNCE (LIQ)	CAN, AEROSOL
CLEANER, STAINLESS STEEL	VI981158	EXCESS	0.50	OUNCE (LIQ)	CAN, AEROSOL
CLEANING LIQUID	VI981056	PROCESS	8.00	OUNCE (LIQ)	CAN, AEROSOL
CLEANING SOLUTION	VI981057	PROCESS	48.00	OUNCE (LIQ)	BOTTLE, PLASTIC
CLEANING SOLUTION	VI981081	PROCESS	7.00	OUNCE (LIQ)	BOTTLE, PLASTIC
CORROSION SUPPRESSANT	VI980401	PROCESS	13.00	OUNCE (LIQ)	CAN, AEROSOL
CORROSION SUPPRESSANT	VI980402	PROCESS	13.00	OUNCE (LIQ)	CAN, AEROSOL
CORROSION SUPPRESSANT	VI980403	PROCESS	7.00	OUNCE (LIQ)	CAN, AEROSOL
CORROSION SUPPRESSANT	VI980404	PROCESS	3.00	OUNCE (LIQ)	CAN, AEROSOL
CORROSION SUPPRESSANT	VI980405	PROCESS	64.00	OUNCE (LIQ)	CAN, AEROSOL
CORROSION SUPPRESSANT	VI980406	PROCESS	64.00	OUNCE (LIQ)	CAN, AEROSOL
CURING LIQUID	VI981055	PROCESS	8.00	OUNCE (LIQ)	CAN, OTHER
DISINFECTANT DEODORANT	CI04430	PROCESS	4.00	OUNCE (LIQ)	CAN, AEROSOL
ELECTROLYTE	VI981083	PROCESS	16.00	OUNCE (LIQ)	BOTTLE, PLASTIC
ELECTROLYTE	VI981086	PROCESS	10.00	OUNCE (LIQ)	BOTTLE, PLASTIC
ELECTROLYTE	VI981087	PROCESS	10.00	OUNCE (LIQ)	BOTTLE, PLASTIC
ELECTROLYTE	VI981088	PROCESS	10.00	OUNCE (LIQ)	BOTTLE, PLASTIC
ELECTROLYTE	VI981089	PROCESS	10.00	OUNCE (LIQ)	BOTTLE, PLASTIC
ELECTROLYTE	VI981090	PROCESS	10.00	OUNCE (LIQ)	BOTTLE, PLASTIC
EPOXY CEMENT	VI981080	PROCESS	23.00	GRAM	TUBE, OTHER
FACSIMILE	CI04398	PROCESS	1.00	POUND	BOTTLE, PLASTIC
FACSIMILE	CI04399	PROCESS	2.00	POUND	BOTTLE, PLASTIC
GAGE BLOCK PRESERVATIVE	VI981065	PROCESS	9.50	OUNCE (LIQ)	CAN, AEROSOL
GAGE BLOCK PRESERVATIVE	VI981066	PROCESS	5.50	OUNCE (LIQ)	CAN, AEROSOL
GREASE	CI04410	PROCESS	4.00	OUNCE (LIQ)	CAN, OTHER

LOCATION: DS-103

CHEMICAL	CONTAINER ID	STATUS	Quantity	Units	Container Description
GREASE	V1980444	PROCESS	14.50	OUNCE (LIQ)	CAN, AEROSOL
GREASE, INHIBITING	V1981073	PROCESS	1.00	OUNCE (LIQ)	TUBE, OTHER
GREASE, INHIBITING	V1981074	PROCESS	1.00	OUNCE (LIQ)	TUBE, OTHER
GREASE, INHIBITING	V1981075	PROCESS	1.00	OUNCE (LIQ)	TUBE, OTHER
GREASE, INHIBITING	V1981076	PROCESS	1.00	OUNCE (LIQ)	TUBE, OTHER
GREASE, INHIBITING	V1981077	PROCESS	1.00	OUNCE (LIQ)	TUBE, OTHER
GREASE, LUBRICATING	CI04417	PROCESS	6.00	OUNCE (LIQ)	CAN, AEROSOL
INK, STAMP	V1981079	PROCESS	1.00	OUNCE (LIQ)	BOTTLE, GLASS
LINT AND DUST REMOVER	V1980442	PROCESS	3.00	OUNCE (LIQ)	CAN, AEROSOL
MARKER, METAL	CI04415	PROCESS	4.00	OUNCE (LIQ)	TUBE, OTHER
MARKER, METAL	V1990416	PROCESS	4.00	OUNCE (LIQ)	TUBE, OTHER
MARKER, METAL	V1980417	PROCESS	4.00	OUNCE (LIQ)	TUBE, OTHER
MARKER, METAL	V1981066	PROCESS	4.00	OUNCE (LIQ)	TUBE, OTHER
MARKER, METAL	V1981069	PROCESS	4.00	OUNCE (LIQ)	TUBE, OTHER
NEUTRALIZER	V1981084	PROCESS	16.00	OUNCE (LIQ)	BOTTLE, PLASTIC
NEUTRALIZER	V1981085	PROCESS	10.00	OUNCE (LIQ)	BOTTLE, PLASTIC
OIL	CI04435	PROCESS	0.25	GALLON	CAN, AEROSOL
OIL	V1981160	EXCESS	50.00	MILLILITER	BOTTLE, PLASTIC
OIL, HOUSEHOLD	CI04395	PROCESS	1.00	OUNCE (LIQ)	CAN, AEROSOL
OIL, HOUSEHOLD	CI04396	PROCESS	3.00	OUNCE (LIQ)	CAN, AEROSOL
OIL, HOUSEHOLD	V1980418	PROCESS	2.00	OUNCE (LIQ)	CAN, AEROSOL
OIL, HOUSEHOLD	V1980419	PROCESS	3.00	OUNCE (LIQ)	CAN, AEROSOL
OIL, HOUSEHOLD	V1980420	PROCESS	1.00	OUNCE (LIQ)	CAN, AEROSOL
OIL, HOUSEHOLD	V1980421	PROCESS	3.00	OUNCE (LIQ)	CAN, AEROSOL
OIL, HOUSEHOLD	V1980422	PROCESS	3.00	OUNCE (LIQ)	CAN, AEROSOL
OIL, HOUSEHOLD	V1980423	PROCESS	3.00	OUNCE (LIQ)	CAN, AEROSOL
OIL, HOUSEHOLD	V1980424	PROCESS	3.00	OUNCE (LIQ)	CAN, AEROSOL
OIL, HOUSEHOLD	V1980425	PROCESS	2.00	OUNCE (LIQ)	CAN, AEROSOL
OIL, HOUSEHOLD	V1980426	PROCESS	3.00	OUNCE (LIQ)	CAN, AEROSOL
OIL, HOUSEHOLD	V1980427	PROCESS	3.00	OUNCE (LIQ)	CAN, AEROSOL
OIL, HOUSEHOLD	V1980428	PROCESS	2.00	OUNCE (LIQ)	CAN, AEROSOL
OIL, HOUSEHOLD	V1980429	PROCESS	3.00	OUNCE (LIQ)	CAN, AEROSOL
OIL, HOUSEHOLD	V1981072	PROCESS	3.00	OUNCE (LIQ)	CAN, OTHER
OIL, INSTRUMENT	V1980431	PROCESS	1.25	OUNCE (LIQ)	CAN, AEROSOL
OIL, INSTRUMENT	V1980432	PROCESS	1.25	OUNCE (LIQ)	CAN, AEROSOL
OIL, INSTRUMENT	V1980433	PROCESS	1.25	OUNCE (LIQ)	CAN, AEROSOL
OIL, LUBRICATING	V1980430	PROCESS	8.00	OUNCE (LIQ)	CAN, AEROSOL
OIL, LUBRICATING	V1981067	PROCESS	8.00	OUNCE (LIQ)	CAN, AEROSOL
OPTICAL CLEANSING FORMULA	V1981059	PROCESS	16.00	OUNCE (LIQ)	BOTTLE, PLASTIC
OPTICAL CLEANSING FORMULA	V1981060	PROCESS	16.00	OUNCE (LIQ)	BOTTLE, PLASTIC
OPTICAL CLEANSING FORMULA	V1981061	PROCESS	18.00	OUNCE (LIQ)	BOTTLE, PLASTIC
OPTICAL CLEANSING FORMULA	V1981062	PROCESS	16.00	OUNCE (LIQ)	BOTTLE, PLASTIC
OPTICAL CLEANSING FORMULA	V1981063	PROCESS	12.00	OUNCE (LIQ)	BOTTLE, PLASTIC
OPTICAL CLEANSING FORMULA	V1981064	PROCESS	12.00	OUNCE (LIQ)	BOTTLE, PLASTIC
OPTICAL CLEANSING FORMULA	V1981082	PROCESS	16.00	OUNCE (LIQ)	BOTTLE, PLASTIC
OPTICAL CLEANSING FORMULA	V1981155	EXCESS	0.00	MILLILITER	BOTTLE, PLASTIC
PENETRANT	CI04460	PROCESS	1.00	OUNCE (LIQ)	CAN, AEROSOL
POLISH, METAL LUSTER	CI04411	EXCESS	0.00	OUNCE (LIQ)	BOTTLE, PLASTIC
POLISH, METAL LUSTER	V1981091	PROCESS	18.00	OUNCE (LIQ)	BOTTLE, PLASTIC
POLISH, METAL LUSTER	V1981092	PROCESS	16.00	OUNCE (LIQ)	BOTTLE, PLASTIC
POLISH, METAL LUSTER	V1981093	PROCESS	16.00	OUNCE (LIQ)	BOTTLE, PLASTIC
POLISH, METAL LUSTER	V1981094	PROCESS	16.00	OUNCE (LIQ)	BOTTLE, PLASTIC
POLISH, METAL LUSTER	V1981095	PROCESS	16.00	OUNCE (LIQ)	BOTTLE, PLASTIC
POLISH, METAL LUSTER	V1981096	PROCESS	18.00	OUNCE (LIQ)	BOTTLE, PLASTIC
POLISH, METAL LUSTER	V1981097	PROCESS	16.00	OUNCE (LIQ)	BOTTLE, PLASTIC
POLISH, METAL LUSTER	V1981098	PROCESS	6.00	OUNCE (LIQ)	BOTTLE, PLASTIC
POLISH, METAL LUSTER	V1981099	PROCESS	8.00	OUNCE (LIQ)	BOTTLE, PLASTIC
POLISH, METAL LUSTER	V1981100	PROCESS	8.00	OUNCE (LIQ)	BOTTLE, PLASTIC
POLISH, METAL LUSTER	V1981154	EXCESS	2.00	MILLILITER	BOTTLE, PLASTIC
PRUSSIAN BLUE	V1981078	PROCESS	0.75	OUNCE (LIQ)	TUBE, OTHER

LOCATION: DS-103

CHEMICAL	CONTAINER ID	STATUS	Quantity	Units	Container Description
RELEASE AGENT	CI04446	PROCESS	60.00	MILLILITER	BOTTLE, OTHER
RUST PREVENTING LUBRICANT	VI980446	PROCESS	64.00	OUNCE (LIQ)	CAN, AEROSOL
RUST PREVENTING LUBRICANT	VI980447	PROCESS	64.00	OUNCE (LIQ)	CAN, AEROSOL
RUST PREVENTING LUBRICANT	VI980448	PROCESS	64.00	OUNCE (LIQ)	CAN, AEROSOL
SEPARATOR	CI04402	PROCESS	2.00	GALLON	BOTTLE, GLASS
SEPARATOR	CI04447	PROCESS	2.00	GALLON	BOTTLE, GLASS
SEPARATOR	VI981163	EXCESS	10.00	MILLILITER	BOTTLE, GLASS
SILICA GEL	VI981161	EXCESS	18.00	POUND	CAN, OTHER
SILICON CARBIDE	CI04408	PROCESS	14.00	OUNCE (LIQ)	CAN, AEROSOL
SILICON CARBIDE	CI04409	PROCESS	13.00	GRAM	CAN, OTHER
SILICONE SPRAY	CI04423	PROCESS	8.00	OUNCE (LIQ)	CAN, AEROSOL
SPRA-LUBE	CI04420	PROCESS	4.00	OUNCE (LIQ)	CAN, AEROSOL
SURFACE PLATE CLEANER	VI980413	PROCESS	16.00	OUNCE (LIQ)	CAN, AEROSOL
SURFACE PLATE CLEANER	VI980414	PROCESS	16.00	OUNCE (LIQ)	CAN, AEROSOL
SURFACE PLATE CLEANER	VI980415	PROCESS	6.00	OUNCE (LIQ)	CAN, AEROSOL
SURFACE PROTECTION SPRAY	CI04432	PROCESS	12.00	OUNCE (LIQ)	CAN, AEROSOL
TETRAFLUOROMETHANE	CI963592	PROCESS	12.00	OUNCE (LIQ)	
TYPE CLEANER	VI980688	EXCESS	3.00	OUNCE (LIQ)	TUBE, OTHER
UNKNOWN GAS CYLINDER	CI04429	PROCESS	64.00	OUNCE (LIQ)	CAN, AEROSOL
UNKNOWN GAS CYLINDER	CI04436	PROCESS	4.00	OUNCE (LIQ)	CAN, AEROSOL
UNKNOWN GAS CYLINDER	CI04437	PROCESS	24.00	OUNCE (LIQ)	CAN, AEROSOL
UNKNOWN GAS CYLINDER	CI04438	PROCESS	32.00	OUNCE (LIQ)	CAN, AEROSOL
UNKNOWN GAS CYLINDER	VI980407	PROCESS	2.00	OUNCE (LIQ)	CAN, AEROSOL
UNKNOWN GAS CYLINDER	VI980408	PROCESS	9.00	OUNCE (LIQ)	CAN, AEROSOL
UNKNOWN GAS CYLINDER	VI980409	PROCESS	6.00	OUNCE (LIQ)	CAN, AEROSOL
UNKNOWN GAS CYLINDER	VI980411	PROCESS	3.00	OUNCE (LIQ)	CAN, AEROSOL
UNKNOWN GAS CYLINDER	VI980412	PROCESS	3.00	OUNCE (LIQ)	CAN, AEROSOL
UNKNOWN GAS CYLINDER	VI980449	PROCESS	48.00	OUNCE (LIQ)	CAN, AEROSOL
UNKNOWN GAS CYLINDER	VI980450	PROCESS	64.00	OUNCE (LIQ)	CAN, AEROSOL
WHITE GREASE	VI981070	PROCESS	10.00	OUNCE (LIQ)	TUBE, OTHER
WHITE GREASE	VI981071	PROCESS	10.00	OUNCE (LIQ)	TUBE, OTHER

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LOCATION: DS-106

CHEMICAL	CONTAINER ID	STATUS	Quantity	Units	Container Description
ALCOHOL, ETHYL 190 PROOF	CI973001	PROCESS	1.00	GALLON	BOTTLE, PLASTIC
ALCOHOL, ETHYL 190 PROOF	CI973004	PROCESS	1.00	GALLON	BOTTLE, PLASTIC
ALCOHOL, ETHYL 190 PROOF	CI973006	PROCESS	1.00	GALLON	BOTTLE, PLASTIC
COATING	CI06372	EXCESS	13.00	OUNCE (LIQ)	CAN, AEROSOL
COATING	CI06373	EXCESS	13.00	OUNCE (LIQ)	CAN, AEROSOL
COATING	CI06374	EXCESS	13.00	OUNCE (LIQ)	CAN, AEROSOL
COATING	CI06376	EXCESS	13.00	OUNCE (LIQ)	CAN, AEROSOL
COATING	CI06377	EXCESS	13.00	OUNCE (LIQ)	CAN, AEROSOL
COATING	CI06378	EXCESS	13.00	OUNCE (LIQ)	CAN, AEROSOL
COATING	CI06379	EXCESS	13.00	OUNCE (LIQ)	CAN, AEROSOL

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LOCATION: DS-109B

CHEMICAL	CONTAINER ID	STATUS	Quantity	Units	Container Description
ACETONE	CI970098	PROCESS	500.00	MILLILITER	BOTTLE, GLASS
ACETONE	CI970099	PROCESS	500.00	MILLILITER	BOTTLE, GLASS
ALCOHOL, ETHYL 190 PROOF	CI06365	PROCESS	0.50	GALLON	CAN, OTHER
ALCOHOL, ETHYL 190 PROOF	CI06366	PROCESS	0.50	GALLON	CAN, OTHER
BUFFING ROUGE	CI06361	PROCESS	3.75	OUNCE (LIQ)	TUBE, OTHER
CEMENT	VI981129	PROCESS	1.75	OUNCE (LIQ)	TUBE, OTHER
DRAKEOL	CI06364	PROCESS	5.00	GALLON	CAN, OTHER
POLISH, MET-ALL ALUMINUM	VI981128	PROCESS	2.50	OUNCE (LIQ)	TUBE, OTHER
POLISH, METAL LUSTER	VI961127	PROCESS	16.00	OUNCE (LIQ)	BOTTLE, PLASTIC
UNKNOWN GAS CYLINDER	CI06368	PROCESS	12.00	OUNCE (LIQ)	CAN, OTHER

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LOCATION: DS-110

CHEMICAL	CONTAINER ID	STATUS	Quantity	Units	Container Description
ALCOHOL, ETHYL 200 PROOF	CI973205	PROCESS	1.00	GALLON	BOTTLE, PLASTIC
CIRCUIT COOLER	VI980678	EXCESS	15.75	OUNCE (LIQ)	CAN, OTHER

LOCATION: DS-110

CHEMICAL	CONTAINER ID	STATUS	Quantity	Units	Container Description
CIRCUIT COOLER	VI980679	PROCESS	16.75	OUNCE (LIQ)	CAN, OTHER
CIRCUIT COOLER	VI980680	PROCESS	16.75	OUNCE (LIQ)	CAN, OTHER
CIRCUIT COOLER	VI980681	PROCESS	16.75	OUNCE (LIQ)	CAN, OTHER
CIRCUIT COOLER	VI980682	PROCESS	16.75	OUNCE (LIQ)	CAN, OTHER
CIRCUIT COOLER	VI980683	PROCESS	16.75	OUNCE (LIQ)	CAN, OTHER
DRAKEOL	VI980684	PROCESS	26.00	GALLON	CAN, OTHER
FREON TF	VI980676	PROCESS	16.00	OUNCE (LIQ)	CAN, OTHER
FREON TF	VI980677	PROCESS	16.00	OUNCE (LIQ)	CAN, OTHER
MICRO DUSTER	CI06440	PROCESS	341.00	GRAM	CAN, OTHER
OIL, 3 IN 1	VI980675	PROCESS	3.00	OUNCE (LIQ)	CAN, OTHER
UNKNOWN GAS CYLINDER	VI980674	PROCESS	12.00	OUNCE (LIQ)	CAN, OTHER
UNKNOWN GAS CYLINDER	WM001758	PROCESS	9.00	OUNCE (LIQ)	CAN, OTHER

LOCATION: DS-115

CHEMICAL	CONTAINER ID	STATUS	Quantity	Units	Container Description
CURING LIQUID	VI981138	EXCESS	0.13	GALLON	CAN, OTHER
GAGE BLOCK PRESERVATIVE	VI981140	EXCESS	9.50	OUNCE (LIQ)	CAN, OTHER
INK, BLACK	VI981133	PROCESS	4.00	OUNCE (LIQ)	BOTTLE, PLASTIC
INK, BLACK	VI981134	PROCESS	4.00	OUNCE (LIQ)	BOTTLE, PLASTIC
INK, RED	VI981135	PROCESS	2.00	OUNCE (LIQ)	BOTTLE, PLASTIC
INK, RED	VI981136	PROCESS	2.00	OUNCE (LIQ)	BOTTLE, PLASTIC
INK, RED	VI981137	PROCESS	2.00	OUNCE (LIQ)	BOTTLE, PLASTIC
LEAK TEC	VI981130	EXCESS	4.00	OUNCE (LIQ)	BOTTLE, PLASTIC
LEAK TEC	VI981131	PROCESS	12.00	OUNCE (LIQ)	CAN, OTHER
LEAK TEC	VI981132	PROCESS	12.00	OUNCE (LIQ)	CAN, OTHER
LEAK TEC	VI981139	EXCESS	12.00	OUNCE (LIQ)	CAN, OTHER
OIL, INSTRUMENT	VI981143	EXCESS	14.00	MILLILITER	TUBE, PLASTIC
STATIC NULL	CI04426	EXCESS	14.00	OUNCE (LIQ)	CAN, OTHER
SURFACE PLATE CLEANER	VI981141	EXCESS	1.00	GALLON	BOTTLE, PLASTIC

LOCATION: DS-122

CHEMICAL	CONTAINER ID	STATUS	Quantity	Units	Container Description
ACETONE	RAD04350	PROCESS	1.00	GALLON	BOTTLE, GLASS
ALCOHOL, ETHYL	C1 06505	PROCESS	250.00	MILLILITER	BOTTLE, PLASTIC
ALCOHOL, ETHYL	C1 06506	PROCESS	250.00	MILLILITER	BOTTLE, PLASTIC
ALCOHOL, ETHYL	C1 06531	PROCESS	1000.00	MILLILITER	BOTTLE, GLASS
ALCOHOL, ETHYL	C1 06532	PROCESS	1000.00	MILLILITER	BOTTLE, PLASTIC
ALCOHOL, ETHYL	C1 06549	PROCESS	200.00	MILLILITER	BOTTLE, PLASTIC
COPPER BRITE	C1 06515	PROCESS	1000.00	MILLILITER	BOTTLE, PLASTIC
COPPER BRITE	C1 06516	PROCESS	1000.00	MILLILITER	BOTTLE, PLASTIC
COPPER BRITE	C1 06517	PROCESS	1000.00	MILLILITER	BOTTLE, GLASS
COPPER BRITE	C1 06518	PROCESS	1.00	GALLON	BOTTLE, PLASTIC
SOLUTION, FAST-PROTO TINNING	C1 06524	PROCESS	250.00	MILLILITER	BOTTLE, PLASTIC
WD-40	C1 06540	PROCESS	9.00	OUNCE (LIQ)	CAN, AEROSOL

LOCATION: DS-123

CHEMICAL	CONTAINER ID	STATUS	Quantity	Units	Container Description
ARGON	CI971987	PROCESS	36.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
ARGON	CI971988	PROCESS	36.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
ARGON	VI980657	PROCESS	36.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
CARBON MONOXIDE/AIR	VI980660	EXCESS	27.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
CARBON MONOXIDE/AIR	VI980671	PROCESS	27.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
CARBON MONOXIDE/NITROGEN	CI500152	PROCESS	29.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
CARBON MONOXIDE/NITROGEN	CI500153	PROCESS	29.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
CARBON MONOXIDE/NITROGEN	CI500154	PROCESS	29.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
CARBON MONOXIDE/NITROGEN	CI501433	PROCESS	26.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
CARBON MONOXIDE/NITROGEN	CI950262	PROCESS	27.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
CARBON MONOXIDE/NITROGEN	CI951261	PROCESS	27.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
CARBON MONOXIDE/NITROGEN	CI960436	PROCESS	27.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
CARBON MONOXIDE/NITROGEN	CI960436	PROCESS	27.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
CARBON MONOXIDE/NITROGEN	CI960664	PROCESS	27.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
CARBON MONOXIDE/NITROGEN	CI960665	PROCESS	27.00	CUBIC FEET	CYLINDER, COMPRESSED GAS

LOCATION: DS-123

CHEMICAL	CONTAINER ID	STATUS	Quantity	Units	Container Description
CARBON MONOXIDE/NITROGEN	VI980672	PROCESS	27.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
METHANE/AIR	VI980667	PROCESS	27.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
METHANE/AIR	VI980669	PROCESS	27.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
METHANE/AIR	VI980670	PROCESS	27.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
METHANE/NITROGEN	VI980653	PROCESS	27.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
METHANE/NITROGEN	VI980659	PROCESS	27.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
NITROGEN	CI500484	PROCESS	32.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
NITROGEN	CI950328	PROCESS	32.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
NITROGEN	CI962419	PROCESS	90.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
NITROGEN	CI970868	PROCESS	30.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
NITROGEN	CI970869	PROCESS	27.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
NITROGEN	VI980652	PROCESS	8.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
NITROGEN-WATER	CI970070	PROCESS	28.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
OXYGEN\ARGON	CI971985	PROCESS	28.00	MILLILITER	CYLINDER, COMPRESSED GAS
OXYGEN\ARGON	CI971986	PROCESS	27.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
OXYGEN\ARGON	VI980656	PROCESS	27.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
OXYGEN\ARGON	VI980658	PROCESS	27.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
OXYGEN\ARGON	VI980664	PROCESS	27.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
OXYGEN\ARGON	VI980666	PROCESS	27.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
OXYGEN\NITROGEN	VI980651	PROCESS	27.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
OXYGEN\NITROGEN	VI980654	PROCESS	27.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
OXYGEN\NITROGEN	VI980655	PROCESS	27.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
OXYGEN\NITROGEN	VI980661	PROCESS	27.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
OXYGEN\NITROGEN	VI980662	PROCESS	27.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
OXYGEN\NITROGEN	VI980663	PROCESS	27.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
OXYGEN\NITROGEN	VI980665	PROCESS	27.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
OXYGEN\NITROGEN	VI980668	PROCESS	27.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
OXYGEN\NITROGEN	WM006425	PROCESS	31.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
OXYGEN\NITROGEN	WM006426	PROCESS	31.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
UNKNOWN GAS CYLINDER	CI961507	PROCESS	6.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
UNKNOWN GAS CYLINDER	CI963562	PROCESS	29.00	CUBIC FEET	CYLINDER, COMPRESSED GAS

LOCATION: DS-124

CHEMICAL	CONTAINER ID	STATUS	Quantity	Units	Container Description
AJAX	RAD04341	PROCESS	21.00	OUNCE (DRY)	CAN, CARDBOARD
AJAX	RAD04342	PROCESS	21.00	OUNCE (DRY)	CAN, CARDBOARD
AJAX	RAD04343	PROCESS	21.00	OUNCE (DRY)	CAN, CARDBOARD
ANTIFOAM 80	C1 06597	PROCESS	1.00	GALLON	BOTTLE, PLASTIC
CLEANER	RAD04339	PROCESS	0.25	GALLON	BOTTLE, PLASTIC
CLEANER, CONQUEST	RAD04344	PROCESS	1.00	GALLON	BOTTLE, PLASTIC
COPPER BRITE	C1 06514	PROCESS	1.00	LITER	BOTTLE, PLASTIC
FERRIC CHLORIDE	C1 06513	PROCESS	250.00	MILLILITER	BOTTLE, GLASS
SODIUM CARBONATE	C1 06598	PROCESS	3.00	KILOGRAM	BOTTLE, PLASTIC
SODIUM CARBONATE	C1 06599	PROCESS	0.00	KILOGRAM	BOTTLE, PLASTIC
SODIUM CARBONATE	C1 06600	PROCESS	3.00	KILOGRAM	BOTTLE, PLASTIC
SODIUM CARBONATE	C1 06603	PROCESS	3.00	KILOGRAM	BOTTLE, PLASTIC
SODIUM CARBONATE	C1 06605	PROCESS	3.00	KILOGRAM	BOTTLE, PLASTIC
SODIUM CARBONATE	C1 06607	PROCESS	3.00	KILOGRAM	BOTTLE, PLASTIC
SODIUM CARBONATE	C1 06608	PROCESS	3.00	KILOGRAM	BOTTLE, PLASTIC
SODIUM CARBONATE	C1 06609	PROCESS	0.00	KILOGRAM	BOTTLE, PLASTIC
SODIUM CARBONATE	C1 06610	PROCESS	3.00	KILOGRAM	BOTTLE, PLASTIC
SODIUM CARBONATE	C1 06611	PROCESS	3.00	KILOGRAM	BOTTLE, PLASTIC
SODIUM CARBONATE	C1 06612	PROCESS	3.00	KILOGRAM	BOTTLE, PLASTIC
SODIUM CARBONATE	C1 06613	PROCESS	3.00	KILOGRAM	BOTTLE, PLASTIC

LOCATION: DS-126

CHEMICAL	CONTAINER ID	STATUS	Quantity	Units	Container Description
CLEANER	RAD04338	PROCESS	16.00	OUNCE (LIQ)	CAN, AEROSOL

LOCATION: DS-126A

CHEMICAL	CONTAINER ID	STATUS	Quantity	Units	Container Description
ACID, FERRIC CHLORIDE HYDROCLORIC	06322	PROCESS	6.00	GALLON	BOTTLE, PLASTIC

LOCATION: DS-126A

CHEMICAL	CONTAINER ID	STATUS	Quantity	Units	Container Description
ELECTRO BRITE	C1 06588	PROCESS	5.00	GALLON	BOTTLE, PLASTIC
ELECTRO BRITE	RAD04333	PROCESS	55.00	GALLON	DRUM, STEEL 55-GAL
FERRIC CHLORIDE	RAD04336	PROCESS	5.00	GALLON	BOTTLE, PLASTIC
LONCOTERGE	C1 06587	PROCESS	5.00	GALLON	BOTTLE, PLASTIC
NICKEL SULFAMATE	RAD04335	PROCESS	30.00	GALLON	DRUM, STEEL 55-GAL
SOLUTION, FERRIC CHLORIDE	RAD04334	PROCESS	55.00	GALLON	DRUM, STEEL 55-GAL

LOCATION: DS-126B

CHEMICAL	CONTAINER ID	STATUS	Quantity	Units	Container Description
FREON TF	C1 06580	PROCESS	16.00	OUNCE (LIQ)	CAN, AEROSOL
HIGH PURITY GOOP	C1 06584	PROCESS	1.00	OUNCE (DRY)	TUBE, SQUEEZE
OPAQUE RED	C1 06583	EXCESS	1.00	OUNCE (LIQ)	BOTTLE, GLASS
VACUUM GREASE	C1 06581	PROCESS	1.00	OUNCE (DRY)	BOTTLE, GLASS
WD-40	C1 06614	PROCESS	9.00	OUNCE (LIQ)	CAN, AEROSOL

LOCATION: DS-127

CHEMICAL	CONTAINER ID	STATUS	Quantity	Units	Container Description
ALCOHOL	CI04185	PROCESS	1.00	GALLON	BOTTLE, PLASTIC
ALCOHOL	CI960413	PROCESS	0.25	GALLON	BOTTLE, PLASTIC
ALCOHOL	CI960415	PROCESS	1.00	GALLON	BOTTLE, PLASTIC
ALCOHOL	CI960419	PROCESS	0.75	GALLON	BOTTLE, PLASTIC
ALCOHOL	CI962017	EXCESS	1.00	GALLON	BOTTLE, PLASTIC
ALCOHOL, ETHYL 190 PROOF	CI972998	PROCESS	1.00	GALLON	BOTTLE, PLASTIC
ALCOHOL, ETHYL 190 PROOF	CI972999	PROCESS	1.00	GALLON	BOTTLE, PLASTIC
ALCOHOL, ETHYL 190 PROOF	CI973000	PROCESS	1.00	GALLON	BOTTLE, PLASTIC
ALCOHOL, ETHYL 190 PROOF	CI973006	PROCESS	1.00	GALLON	BOTTLE, PLASTIC
ALCOHOL, ETHYL 200 PROOF	CI962007	EXCESS	1.00	GALLON	BOTTLE, PLASTIC
ALCOHOL, ETHYL 200 PROOF	CI962008	PROCESS	1.00	GALLON	BOTTLE, PLASTIC
ALCOHOL, ETHYL 200 PROOF	CI962009	EXCESS	1.00	GALLON	BOTTLE, PLASTIC
ALCOHOL, ETHYL 200 PROOF	CI962010	EXCESS	1.00	GALLON	BOTTLE, PLASTIC
ALCOHOL, ETHYL 200 PROOF	CI962011	EXCESS	1.00	GALLON	BOTTLE, PLASTIC
ALCOHOL, ETHYL 200 PROOF	CI962012	EXCESS	1.00	GALLON	BOTTLE, PLASTIC
ALCOHOL, ETHYL 200 PROOF	CI962013	PROCESS	0.50	GALLON	BOTTLE, PLASTIC
ALCOHOL, ETHYL 200 PROOF	CI962014	EXCESS	1.00	GALLON	BOTTLE, PLASTIC
ALCOHOL, ETHYL 200 PROOF	CI962015	PROCESS	1.00	GALLON	BOTTLE, PLASTIC
ARGON	CI971716	PROCESS	55.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
CARBON DIOXIDE	CI971713	PROCESS	90.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
OIL, 3 IN 1	VI980687	PROCESS	1.50	OUNCE (LIQ)	CAN, OTHER
UNKNOWN GAS CYLINDER	VI980685	PROCESS	5.00	OUNCE (LIQ)	CAN, AEROSOL
WD-40	VI980686	EXCESS	0.00	OUNCE (LIQ)	CAN, AEROSOL

LOCATION: DS-127A

CHEMICAL	CONTAINER ID	STATUS	Quantity	Units	Container Description
ELECTRO BRITE	CI06366	PROCESS	55.00	GALLON	DRUM, STEEL 55-GAL
ELECTRO BRITE	RAD04324	PROCESS	55.00	GALLON	DRUM, STEEL 55-GAL
FERRIC CHLORIDE	RAD04329	PROCESS	55.00	GALLON	DRUM, STEEL 55-GAL
PROPYLENE GLYCOL	CI04160	PROCESS	3.00	GALLON	CAN, METAL
PROPYLENE GLYCOL	CI04153	PROCESS	0.50	GALLON	CAN, METAL
SILICONE 210H	CI04149	PROCESS	0.50	GALLON	DRUM, PLASTIC 5-GAL
SILICONE 210H	CI960888	PROCESS	5.00	GALLON	DRUM, PLASTIC 5-GAL
SILICONE 210H	CI960889	PROCESS	5.00	GALLON	DRUM, PLASTIC 5-GAL

LOCATION: DS-134

CHEMICAL	CONTAINER ID	STATUS	Quantity	Units	Container Description
NITROGEN	CI962425	PROCESS	90.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
NITROGEN	CI971158	PROCESS	90.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
OIL, HYDRAULIC	CI04468	PROCESS	26.00	OUNCE (LIQ)	TUBE, PLASTIC

LOCATION: DS-135

CHEMICAL	CONTAINER ID	STATUS	Quantity	Units	Container Description
ACRYLIC SPRAY	CI06394	PROCESS	13.00	OUNCE (LIQ)	CAN, AEROSOL
ADHESIVE	VI981106	PROCESS	1.75	OUNCE (LIQ)	TUBE, OTHER
ADHESIVE, METAL	VI981109	PROCESS	1.00	OUNCE (LIQ)	BOTTLE, PLASTIC

LOCATION: DS-135

CHEMICAL	CONTAINER ID	STATUS	Quantity	Units	Container Description
AIRJET	CI06420	PROCESS	12.00	OUNCE (LIQ)	CAN, OTHER
AIRJET	CI06421	PROCESS	12.00	OUNCE (LIQ)	CAN, OTHER
AIRJET	CI06422	PROCESS	12.00	OUNCE (LIQ)	CAN, OTHER
AIRJET	CI06423	PROCESS	12.00	OUNCE (LIQ)	CAN, OTHER
AIRJET	CI06425	PROCESS	12.00	OUNCE (LIQ)	CAN, OTHER
AIRJET	CI06427	EXCESS	12.00	OUNCE (LIQ)	CAN, OTHER
AIRJET	CI06429	PROCESS	12.00	OUNCE (LIQ)	CAN, OTHER
ALCOHOL, ETHYL 200 PROOF	CI961696	PROCESS	1.00	GALLON	BOTTLE, PLASTIC
ALCOHOL, ETHYL 200 PROOF	CI961697	PROCESS	1.00	GALLON	BOTTLE, PLASTIC
ALCOHOL, ETHYL 200 PROOF	CI961698	PROCESS	1.00	GALLON	BOTTLE, PLASTIC
ALCOHOL, ETHYL 200 PROOF	CI973007	PROCESS	1.00	GALLON	BOTTLE, PLASTIC
ALCOHOL, ETHYL 200 PROOF	CI973008	PROCESS	1.00	GALLON	BOTTLE, PLASTIC
ALCOHOL, ETHYL 200 PROOF	CI973009	PROCESS	1.00	GALLON	BOTTLE, PLASTIC
ANTI STATIC AGENT	CI06403	PROCESS	8.00	OUNCE (LIQ)	BOTTLE, PLASTIC
ANTI STATIC AGENT	CI06404	PROCESS	8.00	OUNCE (LIQ)	BOTTLE, PLASTIC
ANTI STATIC AGENT	CI06464	PROCESS	4.00	OUNCE (LIQ)	BOTTLE, PLASTIC
ANTISTATIC, FREEZ-IT	CI500065	PROCESS	10.00	OUNCE (LIQ)	CAN, AEROSOL
BUFFER SOLUTION	VI981112	PROCESS	10.00	OUNCE (DRY)	BOX, OTHER
BUFFER SOLUTION	VI961113	PROCESS	10.00	OUNCE (DRY)	BOX, OTHER
BUFFER SOLUTION	VI981114	PROCESS	10.00	OUNCE (DRY)	BOX, OTHER
CEMENT, RUBBER	VI981104	PROCESS	4.00	OUNCE (LIQ)	BOTTLE, GLASS
CLEANER	CI06397	PROCESS	8.00	OUNCE (LIQ)	BOTTLE, PLASTIC
CLEANER, STAINLESS STEEL	CI06431	PROCESS	21.50	OUNCE (LIQ)	CAN, OTHER
CLEANER, STAINLESS STEEL	CI06432	PROCESS	21.50	OUNCE (LIQ)	CAN, OTHER
CUTTING COMPOUND	VI981108	PROCESS	0.13	GALLON	CAN, PLASTIC
DEEP GLOSS	VI981107	PROCESS	17.00	OUNCE (LIQ)	CAN, OTHER
DETERGENT	VI981126	PROCESS	4.00	POUND	BOX, CARDBOARD
DISODIUM HYDR. ST.	VI981122	EXCESS	4.00	OUNCE (DRY)	BOTTLE, GLASS
DUSTER	WM001766	EXCESS	341.00	GRAM	CAN, OTHER
ELECTROLYTE	VI981123	PROCESS	10.00	OUNCE (DRY)	BOTTLE, PLASTIC
ELECTROLYTE	VI981124	PROCESS	10.00	OUNCE (DRY)	BOTTLE, PLASTIC
ELECTROLYTE	VI981125	PROCESS	500.00	MILLILITER	BOTTLE, GLASS
FLUX	VI981118	EXCESS	3.00	OUNCE (LIQ)	BOTTLE, GLASS
FLUX, SOLDER	CI06393	PROCESS	1.00	POUND	CAN, PLASTIC
FLUX, SOLDER	CI06405	PROCESS	12.00	OUNCE (LIQ)	BOTTLE, PLASTIC
GLYCEROL	CI06460	PROCESS	1.00	GALLON	BOTTLE, PLASTIC
GREASE	CI06467	PROCESS	8.00	OUNCE (LIQ)	TUBE, OTHER
LIFT AWAY	CI06460	PROCESS	0.25	GALLON	BOTTLE, PLASTIC
LIFT AWAY	CI06461	PROCESS	0.25	GALLON	BOTTLE, PLASTIC
LIFT AWAY	CI06462	PROCESS	0.25	GALLON	BOTTLE, PLASTIC
LIFT AWAY	CI08468	PROCESS	0.25	GALLON	BOTTLE, PLASTIC
MERCURY	CI06466	EXCESS	2.00	OUNCE (LIQ)	BOTTLE, PLASTIC
MERCURY	CI06467	EXCESS	6.00	POUND	BOTTLE, PLASTIC
MERCURY	CI06468	PROCESS	6.00	POUND	BOTTLE, PLASTIC
MERCURY	CI06469	PROCESS	6.00	POUND	BOTTLE, PLASTIC
MERCURY	CI06470	PROCESS	6.00	POUND	BOTTLE, PLASTIC
MERCURY	CI08471	PROCESS	6.00	POUND	BOTTLE, PLASTIC
MERCURY	CI08472	PROCESS	6.00	POUND	BOTTLE, PLASTIC
MERCURY	CI06473	PROCESS	6.00	POUND	BOTTLE, PLASTIC
MERCURY	CI06474	PROCESS	6.00	POUND	BOTTLE, PLASTIC
MERCURY	CI06476	EXCESS	19.00	MILLILITER	BOTTLE, PLASTIC
MICRO DUSTER	CI04476	PROCESS	341.00	GRAM	CAN, OTHER
MICRO DUSTER	CI06433	PROCESS	341.00	GRAM	CAN, OTHER
MICRO DUSTER	CI06434	PROCESS	341.00	GRAM	CAN, OTHER
MICRO DUSTER	CI06436	PROCESS	341.00	GRAM	CAN, OTHER
MICRO DUSTER	CI08437	PROCESS	341.00	GRAM	CAN, OTHER
MICRO DUSTER	CI06438	PROCESS	341.00	GRAM	CAN, OTHER
MICRO DUSTER	CI08441	PROCESS	341.00	GRAM	CAN, OTHER
MICRO DUSTER	CI06442	PROCESS	341.00	GRAM	CAN, OTHER
MOLECULAR SIEVE	VI981110	PROCESS	1.50	POUND	CAN, OTHER

LOCATION: DS-135

CHEMICAL	CONTAINER ID	STATUS	Quantity	Units	Container Description
MONOPLEX DOS	CI06447	PROCESS	40.00	POUND	BOTTLE, PLASTIC
NITROGEN	CI962420	PROCESS	90.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
NITROGEN	CI962422	PROCESS	90.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
NITROGEN	CI962423	PROCESS	90.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
NITROGEN	CI971161	PROCESS	90.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
NITROGEN	CI971162	PROCESS	90.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
OIL, 3 IN 1	CI04480	EXCESS	3.00	OUNCE (LIQ)	CAN, OTHER
OIL, 3 IN 1	CI06483	PROCESS	3.00	OUNCE (LIQ)	CAN, OTHER
OIL, HE200 VACUUM PUMP	CI06445	PROCESS	1.00	GALLON	BOTTLE, PLASTIC
OIL, HYDRAULIC	CI06408	PROCESS	12.00	OUNCE (LIQ)	BOTTLE, PLASTIC
OIL, LUBRICATING	VI981103	PROCESS	4.00	OUNCE (LIQ)	CAN, OTHER
OIL, PUMP	CI06448	PROCESS	16.00	OUNCE (LIQ)	BOTTLE, PLASTIC
OXYGEN	CI04477	PROCESS	1150.00		CYLINDER, COMPRESSED GAS
PH RINSE	VI981116	PROCESS	10.00	OUNCE (DRY)	BOX, OTHER
PH STANDARD	VI981117	EXCESS	4.00	OUNCE (LIQ)	BOTTLE, GLASS
POLISH, METAL LUSTER	CI06396	PROCESS	16.00	OUNCE (LIQ)	BOTTLE, PLASTIC
POTASSIUM STD.	VI981120	EXCESS	4.00	OUNCE (DRY)	BOTTLE, GLASS
POTASSIUM STD.	VI981121	EXCESS	4.00	OUNCE (DRY)	BOTTLE, GLASS
PROPANE	CI04475	PROCESS	25.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
RUBBER METAL CEMENT	VI981102	PROCESS	2.00	OUNCE (LIQ)	BOTTLE, GLASS
SEALANT	VI981105	PROCESS	3.00	OUNCE (LIQ)	TUBE, OTHER
SILICONE OIL	CI06407	PROCESS	4.00	OUNCE (LIQ)	BOTTLE, PLASTIC
SILICONE OIL	CI06408	PROCESS	2.00	OUNCE (LIQ)	BOTTLE, PLASTIC
SODIUM BICARB. STD.	VI981118	EXCESS	4.00	OUNCE (DRY)	BOTTLE, GLASS
SODIUM CARBONATE STANDARD	VI981119	EXCESS	4.00	OUNCE (DRY)	BOTTLE, GLASS
SPINESSTIC 22	CI06453	PROCESS	1.00	GALLON	CAN, OTHER
SPINESSTIC 22	CI06454	PROCESS	1.00	GALLON	CAN, OTHER
SPINESSTIC 22	CI06455	PROCESS	1.00	GALLON	CAN, OTHER
SPINESSTIC 22	CI06456	PROCESS	1.00	GALLON	CAN, OTHER
SULFUR	CI06459	PROCESS	1.00	POUND	CAN, OTHER
TETRAFLUOROMETHANE	CI963587	PROCESS	12.00	OUNCE (LIQ)	CAN, OTHER
TETRAFLUOROMETHANE	CI963588	PROCESS	12.00	OUNCE (LIQ)	CAN, OTHER
TETRAFLUOROMETHANE	CI963589	PROCESS	12.00	OUNCE (LIQ)	CAN, OTHER
TETRAFLUOROMETHANE	CI963590	PROCESS	12.00	OUNCE (LIQ)	CAN, OTHER
TETRAFLUOROMETHANE	CI963591	PROCESS	12.00	OUNCE (LIQ)	CAN, OTHER
TETRAFLUOROMETHANE	CI963593	PROCESS	12.00	OUNCE (LIQ)	CAN, OTHER
TETRAFLUOROMETHANE	CI963594	PROCESS	12.00	OUNCE (LIQ)	CAN, OTHER
TETRAFLUOROMETHANE	CI963595	PROCESS	12.00	OUNCE (LIQ)	CAN, OTHER
TETRAFLUOROMETHANE	CI963596	PROCESS	12.00	OUNCE (LIQ)	CAN, OTHER
TETRAFLUOROMETHANE	CI963597	PROCESS	12.00	OUNCE (LIQ)	CAN, OTHER
TETRAFLUOROMETHANE	CI963598	PROCESS	12.00	OUNCE (LIQ)	CAN, OTHER
UNKNOWN GAS CYLINDER	CI06391	PROCESS	9.00	OUNCE (LIQ)	CAN, OTHER
UNKNOWN GAS CYLINDER	CI06392	PROCESS	9.00	OUNCE (LIQ)	CAN, OTHER
UNKNOWN GAS CYLINDER	CI06398	PROCESS	20.00	OUNCE (LIQ)	BOTTLE, PLASTIC
UNKNOWN GAS CYLINDER	CI06399	PROCESS	20.00	OUNCE (LIQ)	BOTTLE, PLASTIC
UNKNOWN GAS CYLINDER	CI06400	PROCESS	20.00	OUNCE (LIQ)	BOTTLE, PLASTIC
UNKNOWN GAS CYLINDER	CI06443	EXCESS	1.00	GALLON	BOTTLE, PLASTIC
UNKNOWN GAS CYLINDER	VI981111	PROCESS	5.30	OUNCE (LIQ)	TUBE, OTHER

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LOCATION: DS-215

CHEMICAL	CONTAINER ID	STATUS	Quantity	Units	Container Description
ARGON	CI600478	PROCESS	1.00	EACH	CYLINDER, COMPRESSED GAS
ARGON	CI600479	PROCESS	1.00	EACH	CYLINDER, COMPRESSED GAS
ARGON	CI600481	PROCESS	1.00	EACH	CYLINDER, COMPRESSED GAS
ARGON	CI600482	PROCESS	1.00	EACH	CYLINDER, COMPRESSED GAS
ARGON	CI961265	PROCESS	1.00	EACH	CYLINDER, COMPRESSED GAS
ARGON	CI961266	PROCESS	1.00	EACH	CYLINDER, COMPRESSED GAS
ARGON	CI961267		1.00	EACH	CYLINDER, COMPRESSED GAS
ARGON	CI972232	PROCESS	1.00	EACH	CYLINDER, COMPRESSED GAS
ARGON	CI972233	PROCESS	1.00	EACH	CYLINDER, COMPRESSED GAS

LOCATION: DS-215

CHEMICAL	CONTAINER ID	STATUS	Quantity	Units	Container Description
ARGON	CI972234	PROCESS	1.00	EACH	CYLINDER, COMPRESSED GAS

LOCATION: DS-243

CHEMICAL	CONTAINER ID	STATUS	Quantity	Units	Container Description
PENTANES	CI971462	EXCESS	1.00	OUNCE (LIQ)	
PENTANES	CI972573	PROCESS	1.00	EACH	
PENTANES	CI972574		1.00	EACH	

LOCATION: DS-DOCK

CHEMICAL	CONTAINER ID	STATUS	Quantity	Units	Container Description
ARGON	CI971715	PROCESS	90.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
CARBON DIOXIDE	CI961860	PROCESS	90.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
CARBON DIOXIDE	CI961861	PROCESS	90.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
CARBON DIOXIDE	CI971714	PROCESS	90.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
NITROGEN	CI962421	PROCESS	90.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
NITROGEN	CI962426	PROCESS	90.00	MILLILITER	CYLINDER, COMPRESSED GAS
NITROGEN	CI962428	PROCESS	90.00	MILLILITER	CYLINDER, COMPRESSED GAS
NITROGEN	CI970867	PROCESS	27.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
NITROGEN	CI971159	PROCESS	90.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
NITROGEN	CI971160	PROCESS	90.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
OXYGEN\NITROGEN	WM008508	PROCESS	90.00	CUBIC FEET	CYLINDER, COMPRESSED GAS
OXYGEN\NITROGEN	WM008509	PROCESS	90.00	CUBIC FEET	CYLINDER, COMPRESSED GAS

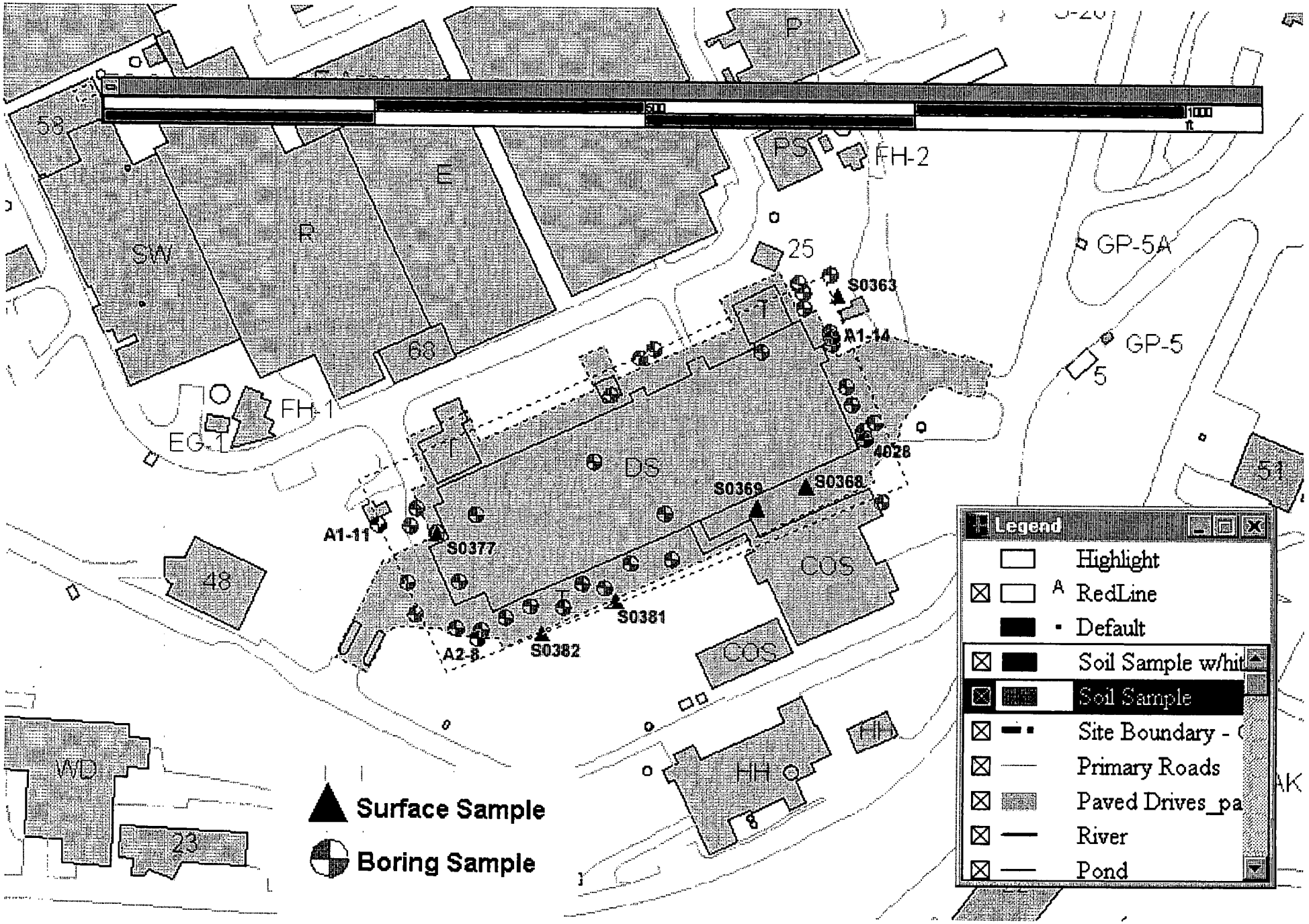
LOCATION: DS-SHED

CHEMICAL	CONTAINER ID	STATUS	Quantity	Units	Container Description
EM CONTAMINATED WASTE WATER	RAD04499	EXCESS	55.00	GALLON	DRUM, STEEL 55-GAL

Appendix L

Noted Soil Sampling, Vicinity

Appendix L (basic) sampling that exceeds *comparison values* are so noted on the spread sheet in the right-most column and with **bold** numbers in the "Measured Value" column. The constituent of concern can then be addressed in the Parameter Name attachment to the appendix. This attachment lists *comparison values* in its right-most column, and reference sources in its left-most column.



500
1000
ft
58
SW
R
E
68
FH-1
EG-1
P
PS
FH-2
25
GP-5A
GP-5
5
S0363
A1-14
4028
DS
S0369
S0368
A1-11
S0377
48
COS
S0381
A2-8
S0382
COS
HH
HH
WD
23
51
Surface Sample
Boring Sample
Legend
Highlight
RedLine
Default
Soil Sample w/hit
Soil Sample
Site Boundary -
Primary Roads
Paved Drives_pa
River
Pond

Location_n	Location_type	Collection_d	Media	Value_name	Cas_number	Measured_	Value_unit	Detection_	Chem_clas	Start_de	End_d	Depth	Project_code	
S0363	Surface location	19831001	Soil	Plutonium-238	13981-16-3	0.08	PCI/G	0.01	RAD	0	0	FT	RSS	
S0363	Surface location	19831001	Soil	Tritium	10028-17-8	24.84	PCI/ML		RAD	0	0	FT	RSS	
S0368	Surface location	19840801	Soil	Plutonium-238	13981-16-3	**1.22**	PCI/G	0.01	RAD	0	0	FT	RSS	Exceeds background value.
S0369	Surface location	19840801	Soil	Plutonium-238	13981-16-3	**0.15**	PCI/G	0.01	RAD	0	0	FT	RSS	Exceeds background value.
S0377	Surface location	19840801	Soil	Plutonium-238	13981-16-3	**4.02**	PCI/G	0.01	RAD	0	0	FT	RSS	Exceeds background value.
S0381	Surface location	19831001	Soil	Plutonium-238	13981-16-3	0.12	PCI/G	0.01	RAD	0	0	FT	RSS	
S0382	Surface location	19831001	Soil	Plutonium-238	13981-16-3	0.02	PCI/G	0.01	RAD	0	0	FT	RSS	
S0382	Surface location	19831001	Soil	Tritium	10028-17-8	3.43	PCI/ML		RAD	0	0	FT	RSS	
4028	Borehole	19940421	Other	1,1,2-Trichloro-1,2,2-trifluoroeth	76-13-1	25974	PPB		ORVOA	5	5	FT	SVROU2	
4028	Borehole	19940421	Other	Total VOC's	TVOC	25974	PPB		ORVOA	5	5	FT	SVROU2	
4028	Borehole	19940421	Other	1,1,2-Trichloro-1,2,2-trifluoroeth	76-13-1	49480.5	PPB		ORVOA	7.5	7.5	FT	SVROU2	
4028	Borehole	19940421	Other	Total VOC's	TVOC	49480.5	PPB		ORVOA	7.5	7.5	FT	SVROU2	
A1-11	Borehole	19930825	Soil	Uranium-234	13966-29-5	0.7	PCI/G	0.31	RAD	6.5	8.5	FT	MND16	
A1-11	Borehole	19930825	Soil	Plutonium-238	13981-16-3	0.11	PCI/G	0.11	RAD	6.5	8.5	FT	MND16	
A1-11	Borehole	19930825	Soil	Thorium-230	14269-63-7	1	PCI/G	0.12	RAD	6.5	8.5	FT	MND16	
A1-11	Borehole	19930825	Soil	Thorium-228	14274-82-9	0.4	PCI/G	0.1	RAD	6.5	8.5	FT	MND16	
A1-11	Borehole	19930825	Soil	Acetone	67-64-1	120	UG/KG		ORVOA	6.5	8.5	FT	MND16	
A1-11	Borehole	19930825	Soil	Aluminum	7429-90-5	11800	MG/KG		INORG	6.5	8.5	FT	MND16	
A1-11	Borehole	19930825	Soil	Iron	7439-89-6	21700	MG/KG		INORG	6.5	8.5	FT	MND16	
A1-11	Borehole	19930825	Soil	Lead	7439-92-1	7.7	MG/KG		INORG	6.5	8.5	FT	MND16	
A1-11	Borehole	19930825	Soil	Magnesium	7439-95-4	15800	MG/KG		INORG	6.5	8.5	FT	MND16	
A1-11	Borehole	19930825	Soil	Manganese	7439-96-5	525	MG/KG		INORG	6.5	8.5	FT	MND16	
A1-11	Borehole	19930825	Soil	Potassium	9/7/40	3140	MG/KG		INORG	6.5	8.5	FT	MND16	
A1-11	Borehole	19930825	Soil	Sodium	7440-23-5	223	MG/KG		INORG	6.5	8.5	FT	MND16	
A1-11	Borehole	19930825	Soil	Thallium	7440-28-0	**22.4**	MG/KG		INORG	6.5	8.5	FT	MND16	Exceeds background value.
A1-11	Borehole	19930825	Soil	Thorium-232	7440-29-1	0.39	PCI/G	0.09	RAD	6.5	8.5	FT	MND16	
A1-11	Borehole	19930825	Soil	Arsenic	7440-38-2	4.7	MG/KG		INORG	6.5	8.5	FT	MND16	
A1-11	Borehole	19930825	Soil	Barium	7440-39-3	36.3	MG/KG		INORG	6.5	8.5	FT	MND16	
A1-11	Borehole	19930825	Soil	Beryllium	7440-41-7	**0.83**	MG/KG		INORG	6.5	8.5	FT	MND16	Exceeds soil 10-6 GV.
A1-11	Borehole	19930825	Soil	Chromium	7440-47-3	15	MG/KG		INORG	6.5	8.5	FT	MND16	
A1-11	Borehole	19930825	Soil	Cobalt	7440-48-4	10.1	MG/KG		INORG	6.5	8.5	FT	MND16	
A1-11	Borehole	19930825	Soil	Copper	7440-50-8	14.9	MG/KG		INORG	6.5	8.5	FT	MND16	
A1-11	Borehole	19930825	Soil	Uranium-238	24678-82-8	0.79	PCI/G	0.28	RAD	6.5	8.5	FT	MND16	
A1-11	Borehole	19930825	Soil	Vanadium	7440-62-2	18.5	MG/KG		INORG	6.5	8.5	FT	MND16	
A1-11	Borehole	19930825	Soil	Zinc	7440-66-6	49	MG/KG		INORG	6.5	8.5	FT	MND16	
A1-11	Borehole	19930825	Soil	Calcium	7440-70-2	147000	MG/KG		INORG	6.5	8.5	FT	MND16	
A1-11	Borehole	19930825	Soil	Selenium	7782-49-2	**0.48**	MG/KG		INORG	6.5	8.5	FT	MND16	Exceeds background value.
A1-11	Borehole	19930825	Soil	Neptunium-237	NP-237	-0.47	PCI/G	0.13	RAD	6.5	8.5	FT	MND16	
A1-11	Borehole	19930825	Soil	Plutonium-239/240	PU-239/240	-0.014	PCI/G	0.08	RAD	6.5	8.5	FT	MND16	
A1-11	Borehole	19930825	Soil	Plutonium-242	PU-242	0.045	PCI/G	0.28	RAD	6.5	8.5	FT	MND16	
A1-11	Borehole	19930825	Soil	pH	1006	6.8	STD UNIT		GENERA	6.5	8.5	FT	MND16	
A1-11	Borehole	19930825	Soil	Uranium-235	15177-96-1	0	PCI/G	0.26	RAD	6.5	8.5	FT	MND16	
A1-14	Borehole	19930831	Soil	Uranium-234	13966-29-5	0.92	PCI/G	0.29	RAD	4.5	6.5	FT	MND16	
A1-14	Borehole	19930831	Soil	Plutonium-238	13981-16-3	-0.14	PCI/G	0.57	RAD	4.5	6.5	FT	MND16	
A1-14	Borehole	19930831	Soil	Thorium-230	14269-63-7	0.86	PCI/G	0.2	RAD	4.5	6.5	FT	MND16	
A1-14	Borehole	19930831	Soil	Thorium-228	14274-82-9	0.29	PCI/G	0.18	RAD	4.5	6.5	FT	MND16	
A1-14	Borehole	19930831	Soil	Aluminum	7429-90-5	7820	MG/KG		INORG	4.5	6.5	FT	MND16	
A1-14	Borehole	19930831	Soil	Iron	7439-89-6	16100	MG/KG		INORG	4.5	6.5	FT	MND16	

A1-14	Borehole	19930831	Soil	Lead	7439-92-1	9.9	MG/KG		INORG	4.5	6.5	FT	MND16	
A1-14	Borehole	19930831	Soil	Magnesium	7439-95-4	**40500**	MG/KG		INORG	4.5	6.5	FT	MND16	Exceeds background value.
A1-14	Borehole	19930831	Soil	Manganese	7439-96-5	340	MG/KG		INORG	4.5	6.5	FT	MND16	
A1-14	Borehole	19930831	Soil	Potassium	9/7/40	1650	MG/KG		INORG	4.5	6.5	FT	MND16	
A1-14	Borehole	19930831	Soil	Sodium	7440-23-5	150	MG/KG		INORG	4.5	6.5	FT	MND16	
A1-14	Borehole	19930831	Soil	Thallium	7440-28-0	**27.9**	MG/KG		INORG	4.5	6.5	FT	MND16	Exceeds background value.
A1-14	Borehole	19930831	Soil	Thorium-232	7440-29-1	0.54	PCI/G	0.15	RAD	4.5	6.5	FT	MND16	
A1-14	Borehole	19930831	Soil	Arsenic	7440-38-2	6	MG/KG		INORG	4.5	6.5	FT	MND16	
A1-14	Borehole	19930831	Soil	Barium	7440-39-3	56.2	MG/KG		INORG	4.5	6.5	FT	MND16	
A1-14	Borehole	19930831	Soil	Beryllium	7440-41-7	0.5	MG/KG		INORG	4.5	6.5	FT	MND16	
A1-14	Borehole	19930831	Soil	Chromium	7440-47-3	11.8	MG/KG		INORG	4.5	6.5	FT	MND16	
A1-14	Borehole	19930831	Soil	Cobalt	7440-48-4	7.5	MG/KG		INORG	4.5	6.5	FT	MND16	
A1-14	Borehole	19930831	Soil	Copper	7440-50-8	13.5	MG/KG		INORG	4.5	6.5	FT	MND16	
A1-14	Borehole	19930831	Soil	Uranium-238	24678-82-8	0.95	PCI/G	0.26	RAD	4.5	6.5	FT	MND16	
A1-14	Borehole	19930831	Soil	Vanadium	7440-62-2	18.1	MG/KG		INORG	4.5	6.5	FT	MND16	
A1-14	Borehole	19930831	Soil	Zinc	7440-66-6	45.5	MG/KG		INORG	4.5	6.5	FT	MND16	
A1-14	Borehole	19930831	Soil	Calcium	7440-70-2	106000	MG/KG		INORG	4.5	6.5	FT	MND16	
A1-14	Borehole	19930831	Soil	Neptunium-237	NP-237	-0.47	PCI/G	0.001	RAD	4.5	6.5	FT	MND16	
A1-14	Borehole	19930831	Soil	Plutonium-239/240	PU-239/240	0.068	PCI/G	0.42	RAD	4.5	6.5	FT	MND16	
A1-14	Borehole	19930831	Soil	Plutonium-242	PU-242	0.19	PCI/G	0.55	RAD	4.5	6.5	FT	MND16	
A1-14	Borehole	19930831	Soil	pH	1006	6.4	STD UNIT		GENERA	4.5	6.5	FT	MND16	
A1-14	Borehole	19930831	Soil	Uranium-235	15177-96-1	-0.009	PCI/G	0.24	RAD	4.5	6.5	FT	MND16	
A2-8	Borehole	19930910	Soil	Pyrene	129-00-0	210	UG/KG		ORSVO	4	6	FT	MND16	
A2-8	Borehole	19930910	Soil	Uranium-234	13966-29-5	0.66	PCI/G	0.09	RAD	4	6	FT	MND16	
A2-8	Borehole	19930910	Soil	Plutonium-238	13981-16-3	**22**	PCI/G	0.59	RAD	4	6	FT	MND16	Exceeds soil 10-6 GV. Exceeds background value.
A2-8	Borehole	19930910	Soil	Thorium-230	14269-63-7	0.84	PCI/G	0.29	RAD	4	6	FT	MND16	
A2-8	Borehole	19930910	Soil	Thorium-228	14274-82-9	0.31	PCI/G	0.29	RAD	4	6	FT	MND16	
A2-8	Borehole	19930910	Soil	Benzo(b)fluoranthene	205-99-2	210	UG/KG		ORSVO	4	6	FT	MND16	
A2-8	Borehole	19930910	Soil	Fluoranthene	206-44-0	210	UG/KG		ORSVO	4	6	FT	MND16	
A2-8	Borehole	19930910	Soil	Aluminum	7429-90-5	8330	MG/KG		INORG	4	6	FT	MND16	
A2-8	Borehole	19930910	Soil	Iron	7439-89-6	16100	MG/KG		INORG	4	6	FT	MND16	
A2-8	Borehole	19930910	Soil	Lead	7439-92-1	9.5	MG/KG		INORG	4	6	FT	MND16	
A2-8	Borehole	19930910	Soil	Magnesium	7439-95-4	39700	MG/KG		INORG	4	6	FT	MND16	
A2-8	Borehole	19930910	Soil	Manganese	7439-96-5	434	MG/KG		INORG	4	6	FT	MND16	
A2-8	Borehole	19930910	Soil	Potassium	9/7/40	1640	MG/KG		INORG	4	6	FT	MND16	
A2-8	Borehole	19930910	Soil	Sodium	7440-23-5	142	MG/KG		INORG	4	6	FT	MND16	
A2-8	Borehole	19930910	Soil	Thallium	7440-28-0	**28.3**	MG/KG		INORG	4	6	FT	MND16	Exceeds background value.
A2-8	Borehole	19930910	Soil	Thorium-232	7440-29-1	0.24	PCI/G	0.19	RAD	4	6	FT	MND16	
A2-8	Borehole	19930910	Soil	Arsenic	7440-38-2	5.2	MG/KG		INORG	4	6	FT	MND16	
A2-8	Borehole	19930910	Soil	Barium	7440-39-3	52.2	MG/KG		INORG	4	6	FT	MND16	
A2-8	Borehole	19930910	Soil	Beryllium	7440-41-7	0.47	MG/KG		INORG	4	6	FT	MND16	
A2-8	Borehole	19930910	Soil	Chromium	7440-47-3	13.3	MG/KG		INORG	4	6	FT	MND16	
A2-8	Borehole	19930910	Soil	Cobalt	7440-48-4	7.2	MG/KG		INORG	4	6	FT	MND16	
A2-8	Borehole	19930910	Soil	Copper	7440-50-8	14.3	MG/KG		INORG	4	6	FT	MND16	
A2-8	Borehole	19930910	Soil	Uranium-238	24678-82-8	0.64	PCI/G	0.08	RAD	4	6	FT	MND16	
A2-8	Borehole	19930910	Soil	Vanadium	7440-62-2	15.9	MG/KG		INORG	4	6	FT	MND16	
A2-8	Borehole	19930910	Soil	Zinc	7440-66-6	49.3	MG/KG		INORG	4	6	FT	MND16	
A2-8	Borehole	19930910	Soil	Calcium	7440-70-2	114000	MG/KG		INORG	4	6	FT	MND16	
A2-8	Borehole	19930910	Soil	Neptunium-237	NP-237	0.027	PCI/G	0.04	RAD	4	6	FT	MND16	

A2-8	Borehole	19930910	Soil	Plutonium-242	PU-242	0.1	PCI/G	0.18	RAD	4	6 FT	MND16
A2-8	Borehole	19930910	Soil	pH	1006	7.1	STD UNIT		GENERA	4	6 FT	MND16
A2-8	Borehole	19930910	Soil	Uranium-235	15177-96-1	0.045	PCI/G	0.07	RAD	4	6 FT	MND16

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

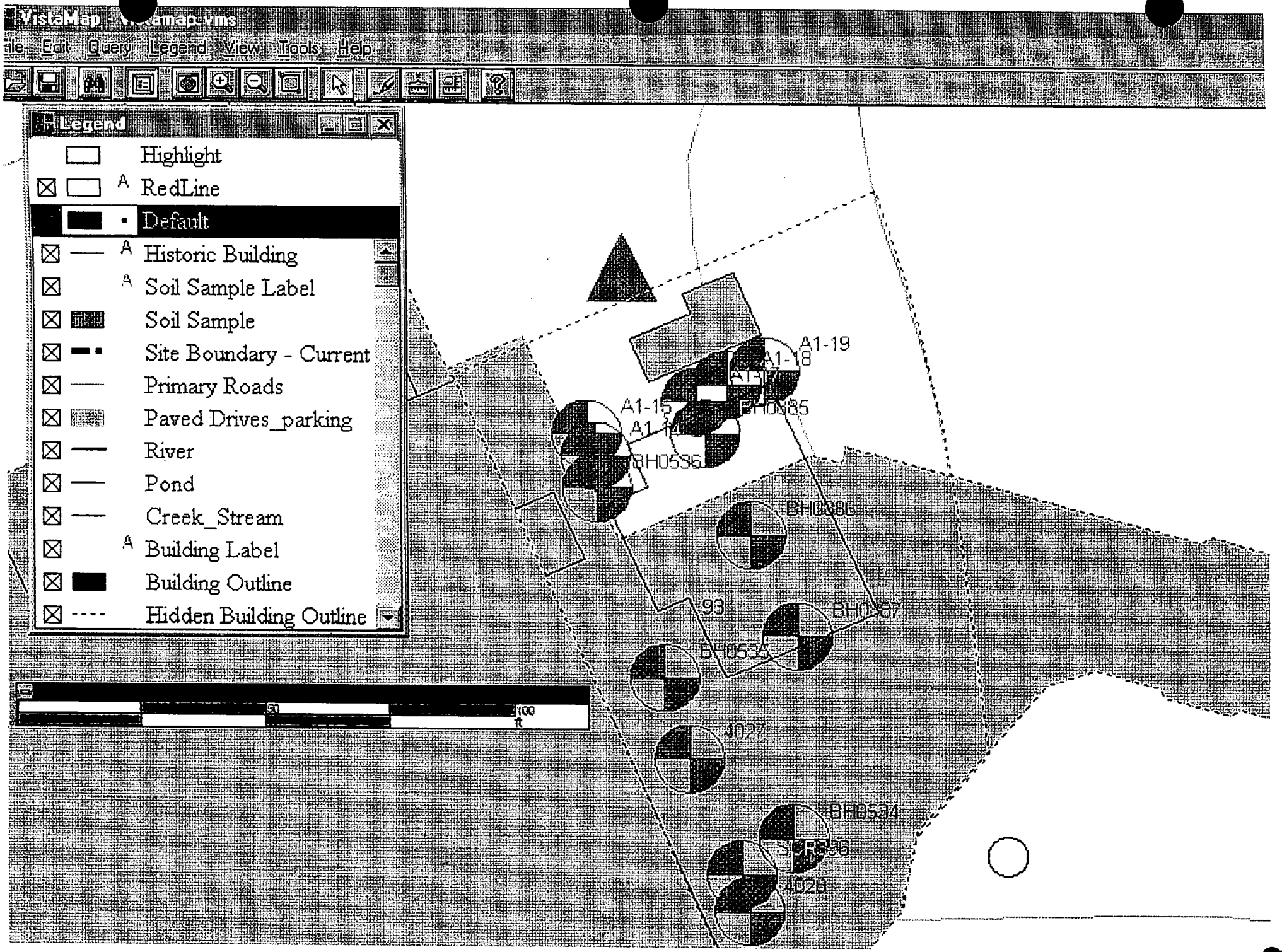
comp_no	par_code	parameter name	comparison value	units
5	107-06-2	1,2-Dichloroethane	0.005	MG/L
5	78-87-5	1,2-Dichloropropane	0.005	MG/L
5	106-46-7	1,4-Dichlorobenzene	0.075	MG/L
5	108-90-7	Chlorobenzene	0.1	MG/L
5	96-12-8	Dibromochloropropane	0.0002	MG/L
5	106-93-4	1,2-Dibromoethane	0.00005	MG/L
5	95-50-1	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

Supplement 1

Appendix L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File Edit Query Legend View Tools Help
Legend
Highlight
RedLine
Default
Historic Building
Soil Sample Label
Soil Sample
Site Boundary - Current
Primary Roads
Paved Drives_parking
River
Pond
Creek_Stream
Building Label
Building Outline
Hidden Building Outline
A1-19
A1-18
A1-15
BH0535
BH0536
BH0386
93
BH0537
BH0533
4027
BH0534
4028
50
100
ft

Lo[illegible]on_name	Chem_class	Value_name	Measured value	Value_units	Lab qualifier	Start_de[illegible]
S0363	RAD	Plutonium-238	0.08	PCI/G		0.0
S0363	RAD	Tritium	24.84	PCI/ML		0.0
S0363	RAD	Thorium-232	2.0	PCI/G	U	0.0
4027	ORVOA	Trichlorofluoromethane	1607.0	PPB		5.0
4027	ORVOA	Total VOC's	1607.0	PPB		5.0
4028	ORVOA	1,1,2-Trichloro-1,2,2-trifluoroethane	25974.0	PPB		5.0
4028	ORVOA	Total VOC's	25974.0	PPB		5.0
4028	ORVOA	1,1,2-Trichloro-1,2,2-trifluoroethane	49480.5	PPB		7.5
4028	ORVOA	Total VOC's	49480.5	PPB		7.5
A1-14	ORSVO	4-Nitroaniline	3700.0	UG/KG	U	4.5
A1-14	ORSVO	4-Nitrophenol	3700.0	UG/KG	U	4.5
A1-14	ORVOA	Ethylbenzene	11.0	UG/KG	U	4.5
A1-14	ORVOA	Styrene	11.0	UG/KG	U	4.5
A1-14	ORVOA	1,3-cis-Dichloropropene	11.0	UG/KG	U	4.5
A1-14	ORVOA	1,3-trans-Dichloropropene	11.0	UG/KG	U	4.5
A1-14	ORSVO	4-Bromophenyl-phenyl Ether	720.0	UG/KG	U	4.5
A1-14	ORSVO	2,4-Dimethylphenol	720.0	UG/KG	U	4.5
A1-14	ORSVO	4-Methylphenol	720.0	UG/KG	U	4.5
A1-14	ORSVO	1,4-Dichlorobenzene	720.0	UG/KG	U	4.5
A1-14	ORSVO	4-Chloroaniline	720.0	UG/KG	U	4.5
A1-14	ORVOA	1,2-Dichloroethane	11.0	UG/KG	U	4.5
A1-14	ORVOA	4-Methyl-2-pentanone	11.0	UG/KG	U	4.5
A1-14	ORSVO	2,2'-oxybis(1-chloropropane)	720.0	UG/KG	U	4.5
A1-14	ORVOA	Toluene	11.0	UG/KG	U	4.5
A1-14	ORVOA	Chlorobenzene	11.0	UG/KG	U	4.5
A1-14	ORSVO	Phenol	720.0	UG/KG	U	4.5
A1-14	ORPPB	Aroclor-1260	36.0	UG/KG	U	4.5
A1-14	ORPPB	Aroclor-1254	36.0	UG/KG	U	4.5
A1-14	ORSVO	Bis(2-chloroethyl)ether	720.0	UG/KG	U	4.5
A1-14	ORSVO	Bis(2-chloroethoxy)methane	720.0	UG/KG	U	4.5
A1-14	ORPPB	Aroclor-1221	72.0	UG/KG	U	4.5
A1-14	ORPPB	Aroclor-1232	36.0	UG/KG	U	4.5
A1-14	ORSVO	Bis(2-ethylhexyl)phthalate	720.0	UG/KG	U	4.5
A1-14	ORSVO	Di-n-octyl Phthalate	720.0	UG/KG	U	4.5
A1-14	ORSVO	Hexachlorobenzene	720.0	UG/KG	U	4.5
A1-14	ORSVO	Anthracene	720.0	UG/KG	U	4.5
A1-14	ORSVO	1,2,4-Trichlorobenzene	720.0	UG/KG	U	4.5
A1-14	ORSVO	2,4-Dichlorophenol	720.0	UG/KG	U	4.5
A1-14	ORSVO	2,4-Dinitrotoluene	720.0	UG/KG	U	4.5

Lo[redacted]on_name	Chem_class	Value_name	Measured_value	Value_units	Lab_qualifier	Start_dep[redacted]
A1-[redacted]	ORVOA	Dibromochloromethane	11.0	UG/KG	U	4.5
A1-14	ORPPB	Aroclor-1248	36.0	UG/KG	U	4.5
A1-14	ORPPB	Aroclor-1016	36.0	UG/KG	U	4.5
A1-14	ORVOA	Tetrachloroethene	11.0	UG/KG	U	4.5
A1-14	ORSVO	Pyrene	720.0	UG/KG	U	4.5
A1-14	ORSVO	Dimethyl Phthalate	720.0	UG/KG	U	4.5
A1-14	ORSVO	Dibenzofuran	720.0	UG/KG	U	4.5
A1-14	ORVOA	Xylenes, Total	11.0	UG/KG	U	4.5
A1-14	RAD	Uranium-234	0.92	PCI/G		4.5
A1-14	RAD	Plutonium-238	-0.14	PCI/G		4.5
A1-14	RAD	Thorium-230	0.86	PCI/G		4.5
A1-14	RAD	Thorium-228	0.29	PCI/G		4.5
A1-14	ORSVO	Benzo(g,h,i)perylene	720.0	UG/KG	U	4.5
A1-14	ORSVO	Indeno(1,2,3-cd)pyrene	720.0	UG/KG	U	4.5
A1-14	ORSVO	Benzo(b)fluoranthene	720.0	UG/KG	U	4.5
A1-14	ORSVO	Fluoranthene	720.0	UG/KG	U	4.5
A1-14	ORSVO	Benzo(k)fluoranthene	720.0	UG/KG	U	4.5
A1-14	ORSVO	Acenaphthylene	720.0	UG/KG	U	4.5
A1-14	ORSVO	Chrysene	720.0	UG/KG	U	4.5
A1-14	ORSVO	Benzo(a)pyrene	720.0	UG/KG	U	4.5
A1-14	ORSVO	2,4-Dinitrophenol	3700.0	UG/KG	U	4.5
A1-14	ORSVO	Dibenz(a,h)anthracene	720.0	UG/KG	U	4.5
A1-14	ORSVO	4,6-Dinitro-o-Cresol	3700.0	UG/KG	U	4.5
A1-14	ORPPB	Aroclor-1242	36.0	UG/KG	U	4.5
A1-14	ORVOA	1,2-Dichloroethene	11.0	UG/KG	U	4.5
A1-14	ORSVO	1,3-Dichlorobenzene	720.0	UG/KG	U	4.5
A1-14	ORVOA	Carbon Tetrachloride	11.0	UG/KG	U	4.5
A1-14	ORSVO	Benzo(a)anthracene	720.0	UG/KG	U	4.5
A1-14	INORG	Cyanide	1.1	MG/KG	U	4.5
A1-14	ORSVO	4-Chloro-3-methylphenol	720.0	UG/KG	U	4.5
A1-14	ORVOA	2-Hexanone	11.0	UG/KG	U	4.5
A1-14	ORSVO	2,6-Dinitrotoluene	720.0	UG/KG	U	4.5
A1-14	ORSVO	N-Nitroso-di-n-propylamine	720.0	UG/KG	U	4.5
A1-14	ORVOA	Acetone	69.0	UG/KG		4.5
A1-14	ORVOA	Chloroform	11.0	UG/KG	U	4.5
A1-14	ORSVO	Hexachloroethane	720.0	UG/KG	U	4.5
A1-14	ORSVO	4-Chlorophenyl-phenylether	720.0	UG/KG	U	4.5
A1-14	ORVOA	Benzene	11.0	UG/KG	U	4.5
A1-14	ORVOA	1,1,1-Trichloroethane	11.0	UG/KG	U	4.5

Lo[redacted]on_name	Chem_class	Value_name	Measured_value	Value_units	Lab_qualifier	Start_dep[redacted]
A1-14	ORVOA	Bromomethane	11.0	UG/KG	U	4.5
A1-14	ORVOA	Chloromethane	11.0	UG/KG	U	4.5
A1-14	INORG	Aluminum	7820.0	MG/KG		4.5
A1-14	INORG	Iron	16100.0	MG/KG		4.5
A1-14	INORG	Lead	9.9	MG/KG		4.5
A1-14	INORG	Magnesium	40500.0	MG/KG		4.5
A1-14	INORG	Manganese	340.0	MG/KG		4.5
A1-14	INORG	Mercury	0.01	MG/KG	U	4.5
A1-14	INORG	Potassium	1650.0	MG/KG		4.5
A1-14	INORG	Silver	1.3	MG/KG	U	4.5
A1-14	INORG	Sodium	150.0	MG/KG	B	4.5
A1-14	INORG	Thallium	27.9	MG/KG		4.5
A1-14	INORG	Thallium	2.2	MG/KG	U	4.5
A1-14	RAD	Thorium-232	0.54	PCI/G		4.5
A1-14	INORG	Antimony	8.3	MG/KG	U	4.5
A1-14	INORG	Arsenic	6.0	MG/KG		4.5
A1-14	INORG	Barium	56.2	MG/KG		4.5
A1-14	INORG	Beryllium	0.5	MG/KG	B	4.5
A1-14	INORG	Cadmium	1.1	MG/KG	U	4.5
A1-14	INORG	Chromium	11.8	MG/KG		4.5
A1-14	INORG	Cobalt	7.5	MG/KG	B	4.5
A1-14	INORG	Copper	13.5	MG/KG		4.5
A1-14	RAD	Uranium-238	0.95	PCI/G		4.5
A1-14	INORG	Vanadium	18.1	MG/KG		4.5
A1-14	INORG	Zinc	45.5	MG/KG		4.5
A1-14	INORG	Calcium	106000.0	MG/KG		4.5
A1-14	ORVOA	Chloroethane	11.0	UG/KG	U	4.5
A1-14	ORVOA	Vinyl Chloride	11.0	UG/KG	U	4.5
A1-14	ORVOA	Methylene Chloride	26.0	UG/KG	B	4.5
A1-14	ORVOA	Carbon Disulfide	11.0	UG/KG	U	4.5
A1-14	ORVOA	Bromoform	11.0	UG/KG	U	4.5
A1-14	ORVOA	Bromodichloromethane	11.0	UG/KG	U	4.5
A1-14	ORVOA	1,1-Dichloroethane	11.0	UG/KG	U	4.5
A1-14	ORVOA	1,1-Dichloroethene	11.0	UG/KG	U	4.5
A1-14	ORSVO	Hexachlorocyclopentadiene	720.0	UG/KG	U	4.5
A1-14	INORG	Selenium	0.22	MG/KG	U	4.5
A1-14	ORSVO	Isophorone	720.0	UG/KG	U	4.5
A1-14	ORVOA	1,2-Dichloropropane	11.0	UG/KG	U	4.5
A1-14	ORVOA	2-Butanone	11.0	UG/KG	U	4.5

Lo[redacted]on_name	Chem_class	Value_name	Measured_value	Value_units	Lab_qualifier	Start_dep[redacted]
A1-14	ORVOA	1,1,2-Trichloroethane	11.0	UG/KG	U	4.5
A1-14	ORVOA	Trichloroethene	11.0	UG/KG	U	4.5
A1-14	ORVOA	1,1,2,2-Tetrachloroethane	11.0	UG/KG	U	4.5
A1-14	ORSVO	Acenaphthene	720.0	UG/KG	U	4.5
A1-14	ORSVO	Diethyl Phthalate	720.0	UG/KG	U	4.5
A1-14	ORSVO	Di-n-butyl Phthalate	720.0	UG/KG	U	4.5
A1-14	ORSVO	Phenanthrene	720.0	UG/KG	U	4.5
A1-14	ORSVO	Butyl Benzyl Phthalate	720.0	UG/KG	U	4.5
A1-14	ORSVO	N-Nitrosodiphenylamine	720.0	UG/KG	U	4.5
A1-14	ORSVO	Fluorene	720.0	UG/KG	U	4.5
A1-14	ORSVO	Carbazole	720.0	UG/KG	U	4.5
A1-14	ORSVO	Hexachlorobutadiene	720.0	UG/KG	U	4.5
A1-14	ORSVO	Pentachlorophenol	3700.0	UG/KG	U	4.5
A1-14	ORSVO	2,4,6-Trichlorophenol	720.0	UG/KG	U	4.5
A1-14	ORSVO	2-Nitroaniline	3700.0	UG/KG	U	4.5
A1-14	ORSVO	2-Nitrophenol	720.0	UG/KG	U	4.5
A1-14	ORSVO	Naphthalene	720.0	UG/KG	U	4.5
A1-14	ORSVO	2-Methylnaphthalene	720.0	UG/KG	U	4.5
A1-14	ORSVO	2-Chloronaphthalene	720.0	UG/KG	U	4.5
A1-14	ORSVO	3,3'-Dichlorobenzidine	720.0	UG/KG	U	4.5
A1-14	ORSVO	2-Methylphenol	720.0	UG/KG	U	4.5
A1-14	ORSVO	1,2-Dichlorobenzene	720.0	UG/KG	U	4.5
A1-14	ORSVO	2-Chlorophenol	720.0	UG/KG	U	4.5
A1-14	ORSVO	2,4,5-Trichlorophenol	3700.0	UG/KG	U	4.5
A1-14	ORSVO	Nitrobenzene	720.0	UG/KG	U	4.5
A1-14	ORSVO	3-Nitroaniline	3700.0	UG/KG	U	4.5
A1-14	RAD	Neptunium-237	-0.47	PCI/G		4.5
A1-14	RAD	Plutonium-239/240	0.068	PCI/G		4.5
A1-14	RAD	Plutonium-242	0.19	PCI/G		4.5
A1-14	GENERA	pH	6.4	STD UNIT		4.5
A1-14	RAD	Uranium-235	-0.009	PCI/G		4.5
A1-14	ANION	Sulfide	10.0	MG/KG	U	4.5
SCR396	RAD	Plutonium-238	18.0	PCI/G	U	1.0
SCR396	RAD	Thorium-232	1.5	PCI/G	U	1.0
SCR396	RAD	Plutonium-238	5.0	PCI/G	U	1.0
SCR396	RAD	Thorium-232	1.2	PCI/G	U	1.0

Supplement 2

Appendix L

PRS 128 DS Building
Solvent Shed

Figure B.3.

Figure 2.43. Color illustration
elevated detection location

TABLE II.4. SUMMARY OF POSITIVE DETECTIONS - MAIN HILL
(ppb)

SAMPLE ID	SAMPLE DATE	FREON 11	FREON 113	TRAN-12DCE	CIS-12DCE	111TCA	PCE	TCE	TOLUENE
MND-01-1002-1003	28 JUL 92	---	---	---	---	---	---	---	40
MND-01-1003-0005	28 JUL 92	---	---	---	---	---	---	---	3 *
MND-01-1005-0005	28 JUL 92	---	---	---	---	---	---	---	21 *
MND-01-1007-0005	29 JUL 92	---	---	---	---	---	---	2	---
MND-01-1008-0005	29 JUL 92	---	---	---	---	---	---	---	5
MND-01-1008-1005	29 JUL 92	---	---	---	---	---	---	---	3
MND-01-1009-0005	29 JUL 92	---	---	---	---	---	---	4	19
MND-01-1010-0005	29 JUL 92	---	---	---	---	---	---	---	13
MND-01-1014-0005	29 JUL 92	---	---	---	---	---	---	---	8
MND-01-1016-0003	30 JUL 92	---	---	---	---	---	---	2	8
MND-01-1046-0005	4 AUG 92	---	---	---	---	2	---	188	3 *
MND-01-1047-0005	4 AUG 92	---	---	---	---	7	---	4	---
MND-01-1048-0005	4 AUG 92	---	---	---	---	6	---	4	---
MND-01-1050-0003	4 AUG 92	---	---	---	---	---	---	8	---
MND-01-1050-1003	4 AUG 92	---	---	---	---	---	---	17	27 *
MND-01-1051-0003	4 AUG 92	---	---	---	---	---	---	8	5 *
MND-01-1052-0003	4 AUG 92	---	---	---	---	---	---	---	13 *
MND-01-1053-0002	5 AUG 92	2	---	---	---	---	---	---	447
MND-01-1054-0005	5 AUG 92	4	---	---	---	7	---	226 *	11
MND-01-1055-1005	5 AUG 92	---	---	---	---	---	---	4 *	5
MND-01-1057-0005	5 AUG 92	---	---	---	---	---	---	---	24
MND-01-1062-0003	5 AUG 92	---	---	---	---	13	---	6	---
MND-01-1064-0005	11 AUG 92	---	---	---	---	---	---	---	19
MND-01-1066-0005	11 AUG 92	---	---	---	---	8	---	---	226
MND-01-1067-0005	11 AUG 92	---	---	---	---	---	---	11	133
MND-01-1069-1005	12 AUG 92	---	---	---	---	---	---	---	37
MND-01-1070-0005	12 AUG 92	---	---	---	---	---	---	---	5
MND-01-1070-1005	12 AUG 92	---	---	---	---	---	---	---	5
MND-01-1072-0005	12 AUG 92	---	---	---	---	---	---	---	106
MND-01-1074-0005	12 AUG 92	---	799	---	---	---	1191	---	5
MND-01-1074-1005	12 AUG 92	---	812	---	---	---	1117	---	5
MND-01-1075-0005	12 AUG 92	---	---	---	---	---	---	---	80
MND-01-1076-0005	12 AUG 92	---	2934	---	---	148	---	---	---
MND-01-1077-0005	12 AUG 92	---	---	---	---	---	---	---	27
MND-01-1079-0005	13 AUG 92	---	13	---	---	---	---	---	---
MND-01-1080-0005	13 AUG 92	---	13	---	---	---	---	---	---
MND-01-1085-0005	13 AUG 92	---	102	---	---	22	---	41	---
MND-01-1086-0005	13 AUG 92	---	47	---	---	---	---	---	---
MND-01-1093-0005	15 AUG 92	---	**131000	247	40800	---	---	**34780	53 *
MND-01-1094-0005	14 AUG 92	---	63	13	485	---	---	978	---
MND-01-1097-0002	14 AUG 92	---	---	---	---	---	---	6	8
MND-01-1099-0005	15 AUG 92	---	---	---	---	---	---	4	8 *
MND-01-1101-0005	16 AUG 92	---	865	---	---	---	---	---	8
MND-01-1102-0005	16 AUG 92	---	419	---	---	---	---	---	13
MND-01-1106-0003	18 AUG 92	---	329	---	---	---	---	6	---
MND-01-1106-0005	16 AUG 92	---	---	---	---	---	---	6	---
MND-01-1109-0005	18 AUG 92	---	---	---	---	---	---	6	13
MND-01-1110-0005	16 AUG 92	---	---	---	---	---	---	---	255

Table B.4.

TABLE II.4. SUMMARY OF POSITIVE DETECTIONS - MAIN HILL
(ppb)

SAMPLE ID	SAMPLE DATE	FREON 11	FREON 113	TRAN-12DCE	CIS-12DCE	111TCA	PCE	TCE	TOLUENE
MND-01-1113-0005	17 AUG 92	---	---	---	---	---	---	11	---
MND-01-1114-0005	17 AUG 92	---	9	---	---	315	10	357	5 *
MND-01-1114-1005	17 AUG 92	---	---	---	---	259	9	263	3 *
MND-01-1115-0005	17 AUG 92	---	---	---	---	58	---	13	---
MND-01-1117-0005	18 AUG 92	---	---	---	---	---	12	8	---
MND-01-1117-1005	18 AUG 92	---	---	---	---	---	15	9	---
MND-01-1118-0005	18 AUG 92	---	---	---	---	---	3	---	---
MND-01-1119-0005	18 AUG 92	---	---	---	---	---	---	---	213
MND-01-1122-0005	18 AUG 92	801	13	---	---	---	---	---	---
MND-01-1123-0005	18 AUG 92	---	---	---	---	---	---	---	5 *
MND-01-1124-0005	18 AUG 92	---	---	---	---	---	---	---	8884 *
MND-01-1127-0005	18 AUG 92	---	---	---	---	---	4	---	27 *
MND-01-1128-0005	18 AUG 92	---	10	---	---	37	12	4	11 *
MND-01-1190-0005	24 SEP 92	240	477	---	---	---	---	---	3 *
MND-01-1190-1005	24 SEP 92	287	707	---	---	---	---	---	3 *
MND-01-1192-0005	24 SEP 92	---	---	---	---	---	---	---	5 *
MND-01-1193-0005	24 SEP 92	---	---	---	---	---	---	---	18 *
MND-01-1196-0005	25 SEP 92	---	---	---	---	---	---	4	64
MND-01-1197-0002	25 SEP 92	---	---	---	---	---	---	23	5
MND-01-1198-0006	25 SEP 92	---	24	13	518	33	---	474	5
MND-01-1199-0002	25 SEP 92	---	10218	---	120	---	---	479	---
MND-01-1201-0007	25 SEP 92	---	4716	13	611	---	---	130	48
MND-01-1201-1007	25 SEP 92	---	5895	---	612	---	---	117	43
MND-01-1202-0002	25 SEP 92	---	6419	66	2499	9	---	1921	3
MND-01-1202-1002	25 SEP 92	---	9301	41	1706	---	---	1737	---
MND-01-1203-0002	25 SEP 92	---	1475	---	334	---	---	45	192
MND-01-1204-0005	25 SEP 92	---	453	---	---	---	---	11	5
MND-01-1205-0005	25 SEP 92	---	---	---	---	---	---	---	21
MND-01-1206-0005	26 SEP 92	---	---	---	---	---	---	---	23142
MND-01-1207-0005	26 SEP 92	---	---	---	---	---	---	---	90 -
MND-01-1227-0005	28 SEP 92	---	10	---	---	---	---	---	4788
MND-01-1228-0005	28 SEP 92	---	---	---	---	---	---	---	11
MND-01-1230-0005	28 SEP 92	---	---	---	---	---	---	---	13
MND-01-1230-1005	28 SEP 92	---	---	---	---	---	---	---	5
MND-01-1231-0005	28 SEP 92	---	46	---	---	---	34	21	5
MND-01-1232-0005	28 SEP 92	---	4	---	---	---	13	8	24
MND-01-1233-0002	29 SEP 92	---	29	---	---	---	---	---	72
MND-01-1233-1002	29 SEP 92	---	29	---	---	---	---	---	64

Notes:

Only sample locations having positive detections are shown.

*: Associated trip, ambient, equipment or field blank contained specified compound.

B: Indicates blank sample.

w: Indicates water sample.

**: Freon 113 & TCE Off-Scale

Appendix M

Occurrence Reports

ISTRIBUTION:
[ ] FACILITY REP.
[ ] PROGRAM MANAGER
[ ] AL-EOC
[ ] EG&G GENERAL MANAGER
[ ] EG&G EMER. PREP.
[ ] EG&G OPER. SURETY

[ ] DAILY [X] OCCURRENCE REPORT [ ] PI (Internal Dist. Only)

NAME OF FACILITY: EGGMAT- EXPLOSIVE OPERATIONS

NAME OF LABORATORY SITE OR ORGANIZATION: EG&G MOUND APPLIED TECHNOLOGIES

NAME(Facility Manager):	TITLE	TELEPHONE NO.
R. A. FISCHBEIN	DIRECTOR, OPERATIONS	5FTS-774-3727

NAME(Originator):	TITLE	TELEPHONE NO.
D. L. HEITZ	FIRE CHIEF	FTS-774-3125

1. OCCURRENCE REPORT NO.: EGGMAT-EX-91-01

2. STATUS AND REPORT DATE: (check one)
[ ] Notification Report 02/21/91
[ ] 10 - day 03/07/91
[X] Final 04/12/91

3. OCCURRENCE:
CATEGORY (check one):
[ ] Emergency
[ ] Unusual Occurrence
[X] Off-Normal
[ ] P.I.

GROUP (check one):
[X] 1 Facility Condition
[ ] 2 Environmental
[ ] 3 Personnel Safety
[ ] 4 Per. Radiation Protect.
[ ] 5 Safeguards & Security
[ ] 6 Transportation
[ ] 7 Value Basis Rept.
[ ] 8 Facility Status
[ ] 9 Cross-Category Items

4. DIVISION OR PROJECT: EG&G MOUND

Check one: [ ] CE [X] DP [ ] FE [ ] ER [ ] NE [ ] RW [ ] EM

5. FACILITY, SYSTEM, BLDG. OR EQUIPMENT:	6. PLANT AREA:	7. DATE & TIME OCCURRENCE DISCOVERED:
DS BUILDING	MAIN MANUFACTURING AREA	02/20/91 @ 9:30 A.M.

8. DATE & TIME OCCURRENCE CATEGORIZED:	9. DATE & TIME OF DOE PROGRAM NOTIFICATION:	10. DATE & TIME OF OTHER NOTIFICATIONS:
2/20/91 @ 10:00 A.M.	2/21/91 via V.E. Castleberry	

11. SUBJECT OR TITLE OF OCCURRENCE:
DS BUILDING - BUILDING EVACUATION
GROUP 1 - FACILITY CONDITION SUBSET I - OFF-NORMAL - SUB PARAGRAPH (F)

12. DESCRIPTION OF OCCURRENCE:
DS BUILDING RECEIVED AN INADVERTENT EVACUATION SIGNAL DURING TESTING OF THE ADT ALARM SYSTEM IN ANOTHER AREA OF THE PLANT. DS BUILDING OPERATIONS WERE IN NORMAL MODE AT THE TIME OF THIS OCCURRENCE. THERE WERE NO INJURIES OR ENVIRONMENTAL RELEASE ASSOCIATED WITH THIS INCIDENT; IT DID NOT DIRECTLY DEGRADE ANY SAFETY OR PRODUCTION SYSTEM; THERE IS NO PUBLIC INQUIRY, CONGRESSIONAL INQUIRY OR PRESS RELEASE PLANNED.

13. OPERATING CONDITIONS OF FACILITY AT TIME OF OCCURRENCE:

NORMAL OPERATING CONDITIONS

14. IMMEDIATE ACTIONS TAKEN AND RESULTS:

THE BUILDING EVACUATION TOOK PLACE AS EXPECTED ACCORDING TO PROCEDURE.

[ ] DAILY [X] OCCURRENCE REPORT [ ] PI (Internal Dist. Only)

OCCURRENCE REPORT NUMBER: EGGMAT-EX-91-01 | REPORT DATE: 04/12/91

15. CAUSE:

The DS (Development and Standards) Building requires automatic evacuation on any fire alarm. Initially, it was believed that this inadvertent alarm was associated (electronically) with the testing of the fire alarm in another area of the plant. Upon further investigation, it was determined that the alarm sounded coincident with the test of the plant fire pump. This pump is operated for 30 minutes every week. On this particular occasion, the flow of water was greater than normal causing the alarm to go off.

Direct Cause: (mark only one)
[ ] Design [ ] Material [ ] Personnel [X] Procedure [ ] Other
EXPLAIN:

The plant fire pump is tested each week normally with no impact on the plant. On this occasion the DS building water flow alarm activated the fire alarm bells in the DS Building. The alarm sounded due to a greater than 30 second surge in water flow.

Contributing Cause(s): [ ] Design [ ] Material [ ] Personnel [X] Procedure [ ] Other
EXPLAIN:

The Fire Department was evaluating letting the plant fire pump establish a differential pressure across the alarm check value, after water flow alarm tests had equalized those pressures earlier in the week.

Root Cause: [X] Procedure [ ] Training [ ] Management [ ] Personnel [ ] Design [ ] Material

The failure to make a precautionary announcement of the fire pump test while evaluating the weekly fire pump test with no pressure differential on the alarm check valve dictated the evacuation of the DS building.

---

16. DESCRIPTION OF CAUSE:

DS Building was evacuated because the fire alarm was activated. This occurs when water flow and surging lasts longer than allowed by alarm system check valve.

---

17. EVALUATION:(By Facility Manager)

There was no programmatic impact to the plant as a result of this incident. The building evacuation took place in accordance with standard procedures. The investigation is continuing to determine contributing and root causes.

---

18. IS FURTHER EVALUATION REQUIRED: [ ] YES [X] NO

IF YES, BEFORE FURTHER OPERATION: [ ] YES [X] NO

IF YES, BY WHOM? _____

WHEN? _____

[ ] DAILY [x] OCCURRENCE REPORT [ ] PI (Internal Dist. Only)

OCCURRENCE REPORT NUMBER: EGGMAT-EX-91-01 | REPORT DATE: 04/12/91

19. CORRECTIVE ACTION:

1) Change procedure to achieve the pressure differential by use of the plant fire pump or jockey pump, in conjunction with water flow alarm tests.

[X] Taken [ ] Recommended [ ] To be supplied

20. IMPACT ON ENVIRONMENT, SAFETY AND HEALTH:

No environmental, safety and health impact.

21. PROGRAMMATIC IMPACT:

No programmatic impact.

22. IMPACT UPON CODES AND STANDARDS:

No impact upon codes and standards.

23. FINAL EVALUATION AND LESSONS LEARNED:

The method previously used to establish pressure differential was accomplished by closing a manual drain valve as rapidly as possible. The flowing water inertia (abruptly stopped) results in a higher pressure down stream of the alarm check valve. This is not a desirable procedure because; 1) it causes water hammer throughout the sprinkler system and 2) it is physically difficult to perform. In this incident the fire department was evaluating what would happen if there were no pressure differential. This inadvertent evacuation could have been avoided if an announcement was made to "disregard alarm bells". It is obvious from this incident that the pressure differential must be maintained and that a better procedure was required. The new method for maintaining the pressure differential is to use the plant fire pump or jockey pump.

24. SIMILAR OCCURRENCE REPORT NUMBERS:

None

25. SIGNATURES:

Facility Manager Robert A. Fischbeck (Name, Position) DATE: 4/09/91

DOE Facility Representative [illegible] (Name, Position) DATE: 4-15-91

DOE Program Manager Ralph A Haag - SAIC (Name, Position) DATE: 19 April 91

[ ] DAILY [X] OCCURRENCE REPORT [ ] PI (Internal Dist. Only)

OCCURRENCE REPORT NUMBER: EGGMAT-EX-91-01	REPORT DATE: 04/12/91

26. DOE FACILITY REPRESENTATIVE INPUT:

27. ENTERED BY: Name of DOE Facility Representative (Include signature and typed name and title) | DATE:

OCCURRENCE REPORT

Explosive Facilities

(Name of Facility)

Explosive

(Facility Function)

Mound Plant / EG&G Mound Applied Technologies

(Name of Laboratory, Site or Organization)

Name: Allison, Jerry L.
Title: Destructive Testing Manager Telephone No.: (513)865-4533

(Facility Manager/Designee)

Name: Boston, J. L.
Title: Explosives Building Manager Telephone No.: (513)865-3262

(Originator)

Name: D. A. Homan Date: 01/20/1994

(Authorized Classifier (AC))

1. OCCURRENCE REPORT NUMBER: ALO-DA-EGGM-EGGMAT03-1993-0012
   Actuation of Safety System

2. REPORT TYPE AND DATE:

	Date	Time
[ ] Notification	12/13/1993	0758 MTZ
[ ] 10 Day	12/22/1993	0610 MTZ
[ ] 10 Day Update		
[X] Final	01/25/1994	1333 MTZ

3. OCCURRENCE CATEGORY:
   [ ] Emergency [ ] Unusual [X] Off-Normal [ ] Cancelled

4. DIVISION OR PROJECT: EG&G Mound Applied Technologies

5. DOE PROGRAM OFFICE:
   DP - Defense Programs

6. SYSTEM, BLDG., OR EQUIPMENT:
   DS Building

7. UCNI?: No

8. PLANT AREA: Main Hill Area

9. DATE AND TIME DISCOVERED:
   12/11/1993 0843 (ETZ)

10. DATE AND TIME CATEGORIZED:
    12/11/1993 0905 (ETZ)

DERIVATIVE CLASSIFIER
Don Homan
(Name)
Manager 2/2/94
(Title) (Date)

11. DOE NOTIFICATION:
12/11/1993 1000 (ETZ) F. B. Holbrook DOE/DAO

12. OTHER NOTIFICATIONS:

13. SUBJECT OR TITLE OF OCCURRENCE:
Actuation of Safety System

---

14. NATURE OF OCCURRENCE:
01) Facility Condition
I. Operational Occurrence

---

15. DESCRIPTION OF OCCURRENCE:
On December 11, 1993, at 0843 hours (ETZ) a smoke detector in DS Building Air Handler unit servicing rooms 124 and 126 activated. The Mound Fire Department responded and found no smoke present in the air handling unit or room 124 or 126.

A second incident occurred on December 11, 1993, at 2355 hours (ETZ) where the same smoke detector in DS Building Air Handler unit for room 124 and 126 activated again. The Mound Fire Department responded and this time found large amounts of steam in the air handling unit and duct work. No smoke was seen or detected in rooms 124 or 126. The moisture from a steam leak had activated the smoke detector.

This Occurrence Report was reviewed by an Authorized Derivative Classifier (D. A. Homan, Manager, Timers and Components) on 01/20/94 at 1005 hours (ETZ) and contains no Classified or UCNI Information.

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16. OPERATING CONDITIONS OF FACILITY AT TIME OF OCCURRENCE:
Normal Off-Hours operations existed during occurrence

---

17. ACTIVITY CATEGORY:
Normal Operations

---

18. IMMEDIATE ACTIONS TAKEN AND RESULTS:
After the first incident the Building Manager and Explosive Facility Manager were informed of the incident. The smoke detector was reset and put back into operations.

After the second incident the Fire Department contacted maintenance personnel and the unit was shut down. The steam coil was repaired on 12/13/93.

---

19. DIRECT CAUSE:
1) EQUIPMENT/MATERIAL PROBLEM
A. Defective or Failed Part

20. CONTRIBUTING CAUSE(S):
    1) EQUIPMENT/MATERIAL PROBLEM
       A. Defective or Failed Part

21. ROOT CAUSE:
    4) DESIGN PROBLEM
       B. Inadequate or Defective Design

---

22. DESCRIPTION OF CAUSE:
    The root cause of this occurrence was a design defect in the humidifier system that lacks the ability to sense when the air handling fan is shutdown. A contributing cause was the fan shutdown allowing for heat build up in the ducting. This led to the direct cause which was the failure of the fire damper fusible link that closed the duct and resulted in steam condensation on the smoke detector.

---

23. EVALUATION: (By Facility Manager/Designee)
    Due to an apparent problem with the fire damper fusible link, the humidifier system continued to produce steam which condensed and caused the smoke detector to actuate. The addition of a humidity sensor on the smoke detector side of the fire damper will prevent recurrence if the fire damper closes.

---

24. IS FURTHER EVALUATION REQUIRED?: Yes [ ] No [X]

---

25. CORRECTIVE ACTIONS:
    (* = Date added/revised since final report was signed off)

    01) Modify direct digital control software that will shut down humidifiers in the event the air handling unit fans shut down.

        TARGET COMPLETION DATE: 01/09/1994 COMPLETION DATE: 01/09/1994

    02) Install second humidity sensor in ducting that will shut down humidifier if humidity is high.

        TARGET COMPLETION DATE: 04/01/1994 COMPLETION DATE: Not given

---

26. IMPACT ON ENVIRONMENT, SAFETY AND HEALTH:
    None

---

27. PROGRAMMATIC IMPACT:
    None

---

28. IMPACT UPON CODES AND STANDARDS:
    None

29. FINAL EVALUATION AND LESSONS LEARNED:
When steam generating equipment and smoke detectors are located in the same environment, the systems must be designed to prevent excess moisture from coming in contact with the detectors.

30. SIMILAR OCCURRENCE REPORT NUMBERS:
1) None

31. DOE FACILITY REPRESENTATIVE INPUT:

Entered by: Date:

32. DOE PROGRAM MANAGER INPUT;

Entered by: Date:

33. SIGNATURES:

Approved by: Allison, Jerry L. Date: 01/25/1994
Facility Manager/Designee Telephone No.: (513)865-4533

Approved by: HOLBROOK, FRED B. Date: 01/25/1994
DOE Facility Representative/Designee Telephone No.: (513)865-4677

Approved by: KUMAR, RAMENDRA Date: 01/25/1994
DOE Program Manager/Designee Telephone No.: (301)903-2865

OCCURRENCE REPORT

Explosive Facilities

(Name of Facility)

Explosive

(Facility Function)

Mound Plant / EG&G Mound Applied Technologies

(Name of Laboratory, Site or Organization)

Name: ALLISON, JERRY L
Title: DESTRUCTIVE TESTING MANAGER Telephone No.: (513)865-4533

(Facility Manager/Designee)

Name: Jerry L. Allison
Title: Explosive Facilities Manager Telephone No.: (513)865-4533

(Originator)

Name: D. A. Homan Date: 08/08/1994

(Authorized Classifier (AC))

1. OCCURRENCE REPORT NUMBER: ALO-DA-EGGM-EGGMAT03-1994-0011
   Actuation of a Safety System

2. REPORT TYPE AND DATE:

	Date	Time
[ ] Notification	07/11/1994	1538 MTZ
[ ] 10 Day	07/19/1994	1343 MTZ
[ ] 10 Day Update		
[X] Final	08/15/1994	0514 MTZ

3. OCCURRENCE CATEGORY:
   [ ] Emergency [ ] Unusual [X] Off-Normal [ ] Cancelled

4. DIVISION OR PROJECT: EG&G Mound Applied Technologies

5. DOE PROGRAM OFFICE:
   DP - Defense Programs

6. SYSTEM, BLDG., OR EQUIPMENT:
   DS Building

7. UCNI?: No

8. PLANT AREA: Main Hill

9. DATE AND TIME DISCOVERED:
   07/09/1994 1940 (ETZ)

10. DATE AND TIME CATEGORIZED:
    07/09/1994 2020 (ETZ)

DERIVATIVE CLASSIFIER

Don Homan
(Name)

Manager 8/8/94
(Title) (Date)

11. DOE NOTIFICATION:
07/11/1994 0630 (ETZ) Fred B. Holbrook DOE/MB

12. OTHER NOTIFICATIONS:

13. SUBJECT OR TITLE OF OCCURRENCE:
Actuation of a Safety System

---

14. NATURE OF OCCURRENCE:
01) Facility Condition
I. Operational Occurrence

---

15. DESCRIPTION OF OCCURRENCE:
On July 9, 1994, at approximately 1940 hours (ETZ) a sprinkler head in the Development and Standards (DS) Building west Penthouse actuated. The Mound Fire Department responded to the water flow alarm and did not find a fire or any conditions which might have caused the sprinkler head to actuate. The sprinkler head may have activated due to the last few days of extremely hot weather causing the solder in the head to weaken.

This Occurrence Report was reviewed by an Authorized Derivative Classifier (D. A. Homan, Manager) on 08/08/94 at 1030 hours (ETZ) and contains no Classified or UCNI Information.

---

16. OPERATING CONDITIONS OF FACILITY AT TIME OF OCCURRENCE:
Normal Off-hours operations existed during occurrence

---

17. ACTIVITY CATEGORY:
Normal Operations

---

18. IMMEDIATE ACTIONS TAKEN AND RESULTS:
The sprinkler system was shut down and the head replaced. The system was returned to service after the replacement of the head. Labor crews cleaned up the water in the penthouse and the rooms below where a small amount of water came through the ceiling.

---

19. DIRECT CAUSE:
1) EQUIPMENT/MATERIAL PROBLEM
A. Defective or Failed Part

20. CONTRIBUTING CAUSE(S):
7) EXTERNAL PHENOMENA
A. Weather or Ambient Condition

21. ROOT CAUSE:
1) EQUIPMENT/MATERIAL PROBLEM

21. ROOT CAUSE: (continued)
A. Defective or Failed Part

---

22. DESCRIPTION OF CAUSE:
The direct and root cause of the occurrence was the failure of the sprinkler head solder joint which actuated the fire protection system and the water flow alarms. A contributing cause was the high ambient temperatures over the two weeks prior to this occurrence. These unusually high temperatures (upper 90s) could have weakened the solder joint in the sprinkler head.

---

23. EVALUATION: (By Facility Manager/Designee)
Since the West Penthouse of DS-Building is not air conditioned, the temperatures can reach the low 100s or even higher if the ambient temperatures outside are in the upper 90s. Over an extended period of time (2 weeks) it might be possible to weaken the solder joint in an old sprinkler head (set to actuate at 165 degrees Fahrenheit) sufficiently to allow it to fail when a fire is not present.

If 212 degree Fahrenheit heads were used in areas where high ambient temperatures are possible, instead of the standard 165 degree Fahrenheit sprinkler heads, they would be less likely to actuate after extended periods of high temperatures. The response time in the event of a fire would not be that much slower (a second or two) for the 212 degree Fahrenheit heads according to the Mound Fire Chief.

---

24. IS FURTHER EVALUATION REQUIRED?: Yes [ ] No [X]

---

25. CORRECTIVE ACTIONS:
(* = Date added/revised since final report was signed off)

01) Replace Sprinkler Head

TARGET COMPLETION DATE: 07/09/1994 COMPLETION DATE: 07/09/1994

02) Clean up water.

TARGET COMPLETION DATE: 07/09/1994 COMPLETION DATE: 07/09/1994

03) Replace all sprinkler heads in DS Penthouse with 212 degree Fahrenheit heads.

TARGET COMPLETION DATE: 10/01/1994 COMPLETION DATE: Not given

---

26. IMPACT ON ENVIRONMENT, SAFETY AND HEALTH:
NONE

27. PROGRAMMATIC IMPACT:
NONE

28. IMPACT UPON CODES AND STANDARDS:
NONE

29. FINAL EVALUATION AND LESSONS LEARNED:
When sprinkler heads are repeatedly exposed to ambient temperatures approaching those where the device is designed to actuate, they are subject to failure. In areas where the ambient temperature can reach 120 degrees Fahrenheit. it would be best to use 212 degree Fahrenheit sprinklers versus 165 degree Fahrenheit to avoid weakening the solder during extended periods of high ambient temperatures. The higher degree sprinkler heads add very little to the response time of the sprinkler heads in the event of an actual fire.

30. SIMILAR OCCURRENCE REPORT NUMBERS:
1) NONE

31. DOE FACILITY REPRESENTATIVE INPUT:

Entered by: Date:

32. DOE PROGRAM MANAGER INPUT:

Entered by: Date:

33. SIGNATURES:

Approved by: ALLISON, JERRY L Date: 08/08/1994
Facility Manager/Designee Telephone No.: (513)865-4533

Approved by: HOLBROOK, FRED B. Date: 08/13/1994
DOE Facility Representative/Designee Telephone No.: (513)865-4677

Approved by: HAGAN, RALPH A. Date: 08/15/1994
DOE Program Manager/Designee Telephone No.: (301)903-5789

OCCURRENCE REPORT

Explosive Facilities

(Name of Facility)

Explosive

(Facility Function)

Mound Plant / EG&G Mound Applied Technologies

(Name of Laboratory, Site or Organization)

Name: ALLISON, JERRY L
Title: DESTRUCTIVE TESTING MANAGER Telephone No.: (513)865-4533

(Facility Manager/Designee)

Name: JERRY ALLISON
Title: EXPLOSIVE FACILITIES MANAGER Telephone No.: (513)865-4533

(Originator)

Name: D. A. Homan Date: 05/01/1994

(Authorized Classifier (AC))

1. OCCURRENCE REPORT NUMBER: ALO-DA-EGGM-EGGMAT03-1994-0008
   Performance Degradation of Class B Safety Equipment

2. REPORT TYPE AND DATE:

	Date	Time
[ ] Notification	05/02/1994	1106 MTZ
[ ] 10 Day	05/11/1994	1158 MTZ
[ ] 10 Day Update		
[X] Final	05/17/1994	1450 MTZ

3. OCCURRENCE CATEGORY:
   [ ] Emergency [ ] Unusual [X] Off-Normal [ ] Cancelled

4. DIVISION OR PROJECT: EG&G Mound Applied Technologies, Inc

5. DOE PROGRAM OFFICE:
   DP - Defense Programs

6. SYSTEM, BLDG., OR EQUIPMENT:
   DS Building

7. UCNI?: No

8. PLANT AREA: Main Hill Area

9. DATE AND TIME DISCOVERED:
   04/30/1994 1106 (ETZ)

10. DATE AND TIME CATEGORIZED:
    04/30/1994 1215 (ETZ)

Dick Homan
Manager 5/1/94

11. DOE NOTIFICATION:
05/02/1994 0930 (ETZ) John Saluke DOE/DAO

12. OTHER NOTIFICATIONS:

13. SUBJECT OR TITLE OF OCCURRENCE:
Performance Degradation of Class B Safety Equipment

---

14. NATURE OF OCCURRENCE:
01) Facility Condition
E. Vital System/Component Degradation

---

15. DESCRIPTION OF OCCURRENCE:
On April 30, 1994, at approximately 1106 (ETZ) Hours, a common trouble alarm was received from Development and Standards (DS) Building. No personnel were present in the building at the time of the alarm and no evacuation took place. The Fire Department responded to the alarm and found no conditions that would have caused the alarm. The alarm would not reset and an electronic maintenance technician was called to repair the alarm. A lightning storm was present in the area at the time of the alarm.

This Occurrence Report was reviewed by an Authorized Derivative Classifier (D. A. Homan, Manager) on 05/11/94 at 0700 hours (ETZ) and contains no Classified or UCNI Information.

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16. OPERATING CONDITIONS OF FACILITY AT TIME OF OCCURRENCE:
Normal Off-Hours Operation existed during occurrence.

---

17. ACTIVITY CATEGORY:
Normal Operations

---

18. IMMEDIATE ACTIONS TAKEN AND RESULTS:
The electronic maintenance technician replaced a circuit board in the Data Gathering Panel (DGP), which restored the fire alarms to DS Building.

---

19. DIRECT CAUSE:
1) EQUIPMENT/MATERIAL PROBLEM
A. Defective or Failed Part

20. CONTRIBUTING CAUSE(S):

21. ROOT CAUSE:
7) EXTERNAL PHENOMENA
A. Weather or Ambient Condition

22. DESCRIPTION OF CAUSE:
The direct cause of the common trouble alarm on the fire alarm system for the (DS) Building was the failure of Data Gather Panel (DGP) circuit board due to an apparent over voltage situation. The weather conditions at the time of the occurrence (rain and lightning storms) were contributing to the incident. The root cause of the occurrence was a transient voltage surge to the DS Building DGP which caused the failure of the circuit board. The transient voltage surge was apparently produced by the lightning storm.

23. EVALUATION: (By Facility Manager/Designee)
Mound's fire alarm system is rather old and does not have the surge arrestors available on newer systems. Until funds are made available to upgrade the fire alarm and detection systems these types of incidents will continue to occur.

24. IS FURTHER EVALUATION REQUIRED?: Yes [ ] No [X]

25. CORRECTIVE ACTIONS:
(* = Date added/revised since final report was signed off)

01) Replace circuit board in DS-Building DGP.

TARGET COMPLETION DATE: 04/30/1994 COMPLETION DATE: 04/30/1994

26. IMPACT ON ENVIRONMENT, SAFETY AND HEALTH:
None

27. PROGRAMMATIC IMPACT:
None

28. IMPACT UPON CODES AND STANDARDS:
None

29. FINAL EVALUATION AND LESSONS LEARNED:
Since Mound is being converted to economic development and other facilities are being shut down, it is unlikely that a substantial investment would be made to upgrade the fire alarm and detection systems at this time.

30. SIMILAR OCCURRENCE REPORT NUMBERS:
1) ALO-DA-EGGM-EGGMAT04-1994-0003

---

31. DOE FACILITY REPRESENTATIVE INPUT:

Entered by: Date:

---

32. DOE PROGRAM MANAGER INPUT:

Entered by: Date:

---

33. SIGNATURES:

Approved by: ALLISON, JERRY L Date: 05/11/1994
Facility Manager/Designee Telephone No.: (513)865-4533

Approved by: HOLBROOK, FRED B. Date: 05/11/1994
DOE Facility Representative/Designee Telephone No.: (513)865-4677

Approved by: KUMAR, RAMENDRA Date: 05/17/1994
DOE Program Manager/Designee Telephone No.: (301)903-2865

OCCURRENCE REPORT

Main Hill Facilities

(Name of Facility)

Balance-of-Plant

(Facility Function)

Mound Plant / EG&G Mound Applied Technologies

(Name of 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-EGGMAT03-1996-0005
   Discovery of Legacy Contamination in DS Building (ROLL-UP)

2. REPORT TYPE AND DATE:

	Date	Time
[ ] Notification	11/06/1996	1401 MTZ
[ ] Initial Update	11/07/1996	1827 MTZ
[ ] Latest Update	03/27/1997	0740 MTZ
[X] Final		

3. OCCURRENCE CATEGORY:
   [ ] Emergency [ ] Unusual [X] Off-Normal [ ] Cancelled

4. NUMBER OF OCCURRENCES: 3 ORIG. OR:

5. DIVISION OR PROJECT: E G & G Mound Applied Technologies

6. SECRETARIAL OFFICE: EM - Environmental Management

7. SYSTEM, BLDG., OR EQUIPMENT:
   DS - Building

8. UCNI?: No

9. PLANT AREA: Main Hill Area

10. DATE AND TIME DISCOVERED:
    11/05/1996 1515 (ETZ)

11. DATE AND TIME CATEGORIZED:
    11/05/1996 1520 (ETZ)

12. DOE NOTIFICATION:

11/05/1996 1545 (ETZ)	Madan Dev	DOE/MEMP

13. OTHER NOTIFICATIONS:

01/29/1997 1020 (ETZ)	Fred Holbrook	DOE/MEMP
11/13/1996 0930 (ETZ)	Fred Holbrook	DOE/MEMP
11/05/1996 1545 (ETZ)	Madan Dev	DOE/MEMP

14. SUBJECT OR TITLE OF OCCURRENCE:
Discovery of Legacy Contamination in DS Building (ROLL-UP)

---

15. NATURE OF OCCURRENCE:
01) Facility Condition
D. Loss of Control of Radioactive Material/Spread Contamination

---

16. DESCRIPTION OF OCCURRENCE:
Occurrence #1 -
At 0850 hours (ETZ) on November 5, 1996, Radiological Control Technicians performing a Safe Shutdown radiological survey discovered radiological contamination on a storage cabinet located in DS building, room 221. DS building, room 221, had not previously been posted as a control area. Smears were taken from the cabinet for scintillation analysis. At 1515 hours (ETZ), scintillation results indicated a maximum tritium activity of 2,988,210 dpm/100 cm2. The DOE Radiological Control Manual, Table 2-2, specifies that the maximum allowable amount of removable tritium is 10,000 dpm/100cm2. Since the removable tritium value exceeded twice the allowable DOE RADCON Table 2-2 value, this occurrence was determined to be a DOE 232.1 reportable occurrence.

Between October 28, 1996 and November 6, 1996, other radiologically contaminated items have been discovered in seven other rooms in DS building. Investigations of some of the recently discovered items is still in process. Business entities performing non-DOE related work at the site have had access to some of the rooms where contamination was discovered. Once contamination is discovered in a room, the room is immediately posted as a "Controlled Area". All rooms which still contain contamination or contaminated equipment have been posted as a Controlled Area.

Radiological operations personnel do not plan to post the entire building as a Controlled Area because their analysis of survey results performed to date do not indicate there is a health risk to employees or the public.

This occurrence report was reviewed by an Authorized Derivative classifier (Donald V. Dixon, Space Manager) on 11/7/96 at 1600 hours (ETZ) and contains no classified or UCNI information.

Occurrence #2 - At 0900 (ETZ) on November 12, 1996 Radiological Survey Analysis determined that samples taken

16. DESCRIPTION OF OCCURRENCE: (continued)
from a circuit test board on November 6, 1996 in DS Building room #205 contained 107,238 dpm/100 cm2 of removable tritium contamination.

Occurrence #3 - At 0935 (ETZ) on January 29, 1997 Radiological Survey Analysis determined that samples taken from a metrology equipment storage cabinet on January 27, 1997 in an Uncontrolled Area of DS Building Room #116 contained 23,870 dpm/100 cm2 of removable Tritium contamination.

17. OPERATING CONDITIONS OF FACILITY AT TIME OF OCCURRENCE:
Normal day time operations

18. ACTIVITY CATEGORY:
Shutdown

19. IMMEDIATE ACTIONS TAKEN AND RESULTS:
Occurrence #1 -
DS building, room 221, was posted as a Controlled Area. Other surrounding rooms where the recently discovered contaminated materials and sealed sources reside were also posted as Controlled Areas. A 100% Radiological Survey for DS building is in process.
Occurrence #2 -
DS Building, room #205, was posted as a Radiological Controlled Area. The contaminated Circuit test board was removed and placed in a Radiological Materials Area.
Occurrence #3 -
DS Building, room #116 was posted as a Radiological Controlled Area. The contaminated cabinet drawer was removed and placed in a Radilogical Materials 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

23. DESCRIPTION OF CAUSE: (continued)
years ago and is being discovered now because of increased monitoring & improved instrumentation sensitivities.

24. EVALUATION: (By Facility Manager/Designee)
There are presently no known uptakes associated with this occurrence.
No effect on the plant, systems, or the environment is expected. The discovery of legacy contamination is expected during monitoring of Safe Shutdown activities.

25. IS FURTHER EVALUATION REQUIRED?: Yes [ ] No [X]

26. CORRECTIVE ACTIONS:
(* = Date added/revised since final report was signed off)

01) Radiological Operations will survey active User Centers and all equipment.

TARGET COMPLETION DATE: 12/01/1996 COMPLETION DATE: 12/01/1996

02) Investigate radiological survey records of Reconfiguration equipment and materials that were transferred to other facilities. If surveys were not conducted, contact the other facilities to notify them of the possibility of contamination of equipment and materials received from DS Building.

TARGET COMPLETION DATE: 03/01/1997 COMPLETION DATE: 03/20/1997

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 - 2,988,210 dpm/100 cm2 on a cabinet. The allowable limit (from RadCon Manual Table 2-2) for an Uncontrolled Area on-site is 10,000 dpm/100 cm2 for Tritium.

Occurrence #2 - 107,238 dpm/100 cm2 removable tritium contamination. The allowable limit (from RadCon Manual Table 2-2) for an Uncontrolled Area on-site is 10,000 dpm/100 cm2.

27. IMPACT ON ENVIRONMENT, SAFETY AND HEALTH: (continued)

Occurrence #3 - 23,870.4 dpm/100 cm2 on the cabinet drawer. 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 UPON CODES AND STANDARDS:
None

30. LESSONS LEARNED:
The potential that legacy contamination is present in multiuse buildings is very high and all equipment or materials that are removed from the buildings should, at the very least, be evaluated for radiological contamination. The is especially important if the equipment or materials is being transfered offsite.

The routine statistical radiological survey of all bui would be beneficial in determining which buildings have the potential for contamination.

31. SIMILAR OCCURRENCE REPORT NUMBERS:
1) OH-MB-EGGM-EGGMAT03-1996-0001
2) OH-MB-EGGM-EGGMAT03-1996-0004

32. USER FIELD #1:

33. USER FIELD #2:

34. DOE FACILITY REPRESENTATIVE INPUT:

Entered by: Date:

35. DOE PROGRAM MANAGER INPUT:

Entered by: Date:

36. SIGNATURES: (FM's original signature on hardcopy)

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

---

36. SIGNATURES: (FM's original signature on hardcopy) (continued)

Approved by: Date:
DOE Facility Representative/Designee Telephone No.:

Approved by: Date:
DOE Program Manager/Designee Telephone No.:

OCCURRENCE REPORT

Main Hill Facilities
(Name of Facility)

Balance-of-Plant
(Facility Function)

Mound Plant / EG&G Mound Applied Technologies
(Name of Laboratory, Site or Organization)

Name: Jeffrey L. Boston
Title: Facility 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)

D.V. Dixon 04/09/97
Name: D. V. Dixon Date: 04/09/1997
(Authorized Classifier (AC))

1. OCCURRENCE REPORT NUMBER: OH-MB-EGGM-EGGMAT03-1996-0006
   Ethylene Glycol Leak - DS Building

2. REPORT TYPE AND DATE:

	Date	Time
[ ] Notification	12/09/1996	1430 MTZ
[ ] Initial Update	01/23/1997	0653 MTZ
[ ] Latest Update	04/09/1997	1254 MTZ
[X] Final		

3. OCCURRENCE CATEGORY:
   [ ] Emergency [ ] Unusual [X] Off-Normal [ ] Cancelled

4. NUMBER OF OCCURRENCES: 1 ORIG. OR:

5. DIVISION OR PROJECT: E G & G Mound Applied Technologies

6. SECRETARIAL OFFICE: EM - Environmental Management

7. SYSTEM, BLDG., OR EQUIPMENT:
   DS Building

8. UCNI?: No

9. PLANT AREA: Main Hill Area

10. DATE AND TIME DISCOVERED:
    12/08/1996 1435 (ETZ)

11. DATE AND TIME CATEGORIZED:
    12/08/1996 1545 (ETZ)

12. DOE NOTIFICATION:
12/09/1996 0740 (ETZ) Fred Holbrook DOE/MEMP

13. OTHER NOTIFICATIONS:

14. SUBJECT OR TITLE OF OCCURRENCE:
Ethylene Glycol Leak - DS Building

---

15. NATURE OF OCCURRENCE:
02) Environmental
B. Hazardous Substances/Regulated Pollutants/Oil Releases

---

16. DESCRIPTION OF OCCURRENCE:
At 1435 ETZ on 12/08/96 on duty Maintenance personnel determined that an ethylene glycol leak had occurred in DS Building Air Handler #6 cooling coil.
The leak comprised a total of 1880 gallons of 30% solution of Ethylene Glycol. This corresponds to 5,245 pounds of Ethylene Glycol. The CERCLA reportable quantity (per 40 CFR 302) for Ethylene Glycol is 5,000 pounds.

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17. OPERATING CONDITIONS OF FACILITY AT TIME OF OCCURRENCE:
Normal operating conditions

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18. ACTIVITY CATEGORY:
Normal Operations

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19. IMMEDIATE ACTIONS TAKEN AND RESULTS:
Upon discovery of the loss of ethylene glycol pressure, Ethylene Glycol Spill Procedures were initiated. The location of the leak was determined and valved off, and the discharged ethylene glycol contained in the building and the Waste Water Treatment Plant equalization basins with no known release off site.

The failed fitting was replaced and the system returned to operation.

---

20. DIRECT CAUSE:
1) EQUIPMENT/MATERIAL PROBLEM
A. Defective or Failed Part

21. CONTRIBUTING CAUSE(S):

22. ROOT CAUSE:
2) PROCEDURE PROBLEM
A. Defective or Inadequate Procedure

23. DESCRIPTION OF CAUSE:
The Root Cause of the event that permitted the Ethylene Glycol leak to exceed the CERCLA reportable quantity was an inadequate Glycol Spill Procedure. The procedure did not provide the operator with the most logical and explicit instructions that would assist in quickly detecting the location of a Ethylene Glycol leak.

The Direct cause of the Ethylene Glycol leak was determined to be a failed fitting located in the DS Building penthouse attached to Airhandling Unit #6. The fitting appeared to have been subjected to vibration over a long period of time.

24. EVALUATION: (By Facility Manager/Designee)
No effect on the plant or the system is expected. The spilled Ethylene Glycol entered the sanitary sewer system through the floor drains in DS Building penthouse, thus allowing the glycol to be contained at the Waste Water Treatment Plant Equalization basins. The Ethylene Glycol tainted influent was further diluted and pumped to a 65,000 gallon digester in preparation for processing.

25. IS FURTHER EVALUATION REQUIRED?: Yes [ ] No [X]

26. CORRECTIVE ACTIONS:
(* = Date added/revised since final report was signed off)

01) Modify the Ethylene Glycol Spill Procedure in order to; 1) change the order of loop isolation sequence, 2) visually verify that isolation valves have actuated , and 3) Operate secondary pumps to stabilize system,.

TARGET COMPLETION DATE: 01/16/1997 COMPLETION DATE: 01/15/1997

27. IMPACT ON ENVIRONMENT, SAFETY AND HEALTH:
No impact to the onsite/offsite environment, safety, and health of workers or the public is expected. However, The spilled Ethylene Glycol did enter the sanitary sewer system through the floor drains in DS Building penthouse. The glycol was contained at the Waste Water Treatment Plant Equalization basins and the Ethylene Glycol tainted influent was further diluted and pumped to a 65,000 gallon digester in preparation for processing.

28. PROGRAMMATIC IMPACT:
There was no Programmatic Impact.

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29. IMPACT UPON CODES AND STANDARDS:
None

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30. LESSONS LEARNED:
None

---

31. SIMILAR OCCURRENCE REPORT NUMBERS:
1) OH-MB-EGGM-EGGMAT03-1996-0003

---

32. USER FIELD #1:

33. USER FIELD #2:

---

34. DOE FACILITY REPRESENTATIVE INPUT:

Entered by: Date:

---

35. DOE PROGRAM MANAGER INPUT:

Entered by: Date:

---

36. SIGNATURES: (FM's original signature on hardcopy)

Approved by: Jeffrey L. Boston Date: 04/09/1997
Facility Manager/Designee Telephone No.: (937)865-3262

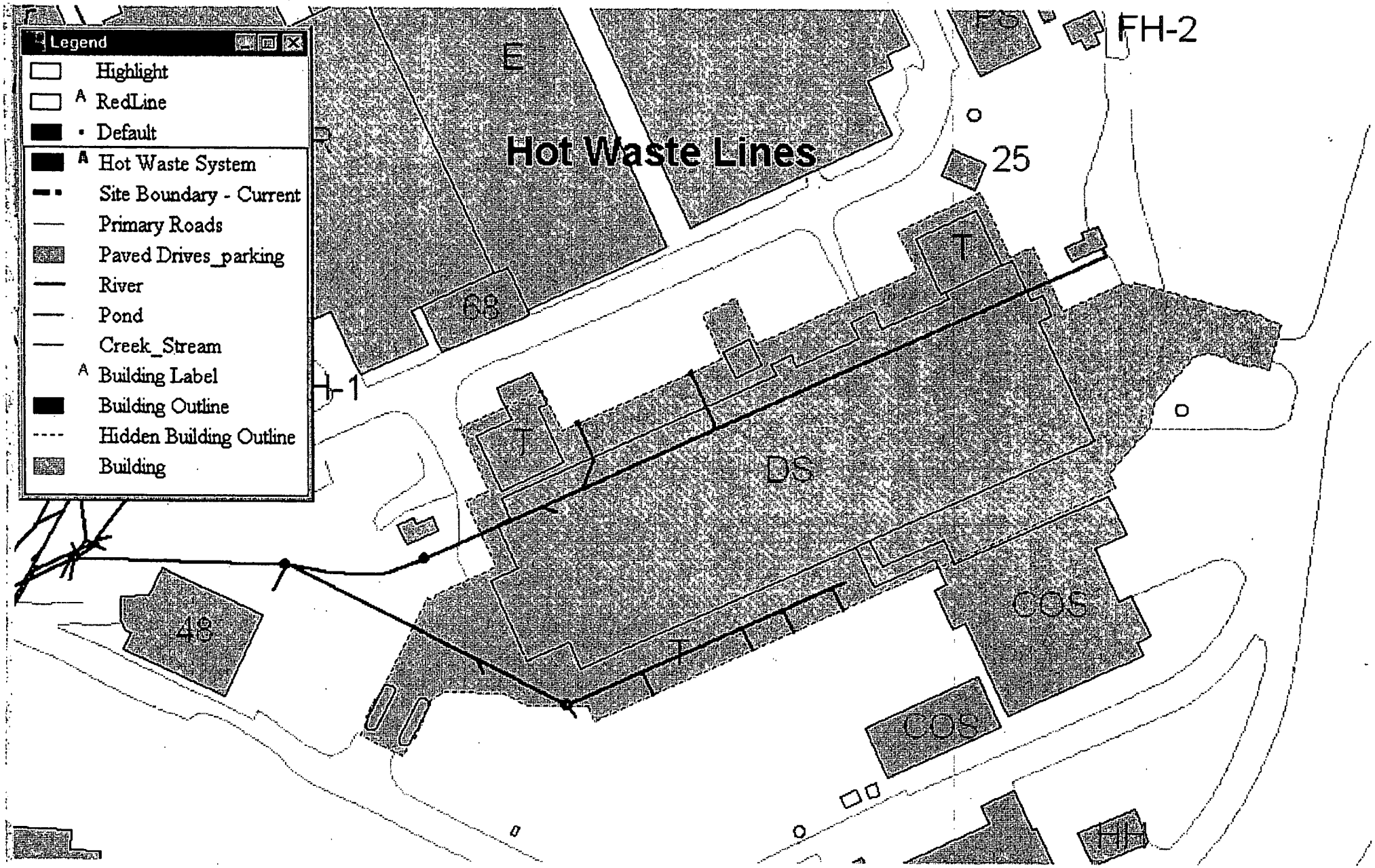
Approved by: Date:
DOE Facility Representative/Designee Telephone No.:

Approved by: Date:
DOE Program Manager/Designee Telephone No.:

Appendix N

UGL/CO-60 Information

(Excerpts)


Legend
Highlight
RedLine
Default
Hot Waste System
Site Boundary - Current
Primary Roads
Paved Drives_parking
River
Pond
Creek_Stream
Building Label
Building Outline
Hidden Building Outline
Building
Hot Waste Lines
FH-2
25
68
48
DS
COS
COS

RESULTS OF RADIOLOGICAL AND VIDEO SURVEYS OF DRAIN LINES AT THE US DOE MOUND FACILITY WITH THE PIPE EXPLORER™ SYSTEM

Prepared for

EG&G Mound Applied Technologies
US DOE Mound Facility

Work Performed Under Purchase Order 14535

January 1997

Science & Engineering Associates, Inc.
6100 Uptown Blvd.
Albuquerque, New Mexico 87110
(505) 884-2300

RESULTS OF RADIOLOGICAL AND VIDEO SURVEYS OF DRAIN LINES AT THE US DOE MOUND FACILITY WITH THE PIPE EXPLORER™ SYSTEM

INTRODUCTION

EG&G Mound Applied Technologies contracted with Science & Engineering Associates, Inc. (SEA) to perform both radiological and video surveys of portions of two buried radiological waste transport drain lines at the US DOE Mound Facility. This report summarizes the results of that characterization effort.

SEA personnel first visited the Mound Facility on November 4, 1996, to attend a kick-off meeting and general orientation of the work site. SEA then calibrated the 2x2-Inch sodium iodide gamma detector for the specific pipe geometries of the lines. The Pipe Explorer equipment was then mobilized, arriving at the Mound Facility on Monday December 2, 1996. The two person SEA field crew arrived at the facility on Monday as well.

New data regarding the radiological conditions in the drain lines required that the SEA personnel complete the Mound Facility, Radiological Worker II training. This training was completed on Monday and Tuesday mornings. The equipment was unpacked on Monday evening and staged at the first access point, manhole STA 2+08. Some minor repairs were made to the equipment on Tuesday afternoon to correct damage suffered during shipment to the Mound Facility. After completing this task, the surveys were initiated. The last survey was completed during the afternoon of Friday December 13. The equipment was then demobilized, and surveyed for potential contamination by an EG&G Radiological Control Technician (RCT). The equipment was packed for shipment on Monday, December 16, and shipped out on Tuesday December 17.

Many of the drain lines surveyed, exhibited properties which made deployment of the Pipe Explorer™ inverting membrane difficult at best. At the outset of this project is was assumed that the drain lines would exhibit little, if any, radiological contamination. Thus, the intent was to survey the entire length of the drain lines to verify that no significant Co-60 contamination was present. The measurements quickly revealed that there was, in fact, substantial amounts of residual Co-60 contamination in each of the drain lines entered. Because of this finding, it was decided not to expend the extra time, both on the part of the EG&G support personnel and the SEA personnel, that would have been necessary to survey the entire length of the drain lines, as the return for the extra effort would have been of marginal value.

DESCRIPTION OF THE DRAIN LINES SURVEYED

The pipe segments surveyed were part of a waste transport system composed of two lines (A-1) and (A-2), which join at Manhole 10. Table 1 provides a listing of the four pipe runs that were surveyed, giving the run ID that is used throughout the remainder of this report, as well as various information particular to the pipe run. The original scope included a fifth run to begin at Manhole 10 and run to the west. The EG&G Project Manager dropped this run from the scope as it became clear that all of the pipes exhibited significant amounts of radiological contamination, and would eventually need to be excavated. Figure 1 shows a sketch of the drain lines that were surveyed. This sketch is not to scale, and is intended only to show the orientation of the lines with respect to each other and identify major features in the area.

Table 1. Description of pipe runs surveyed.

Run ID	Access ID manhole	Deployment direction	Pipe diameter (in.)	Segment length (ft.)	Video survey Length (ft.)	Radiological survey length (ft.)
Run # 1 (A-2)	MH STA 2+08	West->East	8	202	121	71
Run # 2 (A-2)	MH STA 2+08	SE->NW	5	210	29	28
Run # 3 (A-1)	MH STA 2+33	West->East	8	500	259	260
Run # 4 (A-2)	MH STA 2+33	East->West	8	90	83	86

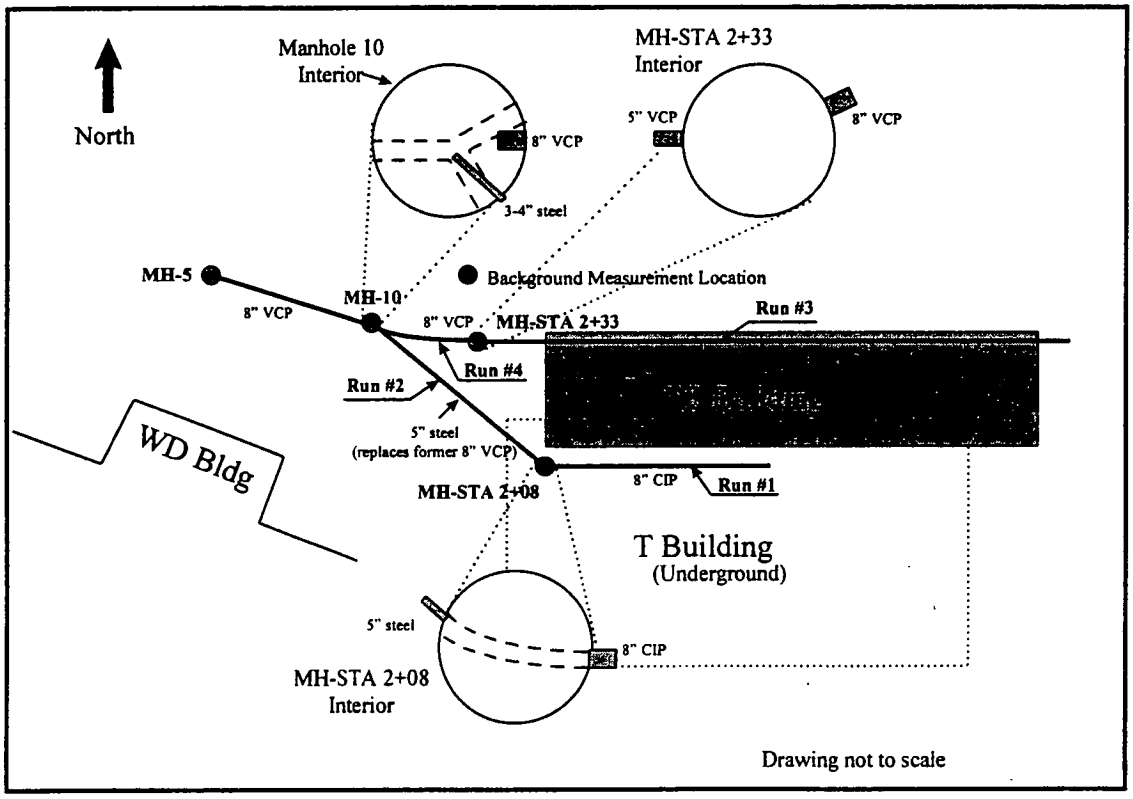


Figure 1. Sketch of the pipe segments surveyed showing the access manholes and Run #'s.

VIDEOTAPING

The videotaping was accomplished by towing a small black & white, CCD video camera equipped with a pin-hole lens. This camera is mounted in a sensor housing that is deployable with the Pipe Explorer™ system. The housing is also equipped with several small incandescent lamps to illuminate the pipe interior. The video signal, with the text identifying the run, date, time and camera distance, was recorded in SVHS format on a high resolution VCR. Two copies of an edited version of this video master are provided in standard VHS format for each of the four pipe runs videotaped. The pipe run ID imprinted on each tape is referenced in Table 1 and Figure 1 for correlation with location of the pipe segments. Due to obstructions and blind ends in some of the pipe runs, SEA was not always able to videotape the entire run length. The actual footage of video surveys performed for each run is shown in Table 1. A short description of the prominent features of each of the videotapes is provided below.

performed during retrieval, which accounts for the depth numbers decreasing from the 0 ft. to -28.8 ft. at the start of the pre-pipe. The end of the membrane is clearly visible, just behind the knot, at the start of the tape. The initial orientation of the pipe bottom is at 1 O'clock. By -3.7 ft. (25.1 ft actual distance) the pipe bottom has changed orientation to the 3 O'clock position. The debris in the bottom of the pipe appears to be a combination of loose pipe scale, gravel, and fine grained sediment. Note the ribbon of extra membrane at the 9 O'clock position. At approximately -12.3 ft indicated (16.5 ft. actual) a ribbon appears at the 6 O'clock position, indicating a decrease in the pipe ID. At -24 ft. indicated (4.8 ft. actual) the pipe bottom changes orientation to the 12 O'clock position. At -28.8 ft indicated the camera starts into the pre-pipe, ending the survey.

Run #3 (A-1)

The videotape for Run #3 (A-1) was initiated at manhole STA 2+33, with deployment occurring in an easterly, upstream direction. This line was constructed from 8-inch vitrified clay pipe. The videotape starts at the end of the pre-pipe. This line is characterized by zones of substantial debris and sediment accumulation interspersed with very clean zones. Initially the pipe bottom is oriented at the 10 O'clock position as the camera is held against the top of the pipe, hanging upside down. A sharp object protruding at the 3 O'clock position resulted in a punctured membrane during the first attempt at video taping this line. At 0.5 ft. the pipe bottom changes orientation to the 5 O'clock position. A pipe joint occurs at 2.5 ft., coinciding with a change in the slope of the drain line. Note that the line is also substantially cleaner. At 4.3 ft. the pipe bottom changes orientation to the 3 O'clock position. Pipe joints visible at the 5.8 and 8.8 ft. positions indicate pipe lengths of 3 ft. were used in construction of the drain line. The pipe bottom changes orientation to the 12 O'clock position at approximately 6.4 ft. The object seen on the inside of the membrane at 10.1 ft. is a piece of grass, picked up when the membrane was stretched out on the grass for measurement prior to its loading into the manual canister. A short section of pipe from 32.7 ft to 34.3 ft. coincides with a change in the slope of the line. At 32.4 ft. the pipe bottom occurs at approximately the 10:30 position as is evident from the dark staining showing the bottom. At 34 ft. the pipe bottom is at the 9 O'clock position and changes to the 6 O'clock position at approximately 34.6 ft. as the camera passes over the change in slope. At approximately 38 ft. accumulation of small amounts of sediment is observable. At 44.5 ft. the pipe bottom is at the 3 O'clock position. Greater thickness of sediment and debris are observable at 55 ft., increasing in depth at approximately 68 ft. A small pile of debris occurs at 110 ft. At 117 ft. the pipe bottom has changed orientation to the 12 O'clock position. Also note a small volume of fluid flowing between the membrane and the pipe wall at this distance. A "T" is observable at the 4 O'clock position at a depth of 120.7 ft. Also note the small volume of fluid flowing in from the "T" and the debris pile directly below the "T" on the pipe bottom. The debris pile and sediment accumulation on the upstream side of this pile extend to a distance of approximately 132 ft. Past this the pipe is relatively clean and free from sediment and debris until approximately 139 ft., where another pile of debris occurs. At this point the pipe bottom is at the 10 O'clock position. Another pile of debris occurs at 152 ft. The debris from 159 ft. to 190 ft. appear to include angular pieces of gravel. A relatively clean section of pipe begins at 198 ft. A "T" is visible at 202 ft. at the 4 O'clock position. At this point the pipe bottom is between the 11 O'clock and 12 O'clock positions. Upstream from this "T" is a debris pile approximately 3 inches deep. There is an apparent build-up of fluid between the pipe wall and the membrane beginning at approximately 213 ft. At this distance the pipe bottom is at the 11 O'clock position. This accumulation of fluid continues to the end of the deployment at 256.8 ft.

Run #4 (A-1)

The videotape for Run #4 was initiated at manhole STA 2+33, with deployment occurring in a westerly to north westerly, downstream direction. This line was constructed from 8-inch vitrified clay pipe. In general this pipe exhibited almost no accumulation of debris and sediment. A 12-inch Lay Flat membrane was used for this pipe, which was slightly undersized, since the pipe exhibited no accumulation of sediment. This resulted in the membrane being decoupled from the pipe wall over a portion of the pipe's interior circumference. Since there were no significant features observed in the pipe it was decided not to repeat the video run with the larger 14-inch Lay Flat membrane. The videotape starts with the

of concluding that there is activity above the background activity when none is actually present and a 5% chance of concluding that there is not activity above the background activity when there actually is. It is important to note that at the MDA a binary decision is being made; Is there activity above background or not? No meaningful quantitative assessment of the activity can be made at this level. As activity levels increase, the certainty in the measure of the amount (or concentration) of activity increases substantially.

The MDA for measurements made inside a pipe geometry, assuming uniform activity distribution, is given by the following formula:

$$MDA = \frac{2.71 + 4.65\sqrt{BKR \cdot t}}{Y \cdot t}$$

Where: MDA = Minimum Detectable Activity Concentration (dpm/100 cm^2)
BKR = Background Count Rate (cps)
Y = Yield Factor [net cps/(dpm/ 100 cm^2)]
t = The count time (s)

An MDA was computed for the measurement conditions incurred for each pipe surveyed. These MDA's are plotted on the data plots in Appendix B and given in the header information of the tabular listings for each survey in Appendix C. The count time used in these computations is the combined count time in those cases where shorter count times were combined into longer intervals.

The measurement results are provided in graphical form in Appendix B. A separate graph is provided for each pipe surveyed with distance from the start of the pipe plotted on the X axis and the computed activity density plotted on the Y axis. The measurement results are also presented in tabular form in Appendix C. The information particular to the run, such as Run ID, information about the pipe, instrument settings used, effective count time, yield factor, background count rate, logging rate, and MDA are all included in the header for the table. The table itself consists of three columns; The sample time, the distance from the pipe datum, and the computed Co-60 activity density in dpm/100 cm^2. The data for Run #3 (A-1) were collected over two days. This break in the data collection appears on page 18 of the data table. Because the data collection occurred over more than one day, a second check source count was performed when the detector was removed from the pipe on 12/13/96. The results of both the beginning and ending check source counts are listed in the table header. Difficulties with the data acquisition during Run #4 (A-1) resulted in the loss of the initial portion of the data for that run. Thus, the initial portion of the run was repeated. This accounts for the break in the sample time seen on page 2 in the tabular data.

DISCUSSION OF RESULTS

In general, the measurement results were other than expected. The initial belief was that these drain lines would exhibit little, if any, residual Co-60 contamination. The data show quite the contrary. Every line surveyed exhibited substantial amounts of residual Co-60 contamination. In general, it appears as though the increased levels of contamination coincide with accumulation of sediment and debris in the lines. The largest activity density measured occurs in Run #3 (A-1) at a distance of 204 ft., which coincides with a debris accumulation and a "T" junction into to the drain line from T-Building.

A special note is warranted regarding the large activity spike seen at a distance of -2.24 ft. in Run #2 (A-2). At this distance the detector was situated within the pre-pipe, approximately at the center of manhole STA 2+08. The pre-pipe was known to be free of contamination, indicating that the signal observed was coming from either surface contamination within the manhole, or contaminated soil associated with the manhole. It should also be noted that because the detector was not in the calibrated geometry, i.e. within the pipe, the activity present is higher that indicated by the data. Note that this feature, although more subdued, occurs in the data from Run #1 (A-2) as well.

Pipe Explorer™ Data Summary Table
US DOE Mound Facility

Run ID:	Run #3 (A-1)
Access Point ID:	Manhole STA 2+33
Pipe Depth Datum:	Start of Pipe In Man Hole
Pipe Diameter:	8-Inch
Pipe Material:	Vitrified Clay

Measurement Parameters:

Radiation Type Measured:	Gamma (Co-60 Energy Window)	
Detector S/N:	1945699 (2x2 NaI)	
Membrane Thickness:	4 Mil	
Effective Count Time:	10 seconds	
Yield Factor:	2.40E-03	(cps/[dpm/100 cm²])
Background Count Rate:	7.56	(cps)
Logging Rate:	1.0	(ft./min.)
MDA	1,800	(dpm/100 cm²)
Checksource (cps)	652	cps
End Chksource (cps)	659	cps
Distance to Pipe Datum:	10.25	(ft.)
Total Deployed Depth:	260.07	(ft.)

Instrument Parameters:

Canberra 2022 Amp:		Canberra 2030 SCA	
Coarse Gain	100	LLD	4.2 Volts
Fine Gain	1.15	Window	1.8 Volts
Polarity	+	ΔE	10 Volts
Shaping	1 µsec.		
Ortec 478 High Voltage Supply			
HV	750 Volts		
(Pot Setting)	7.50		

Sample Time:	Distance from Pipe Datum (ft.)	Measured Co-60 Activity (dpm/100 cm²)
12/12/96		
12:45:41 PM	-10.25	-1524
12:45:51 PM	-10.10	-1483
12:46:01 PM	-10.01	-1358
12:46:11 PM	-9.96	-1774
12:46:21 PM	-9.87	-1608
12:46:31 PM	-9.82	-1566
12:46:41 PM	-9.68	-1733
12:46:51 PM	-9.47	-1691
12:47:01 PM	-9.27	-1733
12:47:11 PM	-9.23	-1483
12:47:21 PM	-9.05	-1483
12:47:31 PM	-8.64	-1358
12:47:41 PM	-8.33	-1108
12:47:51 PM	-8.09	-1399
12:48:01 PM	-7.81	-1899
12:48:11 PM	-7.53	-1649
12:48:21 PM	-7.01	-1649
12:48:31 PM	-6.38	-2066
12:48:41 PM	-5.88	-1941
12:48:51 PM	-4.94	-1524
12:49:01 PM	-4.12	-1316
12:49:11 PM	-3.38	-1274
12:49:21 PM	-2.63	-608
12:49:31 PM	-2.11	-149
12:49:41 PM	-1.58	601
12:49:51 PM	-1.06	226
12:50:01 PM	-0.56	2017
12:50:11 PM	0.06	3017
12:50:21 PM	0.63	9559
12:50:31 PM	1.17	19601
12:50:41 PM	1.72	24184
12:50:51 PM	2.33	15392
12:51:01 PM	2.68	12726
12:51:11 PM	2.79	10809
12:51:21 PM	2.83	11934
12:51:31 PM	2.87	11434
12:51:41 PM	2.89	11767
12:51:51 PM	2.91	10517
12:52:01 PM	2.92	10392
12:52:11 PM	2.99	10517
12:52:21 PM	3.08	11101
12:52:31 PM	3.17	11184
12:52:41 PM	3.27	10309
12:52:51 PM	3.37	10851
12:53:01 PM	3.46	11059
12:53:11 PM	3.56	11226
12:53:21 PM	3.67	10809
12:53:31 PM	3.78	13976
12:53:41 PM	3.88	14226
12:53:51 PM	3.99	16726
12:54:01 PM	4.07	17684
12:54:11 PM	4.18	21101
12:54:21 PM	4.29	21351
12:54:31 PM	4.39	22809
12:54:41 PM	4.50	26476
12:54:51 PM	4.60	28226
12:55:01 PM	4.69	29059
12:55:11 PM	4.78	23726
12:55:21 PM	4.87	17559
12:55:31 PM	4.97	14476
12:55:41 PM	5.06	12517
12:55:51 PM	5.18	10476
12:56:01 PM	5.31	10601
12:56:11 PM	5.41	10559

Prepared By: D.T. Kendrick

Validated By:

Sample Time:	Distance from Pipe Datum (ft.)	Measured Co-60 Activity (dpm/100 cm^2)
12:56:21 PM	5.51	9767
12:56:31 PM	5.60	9684
12:56:41 PM	5.68	9226
12:56:51 PM	5.78	9851
12:57:01 PM	5.87	8559
12:57:11 PM	5.95	9642
12:57:21 PM	6.03	9559
12:57:31 PM	6.11	8809
12:57:41 PM	6.19	7976
12:57:51 PM	6.27	9184
12:58:01 PM	6.35	8351
12:58:11 PM	6.42	8392
12:58:21 PM	6.49	7184
12:58:31 PM	6.55	10309
12:58:41 PM	6.63	9767
12:58:51 PM	6.71	8392
12:59:01 PM	6.78	7101
12:59:11 PM	6.87	7976
12:59:21 PM	6.96	8851
12:59:31 PM	7.13	10976
12:59:41 PM	7.29	13934
12:59:51 PM	7.45	17517
1:00:01 PM	7.61	19684
1:00:11 PM	7.76	15684
1:00:21 PM	7.91	11226
1:00:31 PM	8.07	10226
1:00:41 PM	8.24	9434
1:00:51 PM	8.39	8809
1:01:01 PM	8.55	6101
1:01:11 PM	8.70	7851
1:01:21 PM	8.86	7059
1:01:31 PM	9.03	6851
1:01:41 PM	9.19	7601
1:01:51 PM	9.36	7059
1:02:01 PM	9.51	7392
1:02:11 PM	9.65	7267
1:02:21 PM	9.80	8559
1:02:31 PM	9.96	7226
1:02:41 PM	10.11	9851
1:02:51 PM	10.27	14351
1:03:01 PM	10.43	26851
1:03:11 PM	10.57	42309
1:03:21 PM	10.71	34976
1:03:31 PM	10.84	27184
1:03:41 PM	10.99	22642
1:03:51 PM	11.12	19476
1:04:01 PM	11.29	16976
1:04:11 PM	11.45	17059
1:04:21 PM	11.61	14267
1:04:31 PM	11.77	14059
1:04:41 PM	11.94	13601
1:04:51 PM	12.11	13809
1:05:01 PM	12.28	12976
1:05:11 PM	12.45	13434
1:05:21 PM	12.61	16934
1:05:31 PM	12.76	13934
1:05:41 PM	12.92	15226
1:05:51 PM	13.08	18642
1:06:01 PM	13.25	19976
1:06:11 PM	13.33	22059
1:06:21 PM	13.44	28434
1:06:31 PM	13.59	37892
1:06:41 PM	13.74	42142
1:06:51 PM	13.89	42142
1:07:01 PM	14.05	44226
1:07:11 PM	14.21	45267
1:07:21 PM	14.36	47226
1:07:31 PM	14.50	42809
1:07:41 PM	14.66	41351
1:07:51 PM	14.81	40642
1:08:01 PM	14.97	35642
1:08:11 PM	15.13	35392
1:08:21 PM	15.28	34892
1:08:31 PM	15.44	31809
1:08:41 PM	15.60	31767
1:08:51 PM	15.78	28226
1:09:01 PM	15.96	26517
1:09:11 PM	16.12	25434
1:09:21 PM	16.28	23017
1:09:31 PM	16.44	20017
1:09:41 PM	16.59	19934
1:09:51 PM	16.74	17184
1:10:01 PM	16.91	12934
1:10:11 PM	17.07	9601
1:10:21 PM	17.24	7434
1:10:31 PM	17.40	5851
1:10:41 PM	17.56	6101
1:10:51 PM	17.72	6142
1:11:01 PM	17.86	5309
1:11:11 PM	17.99	5892

Sample Time:	Distance from Pipe Datum (ft.)	Measured Co-60 Activity (dpm/100 cm^2)
1:11:21 PM	18.14	5142
1:11:31 PM	18.27	4726
1:11:41 PM	18.37	5642
1:11:51 PM	18.47	4976
1:12:01 PM	18.55	8101
1:12:11 PM	18.63	5976
1:12:21 PM	18.69	4392
1:12:31 PM	18.74	5309
1:12:41 PM	18.79	6267
1:12:51 PM	18.84	5642
1:13:01 PM	18.92	6934
1:13:11 PM	19.02	6142
1:13:21 PM	19.10	7476
1:13:31 PM	19.19	8059
1:13:41 PM	19.26	10267
1:13:51 PM	19.33	11726
1:14:01 PM	19.40	13809
1:14:11 PM	19.47	18184
1:14:21 PM	19.56	21017
1:14:31 PM	19.65	23392
1:14:41 PM	19.73	24017
1:14:51 PM	19.83	17226
1:15:01 PM	19.93	13101
1:15:11 PM	20.03	10809
1:15:21 PM	20.13	9934
1:15:31 PM	20.23	7309
1:15:41 PM	20.33	6726
1:15:51 PM	20.42	7184
1:16:01 PM	20.52	6601
1:16:11 PM	20.61	7101
1:16:21 PM	20.71	7267
1:16:31 PM	20.82	5476
1:16:41 PM	20.92	6017
1:16:51 PM	21.02	5309
1:17:01 PM	21.12	6601
1:17:11 PM	21.21	5976
1:17:21 PM	21.30	4601
1:17:31 PM	21.40	5767
1:17:41 PM	21.49	5017
1:17:51 PM	21.58	5392
1:18:01 PM	21.67	4976
1:18:11 PM	21.77	5976
1:18:21 PM	21.88	4892
1:18:31 PM	21.95	4017
1:18:41 PM	22.05	4142
1:18:51 PM	22.14	6059
1:19:01 PM	22.23	8517
1:19:11 PM	22.33	8601
1:19:21 PM	22.42	12642
1:19:31 PM	22.53	18392
1:19:41 PM	22.63	20934
1:19:51 PM	22.73	15434
1:20:01 PM	22.83	13726
1:20:11 PM	22.93	9101
1:20:21 PM	23.04	4809
1:20:31 PM	23.14	3601
1:20:41 PM	23.24	2976
1:20:51 PM	23.35	2059
1:21:01 PM	23.44	1976
1:21:11 PM	23.54	2351
1:21:21 PM	23.84	2059
1:21:31 PM	23.73	2017
1:21:41 PM	23.83	1476
1:21:51 PM	23.94	1892
1:22:01 PM	24.04	2559
1:22:11 PM	24.14	2517
1:22:21 PM	24.24	1809
1:22:31 PM	24.34	2934
1:22:41 PM	24.42	2976
1:22:51 PM	24.49	3851
1:23:01 PM	24.57	2809
1:23:11 PM	24.65	4226
1:23:21 PM	24.74	5101
1:23:31 PM	24.82	6392
1:23:41 PM	24.89	8476
1:23:51 PM	24.96	10478
1:24:01 PM	25.03	12892
1:24:11 PM	25.11	17309
1:24:21 PM	25.18	22684
1:24:31 PM	25.28	26934
1:24:41 PM	25.35	30851
1:24:51 PM	25.44	40892
1:25:01 PM	25.53	41559
1:25:11 PM	25.84	36267
1:25:21 PM	25.74	25684
1:25:31 PM	25.84	19142
1:25:41 PM	25.94	14309
1:25:51 PM	26.02	11351
1:26:01 PM	26.12	10017
1:26:11 PM	26.22	9059

Sample Time:	Distance from Pipe Datum (ft.)	Measured Co-60 Activity (dpm/100 cm^2)
1:26:21 PM	26.31	9809
1:26:31 PM	26.41	7892
1:26:41 PM	26.50	9267
1:26:51 PM	26.58	8017
1:27:01 PM	26.65	8601
1:27:11 PM	26.73	7726
1:27:21 PM	26.82	7101
1:27:31 PM	26.90	7434
1:27:41 PM	26.99	6851
1:27:51 PM	27.08	7142
1:28:01 PM	27.16	7684
1:28:11 PM	27.24	7642
1:28:21 PM	27.33	8642
1:28:31 PM	27.41	8309
1:28:41 PM	27.49	7642
1:28:51 PM	27.57	8017
1:29:01 PM	27.66	9309
1:29:11 PM	27.74	8517
1:29:21 PM	27.82	8892
1:29:31 PM	27.90	10309
1:29:41 PM	27.99	12017
1:29:51 PM	28.07	13726
1:30:01 PM	28.14	17559
1:30:11 PM	28.20	21851
1:30:21 PM	28.26	26726
1:30:31 PM	28.33	34726
1:30:41 PM	28.41	43059
1:30:51 PM	28.48	45059
1:31:01 PM	28.56	37059
1:31:11 PM	28.64	28892
1:31:21 PM	28.81	21017
1:31:31 PM	28.98	15059
1:31:41 PM	29.20	14267
1:31:51 PM	29.37	12726
1:32:01 PM	29.54	12184
1:32:11 PM	29.72	13267
1:32:21 PM	29.90	12351
1:32:31 PM	30.02	13892
1:32:41 PM	30.09	12476
1:32:51 PM	30.15	13934
1:33:01 PM	30.20	12809
1:33:11 PM	30.26	14184
1:33:21 PM	30.31	12184
1:33:31 PM	30.39	13142
1:33:41 PM	30.45	12726
1:33:51 PM	30.53	12851
1:34:01 PM	30.62	12559
1:34:11 PM	30.70	15351
1:34:21 PM	30.78	16392
1:34:31 PM	30.86	16726
1:34:41 PM	30.94	18184
1:34:51 PM	31.02	20226
1:35:01 PM	31.09	25142
1:35:11 PM	31.17	28059
1:35:21 PM	31.24	34559
1:35:31 PM	31.31	44392
1:35:41 PM	31.39	56767
1:35:51 PM	31.48	59226
1:36:01 PM	31.61	46684
1:36:11 PM	31.75	31267
1:36:21 PM	31.91	19601
1:36:31 PM	32.07	19059
1:36:41 PM	32.24	19309
1:36:51 PM	32.40	20976
1:37:01 PM	32.59	24517
1:37:11 PM	32.76	31809
1:37:21 PM	32.93	42684
1:37:31 PM	33.11	34851
1:37:41 PM	33.28	27184
1:37:51 PM	33.45	24517
1:38:01 PM	33.63	23684
1:38:11 PM	33.82	20851
1:38:21 PM	33.99	24892
1:38:31 PM	34.17	22351
1:38:41 PM	34.34	22226
1:38:51 PM	34.49	24392
1:39:01 PM	34.65	26017
1:39:11 PM	34.80	28351
1:39:21 PM	34.96	29851
1:39:31 PM	35.13	33101
1:39:41 PM	35.29	30142
1:39:51 PM	35.48	32892
1:40:01 PM	35.66	35767
1:40:11 PM	35.82	39392
1:40:21 PM	36.00	32726
1:40:31 PM	36.18	25392
1:40:41 PM	36.36	21767
1:40:51 PM	36.53	21517
1:41:01 PM	36.72	21351
1:41:11 PM	36.90	20934

Sample Time:	Distance from Pipe Datum (ft.)	Measured Co-60 Activity (dpm/100 cm^2)
1:41:21 PM	37.11	21684
1:41:31 PM	37.29	20642
1:41:41 PM	37.46	21184
1:41:51 PM	37.62	21851
1:42:01 PM	37.78	19726
1:42:11 PM	37.96	21184
1:42:21 PM	38.13	22184
1:42:31 PM	38.30	22226
1:42:41 PM	38.46	25934
1:42:51 PM	38.65	34351
1:43:01 PM	38.82	45809
1:43:11 PM	38.99	35726
1:43:21 PM	39.18	26476
1:43:31 PM	39.38	24142
1:43:41 PM	39.57	23184
1:43:51 PM	39.79	24601
1:44:01 PM	39.98	22309
1:44:11 PM	40.17	21892
1:44:21 PM	40.38	22809
1:44:31 PM	40.59	21976
1:44:41 PM	40.78	20851
1:44:51 PM	40.97	19726
1:45:01 PM	41.15	21184
1:45:11 PM	41.38	25892
1:45:21 PM	41.56	39101
1:45:31 PM	41.75	73517
1:45:41 PM	41.93	87142
1:45:51 PM	42.13	44726
1:46:01 PM	42.32	26559
1:46:11 PM	42.50	25726
1:46:21 PM	42.69	23226
1:46:31 PM	42.91	23392
1:46:41 PM	43.10	21476
1:46:51 PM	43.31	20767
1:47:01 PM	43.52	22017
1:47:11 PM	43.69	23142
1:47:21 PM	43.84	21684
1:47:31 PM	43.98	22434
1:47:41 PM	44.13	23934
1:47:51 PM	44.27	22101
1:48:01 PM	44.41	24184
1:48:11 PM	44.54	29726
1:48:21 PM	44.68	40601
1:48:31 PM	44.83	51059
1:48:41 PM	44.98	37434
1:48:51 PM	45.11	25934
1:49:01 PM	45.23	19726
1:49:11 PM	45.37	18934
1:49:21 PM	45.51	18767
1:49:31 PM	45.64	18226
1:49:41 PM	45.77	15559
1:49:51 PM	45.91	16851
1:50:01 PM	46.05	16976
1:50:11 PM	46.21	18101
1:50:21 PM	46.36	16934
1:50:31 PM	46.52	17101
1:50:41 PM	46.67	15809
1:50:51 PM	46.82	17809
1:51:01 PM	46.96	19392
1:51:11 PM	47.10	19767
1:51:21 PM	47.25	22309
1:51:31 PM	47.41	27642
1:51:41 PM	47.56	36184
1:51:51 PM	47.74	67934
1:52:01 PM	47.90	67642
1:52:11 PM	48.05	37101
1:52:21 PM	48.20	25934
1:52:31 PM	48.35	24142
1:52:41 PM	48.49	22226
1:52:51 PM	48.64	25059
1:53:01 PM	48.80	23934
1:53:11 PM	48.95	24392
1:53:21 PM	49.10	26101
1:53:31 PM	49.28	23559
1:53:41 PM	49.46	23642
1:53:51 PM	49.64	21184
1:54:01 PM	49.81	22684
1:54:11 PM	49.96	22017
1:54:21 PM	50.11	25101
1:54:31 PM	50.25	25767
1:54:41 PM	50.40	32226
1:54:51 PM	50.64	40601
1:55:01 PM	50.87	41559
1:55:11 PM	51.06	36476
1:55:21 PM	51.24	38559
1:55:31 PM	51.39	55101
1:55:41 PM	51.54	86934
1:55:51 PM	51.87	112517
1:56:01 PM	51.80	90101
1:56:11 PM	51.95	83476

Sample Time:	Distance from Pipe Datum (ft.)	Measured Co-60 Activity (dpm/100 cm^2)
1:58:21 PM	52.10	108392
1:58:31 PM	52.27	167642
1:58:41 PM	52.44	234851
1:58:51 PM	52.60	230809
1:57:01 PM	52.82	235309
1:57:11 PM	53.01	238184
1:57:21 PM	53.18	319809
1:57:31 PM	53.37	354267
1:57:41 PM	53.54	275934
1:57:51 PM	53.73	253184
1:58:01 PM	53.94	258851
1:58:11 PM	54.12	261934
1:58:21 PM	54.28	232267
1:58:31 PM	54.45	195809
1:58:41 PM	54.64	178017
1:58:51 PM	54.81	158392
1:59:01 PM	54.98	159017
1:59:11 PM	55.14	137767
1:59:21 PM	55.30	113809
1:59:31 PM	55.48	70517
1:59:41 PM	55.64	48184
1:59:51 PM	55.80	38517
2:00:01 PM	55.96	35434
2:00:11 PM	56.12	37101
2:00:21 PM	56.29	47601
2:00:31 PM	56.47	68976
2:00:41 PM	56.64	97892
2:00:51 PM	56.81	70142
2:01:01 PM	56.99	43267
2:01:11 PM	57.18	32726
2:01:21 PM	57.35	30184
2:01:31 PM	57.57	23892
2:01:41 PM	57.77	21478
2:01:51 PM	57.94	22267
2:02:01 PM	58.11	23726
2:02:11 PM	58.29	21434
2:02:21 PM	58.47	20976
2:02:31 PM	58.63	21767
2:02:41 PM	58.78	21842
2:02:51 PM	58.93	22851
2:03:01 PM	59.08	25267
2:03:11 PM	59.25	30017
2:03:21 PM	59.42	42767
2:03:31 PM	59.59	57642
2:03:41 PM	59.77	43559
2:03:51 PM	59.96	28642
2:04:01 PM	60.15	28726
2:04:11 PM	60.35	22559
2:04:21 PM	60.53	22476
2:04:31 PM	60.72	25892
2:04:41 PM	60.90	24267
2:04:51 PM	61.08	24142
2:05:01 PM	61.26	23601
2:05:11 PM	61.43	25309
2:05:21 PM	61.59	25059
2:05:31 PM	61.74	24517
2:05:41 PM	61.88	26517
2:05:51 PM	62.04	31351
2:06:01 PM	62.19	36267
2:06:11 PM	62.34	49976
2:06:21 PM	62.50	61309
2:06:31 PM	62.67	54309
2:06:41 PM	62.83	44559
2:06:51 PM	63.05	41642
2:07:01 PM	63.24	35976
2:07:11 PM	63.47	31934
2:07:21 PM	63.64	32267
2:07:31 PM	63.82	29476
2:07:41 PM	63.97	24351
2:07:51 PM	64.15	22976
2:08:01 PM	64.32	29101
2:08:11 PM	64.53	24392
2:08:21 PM	64.74	24809
2:08:31 PM	64.92	28226
2:08:41 PM	65.09	30684
2:08:51 PM	65.26	32517
2:09:01 PM	65.41	41976
2:09:11 PM	65.57	43934
2:09:21 PM	65.74	58017
2:09:31 PM	65.91	53226
2:09:41 PM	66.08	55809
2:09:51 PM	66.25	52184
2:10:01 PM	66.42	53226
2:10:11 PM	66.60	55934
2:10:21 PM	66.77	59642
2:10:31 PM	66.94	71101
2:10:41 PM	67.10	83476
2:10:51 PM	67.26	67601
2:11:01 PM	67.43	63726
2:11:11 PM	67.60	69434

Sample Time:	Distance from Pipe Datum (ft.)	Measured Co-60 Activity (dpm/100 cm^2)
2:11:21 PM	67.77	63392
2:11:31 PM	67.94	53892
2:11:41 PM	68.10	50184
2:11:51 PM	68.27	55642
2:12:01 PM	68.43	70642
2:12:11 PM	68.59	77851
2:12:21 PM	68.76	69726
2:12:31 PM	68.92	54726
2:12:41 PM	69.09	38142
2:12:51 PM	69.28	30267
2:13:01 PM	69.48	26517
2:13:11 PM	69.65	27351
2:13:21 PM	69.84	26226
2:13:31 PM	70.02	25142
2:13:41 PM	70.19	24142
2:13:51 PM	70.36	24351
2:14:01 PM	70.53	22517
2:14:11 PM	70.69	25642
2:14:21 PM	70.86	25476
2:14:31 PM	71.01	31309
2:14:41 PM	71.17	41517
2:14:51 PM	71.34	68267
2:15:01 PM	71.50	70101
2:15:11 PM	71.68	48309
2:15:21 PM	71.86	41809
2:15:31 PM	72.04	37434
2:15:41 PM	72.25	35767
2:15:51 PM	72.41	32892
2:16:01 PM	72.58	32351
2:16:11 PM	72.74	31851
2:16:21 PM	72.91	26226
2:16:31 PM	73.08	26601
2:16:41 PM	73.24	26226
2:16:51 PM	73.42	31226
2:17:01 PM	73.59	33267
2:17:11 PM	73.76	29059
2:17:21 PM	73.94	31809
2:17:31 PM	74.15	39892
2:17:41 PM	74.33	55767
2:17:51 PM	74.50	47184
2:18:01 PM	74.67	31142
2:18:11 PM	74.84	21351
2:18:21 PM	75.01	16851
2:18:31 PM	75.20	15101
2:18:41 PM	75.39	15184
2:18:51 PM	75.57	14809
2:19:01 PM	75.74	16434
2:19:11 PM	75.92	18309
2:19:21 PM	76.09	18726
2:19:31 PM	76.26	19351
2:19:41 PM	76.45	22601
2:19:51 PM	76.63	24726
2:20:01 PM	76.80	29309
2:20:11 PM	76.97	37851
2:20:21 PM	77.13	46351
2:20:31 PM	77.29	84101
2:20:41 PM	77.45	58767
2:20:51 PM	77.62	43559
2:21:01 PM	77.79	37351
2:21:11 PM	77.95	32851
2:21:21 PM	78.13	28309
2:21:31 PM	78.28	26601
2:21:41 PM	78.47	23892
2:21:51 PM	78.65	21434
2:22:01 PM	78.84	20851
2:22:11 PM	79.02	21978
2:22:21 PM	79.19	20434
2:22:31 PM	79.37	19892
2:22:41 PM	79.54	22892
2:22:51 PM	79.71	24351
2:23:01 PM	79.88	25851
2:23:11 PM	80.06	32309
2:23:21 PM	80.24	44434
2:23:31 PM	80.43	47476
2:23:41 PM	80.61	36726
2:23:51 PM	80.78	33809
2:24:01 PM	80.91	29434
2:24:11 PM	81.08	27476
2:24:21 PM	81.25	23934
2:24:31 PM	81.42	21517
2:24:41 PM	81.58	22851
2:24:51 PM	81.76	21601
2:25:01 PM	81.92	21476
2:25:11 PM	82.09	20351
2:25:21 PM	82.26	20978
2:25:31 PM	82.44	21142
2:25:41 PM	82.60	20392
2:25:51 PM	82.77	20101
2:26:01 PM	82.93	25392
2:26:11 PM	83.08	29309

Sample Time:	Distance from Pipe Datum (ft.)	Measured Co-60 Activity (dpm/100 cm^2)
2:26:21 PM	83.23	39434
2:26:31 PM	83.38	35809
2:26:41 PM	83.54	26017
2:26:51 PM	83.69	22809
2:27:01 PM	83.83	21142
2:27:11 PM	84.01	20976
2:27:21 PM	84.17	19559
2:27:31 PM	84.34	20767
2:27:41 PM	84.51	22726
2:27:51 PM	84.69	21309
2:28:01 PM	84.87	19517
2:28:11 PM	85.05	22726
2:28:21 PM	85.23	22351
2:28:31 PM	85.40	25351
2:28:41 PM	85.58	25851
2:28:51 PM	85.75	28101
2:29:01 PM	85.93	39601
2:29:11 PM	86.11	60142
2:29:21 PM	86.28	87601
2:29:31 PM	86.45	66184
2:29:41 PM	86.64	49809
2:29:51 PM	86.81	58309
2:30:01 PM	86.98	78767
2:30:11 PM	87.13	107517
2:30:21 PM	87.29	87434
2:30:31 PM	87.45	65351
2:30:41 PM	87.61	44892
2:30:51 PM	87.76	32476
2:31:01 PM	87.92	24601
2:31:11 PM	88.09	22601
2:31:21 PM	88.27	22559
2:31:31 PM	88.44	20017
2:31:41 PM	88.61	23351
2:31:51 PM	88.78	25101
2:32:01 PM	88.96	29726
2:32:11 PM	89.13	33059
2:32:21 PM	89.30	36767
2:32:31 PM	89.47	24642
2:32:41 PM	89.66	18787
2:32:51 PM	89.83	18517
2:33:01 PM	90.00	17476
2:33:11 PM	90.16	15726
2:33:21 PM	90.33	16601
2:33:31 PM	90.52	16434
2:33:41 PM	90.69	18476
2:33:51 PM	90.85	20684
2:34:01 PM	91.02	19059
2:34:11 PM	91.20	18059
2:34:21 PM	91.37	18101
2:34:31 PM	91.54	20684
2:34:41 PM	91.71	20517
2:34:51 PM	91.88	25684
2:35:01 PM	92.04	34767
2:35:11 PM	92.22	48476
2:35:21 PM	92.38	45476
2:35:31 PM	92.54	50309
2:35:41 PM	92.69	66184
2:35:51 PM	92.85	74476
2:36:01 PM	93.01	77476
2:36:11 PM	93.19	63517
2:36:21 PM	93.35	100851
2:36:31 PM	93.50	93517
2:36:41 PM	93.67	68684
2:36:51 PM	93.83	53976
2:37:01 PM	94.00	46392
2:37:11 PM	94.16	42767
2:37:21 PM	94.31	43851
2:37:31 PM	94.48	49976
2:37:41 PM	94.63	56226
2:37:51 PM	94.81	69517
2:38:01 PM	94.97	69309
2:38:11 PM	95.13	76392
2:38:21 PM	95.30	67392
2:38:31 PM	95.46	60934
2:38:41 PM	95.63	53892
2:38:51 PM	95.79	43351
2:39:01 PM	95.95	31101
2:39:11 PM	96.10	27184
2:39:21 PM	96.27	23976
2:39:31 PM	96.43	20559
2:39:41 PM	96.59	20934
2:39:51 PM	96.74	20559
2:40:01 PM	96.90	22059
2:40:11 PM	97.06	21726
2:40:21 PM	97.22	23184
2:40:31 PM	97.40	24267
2:40:41 PM	97.55	24351
2:40:51 PM	97.71	27059
2:41:01 PM	97.87	32642
2:41:11 PM	98.04	44476

Sample Time:	Distance from Pipe Datum (ft.)	Measured Co-60 Activity (dpm/100 cm^2)
2:41:21 PM	98.20	47351
2:41:31 PM	98.36	34726
2:41:41 PM	98.53	29892
2:41:51 PM	98.70	25017
2:42:01 PM	98.86	24351
2:42:11 PM	99.01	24601
2:42:21 PM	99.18	21976
2:42:31 PM	99.35	22517
2:42:41 PM	99.52	22351
2:42:51 PM	99.69	23434
2:43:01 PM	99.85	24517
2:43:11 PM	100.01	24184
2:43:21 PM	100.18	27226
2:43:31 PM	100.32	24809
2:43:41 PM	100.47	23559
2:43:51 PM	100.63	26809
2:44:01 PM	100.78	28809
2:44:11 PM	100.94	31642
2:44:21 PM	101.10	38809
2:44:31 PM	101.26	35309
2:44:41 PM	101.41	28267
2:44:51 PM	101.57	27142
2:45:01 PM	101.73	26642
2:45:11 PM	101.89	25142
2:45:21 PM	102.04	21934
2:45:31 PM	102.20	24184
2:45:41 PM	102.35	23059
2:45:51 PM	102.51	24267
2:46:01 PM	102.66	21642
2:46:11 PM	102.81	20476
2:46:21 PM	102.96	23684
2:46:31 PM	103.12	22976
2:46:41 PM	103.27	24017
2:46:51 PM	103.43	26184
2:47:01 PM	103.59	34226
2:47:11 PM	103.74	47392
2:47:21 PM	103.90	74142
2:47:31 PM	104.06	115684
2:47:41 PM	104.21	95601
2:47:51 PM	104.38	70559
2:48:01 PM	104.54	54851
2:48:11 PM	104.71	48476
2:48:21 PM	104.86	45642
2:48:31 PM	105.00	42601
2:48:41 PM	105.15	38392
2:48:51 PM	105.29	38976
2:49:01 PM	105.45	36476
2:49:11 PM	105.61	37559
2:49:21 PM	105.77	34684
2:49:31 PM	105.93	34851
2:49:41 PM	106.09	35601
2:49:51 PM	106.25	38101
2:50:01 PM	106.41	35851
2:50:11 PM	106.57	39226
2:50:21 PM	106.73	47684
2:50:31 PM	106.89	68476
2:50:41 PM	107.05	91892
2:50:51 PM	107.21	70184
2:51:01 PM	107.37	46559
2:51:11 PM	107.53	41976
2:51:21 PM	107.70	41226
2:51:31 PM	107.85	49184
2:51:41 PM	108.00	61892
2:51:51 PM	108.16	94226
2:52:01 PM	108.32	123017
2:52:11 PM	108.48	135101
2:52:21 PM	108.64	124101
2:52:31 PM	108.80	121434
2:52:41 PM	108.97	114101
2:52:51 PM	109.14	112642
2:53:01 PM	109.31	113184
2:53:11 PM	109.47	103684
2:53:21 PM	109.64	112767
2:53:31 PM	109.80	141809
2:53:41 PM	109.97	177934
2:53:51 PM	110.14	139809
2:54:01 PM	110.31	99892
2:54:11 PM	110.47	83642
2:54:21 PM	110.64	88226
2:54:31 PM	110.81	93892
2:54:41 PM	110.98	86934
2:54:51 PM	111.14	79476
2:55:01 PM	111.30	72642
2:55:11 PM	111.48	79101
2:55:21 PM	111.62	81934
2:55:31 PM	111.79	74226
2:55:41 PM	111.95	70517
2:55:51 PM	112.13	53642
2:56:01 PM	112.29	38684
2:56:11 PM	112.46	38309

Sample Time:	Distance from Pipe Datum (ft.)	Measured Co-60 Activity (dpm/100 cm^2)
2:56:21 PM	112.62	46934
2:56:31 PM	112.79	72351
2:56:41 PM	112.96	122392
2:56:51 PM	113.13	116976
2:57:01 PM	113.30	130642
2:57:11 PM	113.46	139767
2:57:21 PM	113.62	146309
2:57:31 PM	113.78	151726
2:57:41 PM	113.94	147934
2:57:51 PM	114.10	132059
2:58:01 PM	114.24	123017
2:58:11 PM	114.39	116101
2:58:21 PM	114.53	96787
2:58:31 PM	114.72	91267
2:58:41 PM	114.89	100684
2:58:51 PM	115.06	97392
2:59:01 PM	115.23	88309
2:59:11 PM	115.42	123309
2:59:21 PM	115.60	231267
2:59:31 PM	115.79	276351
2:59:41 PM	115.99	144559
2:59:51 PM	116.17	64434
3:00:01 PM	116.35	40017
3:00:11 PM	116.54	32267
3:00:21 PM	116.72	30976
3:00:31 PM	116.89	26142
3:00:41 PM	117.07	28059
3:00:51 PM	117.25	26142
3:01:01 PM	117.43	27851
3:01:11 PM	117.61	30059
3:01:21 PM	117.78	28976
3:01:31 PM	117.96	31101
3:01:41 PM	118.14	33184
3:01:51 PM	118.32	40601
3:02:01 PM	118.50	45184
3:02:11 PM	118.69	54684
3:02:21 PM	118.88	60309
3:02:31 PM	119.06	89392
3:02:41 PM	119.24	171142
3:02:51 PM	119.43	298017
3:03:01 PM	119.62	327642
3:03:11 PM	119.80	325226
3:03:21 PM	119.97	307684
3:03:31 PM	120.15	262684
3:03:41 PM	120.33	263934
3:03:51 PM	120.51	317226
3:04:01 PM	120.70	357559
3:04:11 PM	120.90	323184
3:04:21 PM	121.12	298934
3:04:31 PM	121.31	307976
3:04:41 PM	121.49	323017
3:04:51 PM	121.69	308476
3:05:01 PM	121.88	289892
3:05:11 PM	122.07	258267
3:05:21 PM	122.26	201517
3:05:31 PM	122.46	97601
3:05:41 PM	122.64	52434
3:05:51 PM	122.82	41601
3:06:01 PM	123.00	42601
3:06:11 PM	123.19	56434
3:06:21 PM	123.38	97601
3:06:31 PM	123.58	149184
3:06:41 PM	123.76	153059
3:06:51 PM	123.97	151184
3:07:01 PM	124.17	139142
3:07:11 PM	124.38	128934
3:07:21 PM	124.58	111392
3:07:31 PM	124.79	88226
3:07:41 PM	124.99	50392
3:07:51 PM	125.19	32684
3:08:01 PM	125.38	21684
3:08:11 PM	125.58	22976
3:08:21 PM	125.77	22934
3:08:31 PM	125.96	20976
3:08:41 PM	126.15	26392
3:08:51 PM	126.32	29017
3:09:01 PM	126.50	41809
3:09:11 PM	126.69	31934
3:09:21 PM	126.87	22101
3:09:31 PM	127.06	19976
3:09:41 PM	127.24	18976
3:09:51 PM	127.43	19642
3:10:01 PM	127.62	19934
3:10:11 PM	127.80	20184
3:10:21 PM	128.00	22559
3:10:31 PM	128.20	22934
3:10:41 PM	128.39	22017
3:10:51 PM	128.57	20601
3:11:01 PM	128.76	23976
3:11:11 PM	128.95	26392

Sample Time:	Distance from Pipe Datum (ft.)	Measured Co-60 Activity (dpm/100 cm^2)
3:11:21 PM	129.13	29309
3:11:31 PM	129.32	41809
3:11:41 PM	129.50	49184
3:11:51 PM	129.68	44309
3:12:01 PM	129.85	35767
3:12:11 PM	130.03	38476
3:12:21 PM	130.22	34934
3:12:31 PM	130.41	33392
3:12:41 PM	130.59	31976
3:12:51 PM	130.78	31559
3:13:01 PM	130.94	31184
3:13:11 PM	131.11	32726
3:13:21 PM	131.27	34892
3:13:31 PM	131.42	30976
3:13:41 PM	131.58	29434
3:13:51 PM	131.74	30559
3:14:01 PM	131.88	31517
3:14:11 PM	132.02	35142
3:14:21 PM	132.16	39142
3:14:31 PM	132.32	47601
3:14:41 PM	132.48	53351
3:14:51 PM	132.65	39351
3:15:01 PM	132.81	30059
3:15:11 PM	132.99	25392
3:15:21 PM	133.15	24559
3:15:31 PM	133.32	22101
3:15:41 PM	133.49	21684
3:15:51 PM	133.67	20226
3:16:01 PM	133.85	21434
3:16:11 PM	134.02	21892
3:16:21 PM	134.19	22059
3:16:31 PM	134.37	20851
3:16:41 PM	134.54	23017
3:16:51 PM	134.71	25767
3:17:01 PM	134.87	30226
3:17:11 PM	135.03	37892
3:17:21 PM	135.16	53642
3:17:31 PM	135.34	76517
3:17:41 PM	135.51	76059
3:17:51 PM	135.68	65726
3:16:01 PM	135.85	66726
3:18:11 PM	136.02	64434
3:18:21 PM	136.20	54392
3:18:31 PM	136.39	51976
3:18:41 PM	136.57	61517
3:18:51 PM	136.74	86309
3:19:01 PM	136.91	150934
3:19:11 PM	137.08	270684
3:19:21 PM	137.25	324684
3:19:31 PM	137.43	283226
3:19:41 PM	137.60	255934
3:19:51 PM	137.78	243934
3:20:01 PM	137.95	230892
3:20:11 PM	138.12	243017
3:20:21 PM	138.29	331809
3:20:31 PM	138.47	382851
3:20:41 PM	138.64	428434
3:20:51 PM	138.81	384059
3:21:01 PM	138.99	270726
3:21:11 PM	139.16	240809
3:21:21 PM	139.33	226517
3:21:31 PM	139.50	211684
3:21:41 PM	139.66	238184
3:21:51 PM	139.83	272809
3:22:01 PM	140.00	416642
3:22:11 PM	140.16	612809
3:22:21 PM	140.31	923809
3:22:31 PM	140.48	1065767
3:22:41 PM	140.64	611101
3:22:51 PM	140.78	572809
3:23:01 PM	140.95	400767
3:23:11 PM	141.11	283767
3:23:21 PM	141.29	230517
3:23:31 PM	141.47	157559
3:23:41 PM	141.84	108934
3:23:51 PM	141.80	112842
3:24:01 PM	141.97	160767
3:24:11 PM	142.14	155017
3:24:21 PM	142.33	91017
3:24:31 PM	142.50	55517
3:24:41 PM	142.69	43767
3:24:51 PM	142.87	38267
3:25:01 PM	143.05	30767
3:25:11 PM	143.21	28934
3:25:21 PM	143.40	31392
3:25:31 PM	143.58	34601
3:25:41 PM	143.76	34767
3:25:51 PM	143.94	44309
3:26:01 PM	144.11	67267
3:26:11 PM	144.27	102476

Sample Time:	Distance from Pipe Datum (ft.)	Measured Co-60 Activity (dpm/100 cm^2)
3:26:21 PM	144.42	90309
3:26:31 PM	144.58	63726
3:26:41 PM	144.74	48559
3:26:51 PM	144.91	45351
3:27:01 PM	145.09	36559
3:27:11 PM	145.27	37184
3:27:21 PM	145.44	33851
3:27:31 PM	145.60	32767
3:27:41 PM	145.77	34601
3:27:51 PM	145.92	36851
3:28:01 PM	146.07	35184
3:28:11 PM	146.23	35142
3:28:21 PM	146.39	34934
3:28:31 PM	146.57	34934
3:28:41 PM	146.73	34351
3:28:51 PM	146.89	34601
3:29:01 PM	147.06	40517
3:29:11 PM	147.24	49767
3:29:21 PM	147.42	35726
3:29:31 PM	147.59	26351
3:29:41 PM	147.76	26392
3:29:51 PM	147.95	23517
3:30:01 PM	148.13	23976
3:30:11 PM	148.38	24351
3:30:21 PM	148.53	27059
3:30:31 PM	148.69	28226
3:30:41 PM	148.89	32434
3:30:51 PM	149.12	39517
3:31:01 PM	149.34	50809
3:31:11 PM	149.55	68184
3:31:21 PM	149.76	87476
3:31:31 PM	149.93	133892
3:31:41 PM	150.11	228267
3:31:51 PM	150.30	449809
3:32:01 PM	150.48	479392
3:32:11 PM	150.67	449392
3:32:21 PM	150.85	493059
3:32:31 PM	151.03	442517
3:32:41 PM	151.20	311351
3:32:51 PM	151.38	216059
3:33:01 PM	151.56	179101
3:33:11 PM	151.74	148892
3:33:21 PM	151.92	92476
3:33:31 PM	152.10	60476
3:33:41 PM	152.29	53351
3:33:51 PM	152.47	54767
3:34:01 PM	152.64	54934
3:34:11 PM	152.80	67309
3:34:21 PM	152.97	98017
3:34:31 PM	153.15	159267
3:34:41 PM	153.40	233142
3:34:51 PM	153.59	355392
3:35:01 PM	153.78	264801
3:35:11 PM	153.98	140851
3:35:21 PM	154.18	95801
3:35:31 PM	154.35	74976
3:35:41 PM	154.51	72601
3:35:51 PM	154.68	80392
3:36:01 PM	154.86	111309
3:36:11 PM	155.05	144851
3:36:21 PM	155.23	172684
3:36:31 PM	155.41	188267
3:36:41 PM	155.58	228017
3:36:51 PM	155.74	251434
3:37:01 PM	155.91	294392
3:37:11 PM	156.09	357726
3:37:21 PM	156.29	404767
3:37:31 PM	156.51	402934
3:37:41 PM	156.69	352101
3:37:51 PM	156.89	342059
3:38:01 PM	157.07	338184
3:38:11 PM	157.23	373059
3:38:21 PM	157.38	443184
3:38:31 PM	157.52	453351
3:38:41 PM	157.68	423809
3:38:51 PM	157.83	385351
3:39:01 PM	157.97	421392
3:39:11 PM	158.11	378684
3:39:21 PM	158.24	337517
3:39:31 PM	158.38	364809
3:39:41 PM	158.53	380726
3:39:51 PM	158.67	370101
3:40:01 PM	158.83	351934
3:40:11 PM	159.00	296726
3:40:21 PM	159.14	266142
3:40:31 PM	159.30	252351
3:40:41 PM	159.47	263392
3:40:51 PM	159.66	257059
3:41:01 PM	159.83	222726
3:41:11 PM	159.99	169809

Sample Time:	Distance from Pipe Datum (ft.)	Measured Co-60 Activity (dpm/100 cm^3)
3:41:21 PM	160.17	167684
3:41:31 PM	160.34	194267
3:41:41 PM	160.51	186351
3:41:51 PM	160.69	146559
3:42:01 PM	160.89	160517
3:42:11 PM	161.06	230434
3:42:21 PM	161.24	293851
3:42:31 PM	161.42	324351
3:42:41 PM	161.61	338642
3:42:51 PM	161.80	299226
3:43:01 PM	162.00	300142
3:43:11 PM	162.18	331642
3:43:21 PM	162.37	340309
3:43:31 PM	162.55	335851
3:43:41 PM	162.74	323892
3:43:51 PM	162.94	324809
3:44:01 PM	163.13	377142
3:44:11 PM	163.32	535142
3:44:21 PM	163.49	625892
3:44:31 PM	163.65	645476
3:44:41 PM	163.82	777392
3:44:51 PM	163.98	952351
3:45:01 PM	164.19	969976
3:45:11 PM	164.40	930309
3:45:21 PM	164.56	591184
3:45:31 PM	164.73	353142
3:45:41 PM	164.91	283767
3:45:51 PM	165.08	248309
3:46:01 PM	165.25	267142
3:46:11 PM	165.43	290934
3:46:21 PM	165.61	259601
3:46:31 PM	165.78	231392
3:46:41 PM	165.94	214559
3:46:51 PM	166.11	213226
3:47:01 PM	166.29	192601
3:47:11 PM	166.48	194726
3:47:21 PM	166.67	226559
3:47:31 PM	166.64	265601
3:47:41 PM	167.02	282476
3:47:51 PM	167.19	306101
3:48:01 PM	167.36	383351
3:48:11 PM	167.52	415059
3:48:21 PM	167.69	404517
3:48:31 PM	167.85	504559
3:48:41 PM	168.02	808392
3:48:51 PM	168.19	928684
3:49:01 PM	168.36	933934
3:49:11 PM	168.53	928309
3:49:21 PM	168.70	856892
3:49:31 PM	168.87	855851
3:49:41 PM	169.04	830184
3:49:51 PM	169.20	706101
3:50:01 PM	169.36	521267
3:50:11 PM	169.52	396434
3:50:21 PM	169.68	395809
3:50:31 PM	169.84	413059
3:50:41 PM	170.00	292517
3:50:51 PM	170.16	203267
3:51:01 PM	170.32	165642
3:51:11 PM	170.48	180934
3:51:21 PM	170.65	242226
3:51:31 PM	170.81	255642
3:51:41 PM	170.97	163809
3:51:51 PM	171.13	93601
3:52:01 PM	171.30	66059
3:52:11 PM	171.47	51892
3:52:21 PM	171.65	44684
3:52:31 PM	171.82	46642
3:52:41 PM	171.98	53842
3:52:51 PM	172.14	91267
3:53:01 PM	172.31	176809
3:53:11 PM	172.47	275184
3:53:21 PM	172.63	355517
3:53:31 PM	172.80	323684
3:53:41 PM	172.98	221851
3:53:51 PM	173.16	158101
3:54:01 PM	173.33	146517
3:54:11 PM	173.51	162226
3:54:21 PM	173.68	127559
3:54:31 PM	173.86	84934
3:54:41 PM	174.03	68476
3:54:51 PM	174.18	65642
3:55:01 PM	174.35	65142
3:55:11 PM	174.52	65934
3:55:21 PM	174.69	57726
3:55:31 PM	174.86	54309
3:55:41 PM	175.02	77767
3:55:51 PM	175.19	97517
3:56:01 PM	175.35	111351
3:56:11 PM	175.51	86434

Sample Time:	Distance from Pipe Datum (ft.)	Measured Co-60 Activity (dpm/100 cm^2)
3:56:21 PM	175.67	52142
3:56:31 PM	175.83	44017
3:56:41 PM	176.09	33892
3:56:51 PM	176.34	33226
3:57:01 PM	176.57	34142
3:57:11 PM	176.77	55434
3:57:21 PM	176.98	80767
3:57:31 PM	177.16	113267
3:57:41 PM	177.34	88517
3:57:51 PM	177.52	70392
3:58:01 PM	177.70	71476
3:58:11 PM	177.88	70851
3:58:21 PM	178.06	75851
3:58:31 PM	178.26	129642
3:58:41 PM	178.46	196267
3:58:51 PM	178.62	160934
3:59:01 PM	178.78	132517
3:59:11 PM	178.93	140642
3:59:21 PM	179.09	154476
3:59:31 PM	179.24	132642
3:59:41 PM	179.38	118017
3:59:51 PM	179.52	125101
4:00:01 PM	179.67	127809
4:00:11 PM	179.82	125392
4:00:21 PM	179.97	123142
4:00:31 PM	180.11	106934
4:00:41 PM	180.25	92392
4:00:51 PM	180.38	95017
4:01:01 PM	180.53	110101
4:01:11 PM	180.69	112267
4:01:21 PM	180.85	90692
4:01:31 PM	180.99	66642
4:01:41 PM	181.13	65351
4:01:51 PM	181.28	90601
4:02:01 PM	181.43	97309
4:02:11 PM	181.58	62976
4:02:21 PM	181.74	50976
4:02:31 PM	181.88	56851
4:02:41 PM	182.02	80059
4:02:51 PM	182.16	99559
4:03:01 PM	182.32	93601
4:03:11 PM	182.48	68642
4:03:21 PM	182.64	47767
4:03:31 PM	182.79	46226
4:03:41 PM	182.94	44017
4:03:51 PM	183.09	36892
4:04:01 PM	183.23	32476
4:04:11 PM	183.37	32934
4:04:21 PM	183.51	30976
4:04:31 PM	183.65	36559
4:04:41 PM	183.79	38017
4:04:51 PM	183.94	47892
4:05:01 PM	184.09	70601
4:05:11 PM	184.26	113851
4:05:21 PM	184.40	86767
4:05:31 PM	184.54	53309
4:05:41 PM	184.68	36601
4:05:51 PM	184.83	31226
4:06:01 PM	185.00	26892
4:06:11 PM	185.18	24184
4:06:21 PM	185.37	23851
4:06:31 PM	185.56	20851
4:06:41 PM	185.74	22226
4:06:51 PM	185.91	22267
4:07:01 PM	186.10	22934
4:07:11 PM	186.27	21476
4:07:21 PM	186.44	21684
4:07:31 PM	186.83	24976
4:07:41 PM	186.83	28767
4:07:51 PM	187.02	35434
4:08:01 PM	187.21	50267
4:08:11 PM	187.41	44726
4:08:21 PM	187.63	35851
4:08:31 PM	187.81	30809
4:08:41 PM	187.99	28142
4:08:51 PM	188.18	27642
4:09:01 PM	188.37	23767
4:09:11 PM	188.56	26892
4:09:21 PM	188.78	25976
4:09:31 PM	188.99	26309
4:09:41 PM	189.18	26684
4:09:51 PM	189.36	30059
4:10:01 PM	189.56	33726
4:10:11 PM	189.75	38767
4:10:21 PM	189.93	51767
4:10:31 PM	190.11	71809
4:10:41 PM	190.31	78017
4:10:51 PM	190.50	57517
4:11:01 PM	190.69	40976
4:11:11 PM	190.88	33434

Sample Time:	Distance from Pipe Datum (ft.)	Measured Co-60 Activity (dpm/100 cm^2)
4:11:21 PM	191.08	30642
4:11:31 PM	191.27	29017
4:11:41 PM	191.47	28892
4:11:51 PM	191.65	27559
4:12:01 PM	191.82	27767
4:12:11 PM	192.01	28809
4:12:21 PM	192.20	31976
4:12:31 PM	192.38	36934
4:12:41 PM	192.58	47267
4:12:51 PM	192.75	75517
4:13:01 PM	192.91	111684
4:13:11 PM	193.07	167517
4:13:21 PM	193.22	184642
4:13:31 PM	193.37	135226
4:13:41 PM	193.52	77101
4:13:51 PM	193.72	53726
4:14:01 PM	193.95	38684
4:14:11 PM	194.15	34601
4:14:21 PM	194.31	29059
4:14:31 PM	194.48	32309
4:14:41 PM	194.65	30684
4:14:51 PM	194.82	32017
4:15:01 PM	194.99	33642
4:15:11 PM	195.15	33059
4:15:21 PM	195.32	34976
4:15:31 PM	195.49	37309
4:15:41 PM	195.66	47642
4:15:51 PM	195.85	60226
4:16:01 PM	196.02	101767
4:16:11 PM	196.19	106767
4:16:21 PM	196.34	68559
4:16:31 PM	196.50	52726
4:16:41 PM	196.67	49726
4:16:51 PM	196.84	49559
4:17:01 PM	197.02	48892
4:17:11 PM	197.20	51142
4:17:21 PM	197.39	53476
4:17:31 PM	197.57	52517
4:17:41 PM	197.76	56976
4:17:51 PM	197.93	59809
4:18:01 PM	198.11	59976
4:18:11 PM	198.29	60351
4:18:21 PM	198.46	69226
4:18:31 PM	198.62	71476
4:18:41 PM	198.79	82017
4:18:51 PM	198.95	92059
4:19:01 PM	199.11	107017
4:19:11 PM	199.27	100142
4:19:21 PM	199.44	89892
4:19:31 PM	199.61	87101
4:19:41 PM	199.78	87601
4:19:51 PM	199.95	85976
4:20:01 PM	200.12	94267
4:20:11 PM	200.30	98226
4:20:21 PM	200.46	112851
4:20:31 PM	200.63	112017
4:20:41 PM	200.80	107767
4:20:51 PM	200.96	131434
4:21:01 PM	201.13	158809
4:21:11 PM	201.29	185351
4:21:21 PM	201.44	210392
4:21:31 PM	201.59	230517
4:21:41 PM	201.77	236934
4:21:51 PM	201.94	241017
4:22:01 PM	202.11	258851
4:22:11 PM	202.27	283017
4:22:21 PM	202.43	295976
4:22:31 PM	202.59	322351
4:22:41 PM	202.78	357142
4:22:51 PM	202.93	376101
4:23:01 PM	203.11	392559
4:23:11 PM	203.28	411934
4:23:21 PM	203.44	436476
4:23:31 PM	203.62	475601
4:23:41 PM	203.77	554559
4:23:51 PM	203.93	711017
4:24:01 PM	204.10	1142851
4:24:11 PM	204.26	1579767
4:24:21 PM	204.43	1463184
4:24:31 PM	204.60	1081059
4:24:41 PM	204.75	727184
4:24:51 PM	204.92	494017
4:25:01 PM	205.09	383392
4:25:11 PM	205.25	307601
4:25:21 PM	205.41	252309
4:25:31 PM	205.57	188892
4:25:41 PM	205.74	133267
4:25:51 PM	205.91	83517
4:26:01 PM	206.08	54851
4:26:11 PM	206.24	43267

Sample Time:	Distance from Pipe Datum (ft.)	Measured Co-60 Activity (dpm/100 cm^2)
4:26:21 PM	206.38	36642
4:26:31 PM	206.54	32851
4:26:41 PM	206.68	28309
4:26:51 PM	206.83	24684
4:27:01 PM	207.00	22559
4:27:11 PM	207.16	19517
4:27:21 PM	207.34	16976
4:27:31 PM	207.50	15142
4:27:41 PM	207.66	12267
4:27:51 PM	207.82	11517
4:28:01 PM	207.98	10767
4:28:11 PM	208.15	9226
4:28:21 PM	208.31	9767
4:28:31 PM	208.46	9267
4:28:41 PM	208.63	10476
4:28:51 PM	208.78	11559
4:29:01 PM	208.93	12809
4:29:11 PM	209.08	12726
4:29:21 PM	209.24	13434
4:29:31 PM	209.42	14226
4:29:41 PM	209.61	14101
4:29:51 PM	209.79	10684
4:30:01 PM	209.94	11976
4:30:11 PM	210.11	7767
4:30:21 PM	210.27	8976
4:30:31 PM	210.43	10517
4:30:41 PM	210.61	9601
4:30:51 PM	210.76	9767
4:31:01 PM	210.91	11184
4:31:11 PM	211.07	10726
4:31:21 PM	211.23	14601
4:31:31 PM	211.38	21601
4:31:41 PM	211.54	37809
4:31:51 PM	211.70	54976
4:32:01 PM	211.86	59601
4:32:11 PM	212.01	46642
4:32:21 PM	212.17	34559
4:32:31 PM	212.32	32226
4:32:41 PM	212.48	32684
4:32:51 PM	212.64	37601
4:33:01 PM	212.79	45017
4:33:11 PM	212.94	49559
4:33:21 PM	213.09	52476
4:33:31 PM	213.25	57934
4:33:41 PM	213.41	60809
4:33:51 PM	213.58	53851
4:34:01 PM	213.75	49517
4:34:11 PM	213.90	45684
4:34:21 PM	214.05	47392
4:34:31 PM	214.21	42809
4:34:41 PM	214.36	39476
4:34:51 PM	214.51	36392
4:35:01 PM	214.68	37851
4:35:11 PM	214.84	34559
4:35:21 PM	214.99	35017
4:35:31 PM	215.14	32559
4:35:41 PM	215.29	37101
4:35:51 PM	215.44	30434
4:36:01 PM	215.59	33017
4:36:11 PM	215.76	31684
4:36:21 PM	215.91	34726
4:36:31 PM	216.07	32226
4:36:41 PM	216.21	33059
4:36:51 PM	216.37	34142
4:37:01 PM	216.57	32976
4:37:11 PM	216.77	35184
4:37:21 PM	216.97	40851
4:37:31 PM	217.21	50517
4:37:41 PM	217.43	57476
4:37:51 PM	217.63	68809
4:38:01 PM	217.83	71434
4:38:11 PM	218.02	65351
4:38:21 PM	218.23	73309
4:38:31 PM	218.46	71892
4:38:41 PM	218.71	55809
4:38:51 PM	218.94	61351
4:39:01 PM	219.16	56809
4:39:11 PM	219.37	64559
4:39:21 PM	219.58	69601
4:39:31 PM	219.77	61142
4:39:41 PM	219.96	67434
4:39:51 PM	220.18	71476
4:40:01 PM	220.34	84226
4:40:11 PM	220.50	111601
4:40:21 PM	220.66	147434
4:40:31 PM	220.81	165559
4:40:41 PM	220.95	188684
4:40:51 PM	221.10	179309
4:41:01 PM	221.26	166101
4:41:11 PM	221.45	146226

Sample Time:	Distance from Pipe Datum (ft.)	Measured Co-60 Activity (dpm/100 cm^2)
4:41:21 PM	221.62	111059
4:41:31 PM	221.79	97892
4:41:41 PM	221.96	104809
4:41:51 PM	222.13	96684
4:42:01 PM	222.29	89434
4:42:11 PM	222.45	98017
4:42:21 PM	222.62	104434
4:42:31 PM	222.80	84392
4:42:41 PM	222.96	77684
4:42:51 PM	223.11	74851
4:43:01 PM	223.27	61851
4:43:11 PM	223.42	52226
4:43:21 PM	223.57	56767
4:43:31 PM	223.72	65559
4:43:41 PM	223.87	72434
4:43:51 PM	224.02	82517
4:44:01 PM	224.17	76726
4:44:11 PM	224.35	79934
4:44:21 PM	224.50	75642
4:44:31 PM	224.65	78684
4:44:41 PM	224.81	77184
4:44:51 PM	224.96	77184
4:45:01 PM	225.11	78934
4:45:11 PM	225.26	84142
4:45:21 PM	225.41	86226
4:45:31 PM	225.56	81892
4:45:41 PM	225.71	76934
4:45:51 PM	225.87	74601
4:46:01 PM	226.02	86809
4:46:11 PM	226.17	88684
4:46:21 PM	226.33	68809
4:46:31 PM	226.47	56142
4:46:41 PM	226.62	49851
4:46:51 PM	226.80	48851
4:47:01 PM	226.98	49476
4:47:11 PM	227.16	51892
4:47:21 PM	227.35	52476
4:47:31 PM	227.53	47434
4:47:41 PM	227.74	42892
4:47:51 PM	227.94	36101
4:48:01 PM	228.13	27601
4:48:11 PM	228.34	23101
4:48:21 PM	228.53	17767
4:48:31 PM	228.73	15434
4:48:41 PM	228.92	14517
4:48:51 PM	229.10	15184
4:49:01 PM	229.31	15559
4:49:11 PM	229.50	13726
4:49:21 PM	229.71	9684
4:49:31 PM	229.89	6142
4:49:41 PM	230.02	6351
4:49:51 PM	230.15	7059
4:50:01 PM	230.28	6309
4:50:11 PM	230.42	5351
4:50:21 PM	230.56	6142
4:50:31 PM	230.71	6142
4:50:41 PM	230.86	6726
4:50:51 PM	231.01	8892
4:51:01 PM	231.16	9809
4:51:11 PM	231.31	6287
4:51:21 PM	231.47	6934
4:51:31 PM	231.62	6934
4:51:41 PM	231.77	12517
4:51:51 PM	231.92	14059
4:52:01 PM	232.07	21642
4:52:11 PM	232.22	26226
4:52:21 PM	232.37	19434
4:52:31 PM	232.52	16309
4:52:41 PM	232.67	9434
4:52:51 PM	232.82	5976
4:53:01 PM	232.97	3684
4:53:11 PM	233.11	3767
4:53:21 PM	233.26	3309
4:53:31 PM	233.40	5476
4:53:41 PM	233.56	6142
4:53:51 PM	233.71	3892
4:54:01 PM	233.85	2392
4:54:11 PM	233.99	1851
4:54:21 PM	234.13	2517
4:54:31 PM	234.27	3184
4:54:41 PM	234.42	3559
4:54:51 PM	234.56	2267
4:55:01 PM	234.71	4517
4:55:11 PM	234.85	6767
4:55:21 PM	234.99	11601
4:55:31 PM	235.12	14351
4:55:41 PM	235.26	13267
4:55:51 PM	235.40	11059
4:56:01 PM	235.54	7767
4:56:11 PM	235.69	4601

Sample Time:	Distance from Pipe Datum (ft.)	Measured Co-60 Activity (dpm/100 cm^2)
4:56:21 PM	235.83	3476
4:56:31 PM	235.98	3309
4:56:41 PM	236.13	3309
4:56:51 PM	236.28	4309
4:57:01 PM	236.42	5684
4:57:11 PM	236.57	4851
4:57:21 PM	236.72	3226
4:57:31 PM	236.86	1726
4:57:41 PM	237.00	1517
4:57:51 PM	237.14	1267
4:58:01 PM	237.29	1392
4:58:11 PM	237.43	767
4:58:21 PM	237.50	1392
4:58:31 PM	237.59	1851
4:58:41 PM	237.68	1976
4:58:51 PM	237.76	1517
4:59:01 PM	237.85	2392
4:59:11 PM	237.93	1309
4:59:21 PM	238.01	1726
4:59:31 PM	238.10	1809
4:59:41 PM	238.18	892
4:59:51 PM	238.27	1392
5:00:01 PM	238.35	2351
5:00:11 PM	238.44	1601
5:00:21 PM	238.52	1601
5:00:31 PM	238.64	2309
5:00:41 PM	238.80	2267
5:00:51 PM	238.96	3434
5:01:01 PM	239.12	5059
5:01:11 PM	239.28	6392
5:01:21 PM	239.45	5642
5:01:31 PM	239.60	2559
5:01:41 PM	239.76	1434
5:01:51 PM	239.76	1601
5:02:01 PM	239.76	1476
5:02:11 PM	239.77	2142
12/13/96		
8:40:06 AM	239.75	2434
8:40:16 AM	239.92	2976
8:40:26 AM	240.08	5226
8:40:36 AM	240.24	6601
8:40:46 AM	240.40	3976
8:40:56 AM	240.56	3059
8:41:06 AM	240.72	1559
8:41:16 AM	240.87	1934
8:41:26 AM	241.03	2434
8:41:36 AM	241.19	2976
8:41:46 AM	241.35	2934
8:41:56 AM	241.49	2142
8:42:06 AM	241.64	1142
8:42:16 AM	241.79	1976
8:42:26 AM	241.94	3559
8:42:36 AM	242.10	3267
8:42:46 AM	242.25	2059
8:42:56 AM	242.41	2642
8:43:06 AM	242.56	2809
8:43:16 AM	242.71	2767
8:43:26 AM	242.86	3976
8:43:36 AM	243.01	3934
8:43:46 AM	243.16	5142
8:43:56 AM	243.31	3976
8:44:06 AM	243.47	3559
8:44:16 AM	243.62	3059
8:44:26 AM	243.78	1934
8:44:36 AM	243.92	2184
8:44:46 AM	244.07	1684
8:44:56 AM	244.23	2184
8:45:06 AM	244.38	2517
8:45:16 AM	244.55	2809
8:45:26 AM	244.71	4767
8:45:36 AM	244.86	5309
8:45:46 AM	245.02	7017
8:45:56 AM	245.20	7684
8:46:06 AM	245.37	7601
8:46:16 AM	245.53	8392
8:46:26 AM	245.72	5476
8:46:36 AM	245.90	6226
8:46:46 AM	246.08	7684
8:46:56 AM	246.25	7476
8:47:06 AM	246.43	3934
8:47:16 AM	246.61	2184
8:47:26 AM	246.80	2101
8:47:36 AM	246.98	1142
8:47:46 AM	247.16	1517
8:47:56 AM	247.34	1059
8:48:06 AM	247.52	684
8:48:16 AM	247.71	309
8:48:26 AM	247.90	934
8:48:36 AM	248.09	1517
8:48:46 AM	248.28	2809

Sample Time:	Distance from Pipe Datum (ft.)	Measured Co-60 Activity (dpm/100 cm^2)
8:48:56 AM	248.46	4767
8:49:06 AM	248.64	5434
8:49:16 AM	248.86	9476
8:49:26 AM	249.06	10517
8:49:36 AM	249.25	9351
8:49:46 AM	249.43	6809
8:49:56 AM	249.63	3226
8:50:06 AM	249.82	2059
8:50:16 AM	250.00	2517
8:50:26 AM	250.20	3684
8:50:36 AM	250.39	2767
8:50:46 AM	250.60	3684
8:50:56 AM	250.79	3101
8:51:06 AM	250.98	3309
8:51:16 AM	251.17	3309
8:51:26 AM	251.35	5809
8:51:36 AM	251.54	5392
8:51:46 AM	251.72	5392
8:51:56 AM	251.91	4101
8:52:06 AM	252.09	4559
8:52:16 AM	252.27	4059
8:52:26 AM	252.45	2559
8:52:36 AM	252.64	1642
8:52:46 AM	252.82	1684
8:52:56 AM	253.00	1559
8:53:06 AM	253.19	2976
8:53:16 AM	253.38	2101
8:53:26 AM	253.55	2392
8:53:36 AM	253.72	2351
8:53:46 AM	253.88	2601
8:53:56 AM	254.05	3934
8:54:06 AM	254.22	5351
8:54:16 AM	254.39	5767
8:54:26 AM	254.57	4184
8:54:36 AM	254.73	5184
8:54:46 AM	254.90	8559
8:54:56 AM	255.07	7226
8:55:06 AM	255.23	6226
8:55:16 AM	255.40	5226
8:55:26 AM	255.58	5101
8:55:36 AM	255.74	3142
8:55:46 AM	255.90	2142
8:55:56 AM	256.07	1559
8:56:06 AM	256.22	2267
8:56:16 AM	256.39	2309
8:56:26 AM	256.55	1309
8:56:36 AM	256.72	1309
8:56:46 AM	256.89	1476
8:56:56 AM	257.05	1934
8:57:06 AM	257.22	1392
8:57:16 AM	257.38	1851
8:57:26 AM	257.54	2476
8:57:36 AM	257.72	2851
8:57:46 AM	257.91	5017
8:57:56 AM	258.09	3559
8:58:06 AM	258.26	4267
8:58:16 AM	258.42	3767
8:58:26 AM	258.58	3184
8:58:36 AM	258.73	2892
8:58:46 AM	258.89	3559
8:58:56 AM	259.05	1976
8:59:06 AM	259.21	2476
8:59:16 AM	259.36	2767
8:59:26 AM	259.52	2976
8:59:36 AM	259.68	2934
8:59:46 AM	259.83	3559
8:59:56 AM	259.92	3767
9:00:06 AM	259.92	3892
9:00:16 AM	259.92	3892
9:00:26 AM	259.93	4017
9:00:36 AM	260.04	4017
9:00:46 AM	260.14	3934
9:00:56 AM	260.15	2392
9:01:06 AM	260.15	2892
9:01:16 AM	260.15	3226
9:01:26 AM	260.15	3226
9:01:36 AM	260.15	2101
9:01:46 AM	260.15	2767
9:01:56 AM	260.15	2601
9:02:06 AM	260.15	2684
9:02:16 AM	260.15	2309
9:02:26 AM	260.15	4434
9:02:36 AM	260.15	3517
9:02:46 AM	260.15	2184
9:02:56 AM	260.15	2392
9:03:06 AM	260.15	3976
9:03:16 AM	260.15	2392
9:03:26 AM	260.16	2517
9:03:36 AM	260.11	2842
9:03:46 AM	259.76	2476

Sample Time:	Distance from Pipe Datum (ft.)	Measured Co-60 Activity (dpm/100 cm^2)
9:03:56 AM	259.55	3267
9:04:06 AM	259.42	4017
9:04:16 AM	259.42	3434
9:04:26 AM	259.42	3559
9:04:36 AM	259.42	2184
9:04:46 AM	259.42	3767
9:04:56 AM	259.42	4017
9:05:06 AM	259.42	3101
9:05:16 AM	259.42	3559
9:05:26 AM	259.42	3309
9:05:36 AM	259.42	3809
9:05:46 AM	259.42	3351
9:05:56 AM	259.42	3934
9:06:06 AM	259.42	3809
9:06:16 AM	259.42	4059
9:06:26 AM	259.42	3642
9:06:36 AM	259.42	3892
9:06:46 AM	259.42	2809
9:06:56 AM	259.42	3642
9:07:06 AM	259.42	3892
9:07:16 AM	259.42	3851
9:07:26 AM	259.42	2767
9:07:36 AM	259.42	3017
9:07:46 AM	259.42	2934
9:07:56 AM	259.42	3517
9:08:06 AM	259.42	3726
9:08:16 AM	259.42	3309
9:08:26 AM	259.42	3392
9:08:36 AM	259.42	2976
9:08:46 AM	259.42	3726
9:08:56 AM	259.42	3892
9:09:06 AM	259.42	3934
9:09:16 AM	259.42	3476
9:09:26 AM	259.42	4101
9:09:36 AM	259.42	4851
9:09:46 AM	259.42	3309
9:09:56 AM	259.42	3184
9:10:06 AM	259.42	2601
9:10:16 AM	259.42	3851
9:10:26 AM	259.42	3517
9:10:36 AM	259.42	4059
9:10:46 AM	259.42	3684
9:10:56 AM	259.42	3226
9:11:06 AM	259.42	3892
9:11:16 AM	259.42	4559
9:11:26 AM	259.42	2684
9:11:36 AM	259.42	4351
9:11:46 AM	259.42	4309
9:11:56 AM	259.42	4726
9:12:06 AM	259.42	4434
9:12:16 AM	259.42	3267
9:12:26 AM	259.42	2934
9:12:36 AM	259.42	3476
9:12:46 AM	259.42	2892
9:12:56 AM	259.42	2976
9:13:06 AM	259.42	4434
9:13:16 AM	259.42	4309
9:13:26 AM	259.42	3142
9:13:36 AM	259.42	2726
9:13:46 AM	259.42	3842
9:13:56 AM	259.42	4101
9:14:06 AM	259.42	3017
9:14:16 AM	259.42	2642
9:14:26 AM	259.42	3226
9:14:36 AM	259.42	4059
9:14:46 AM	259.42	3767
9:14:56 AM	259.42	3559
9:15:06 AM	259.42	4267
9:15:16 AM	259.42	3767
9:15:26 AM	259.42	4184
9:15:36 AM	259.42	3767
9:15:46 AM	259.42	2934
9:15:56 AM	259.42	3434
9:16:06 AM	259.42	3809
9:16:16 AM	259.42	3642
9:16:26 AM	259.42	4142
9:16:36 AM	259.42	3934
9:16:46 AM	259.42	4101
9:16:56 AM	259.42	3976
9:17:06 AM	259.42	4267
9:17:16 AM	259.42	3351
9:17:26 AM	259.42	3767
9:17:36 AM	259.42	3559
9:17:46 AM	259.42	3601
9:17:56 AM	259.42	3392
9:18:06 AM	259.42	3601
9:18:16 AM	259.42	3184
9:18:26 AM	259.42	3892
9:18:36 AM	259.42	3559
9:18:46 AM	259.42	3851

Sample Time:	Distance from Pipe Datum (ft.)	Measured Co-60 Activity (dpm/100 cm^2)
9:18:56 AM	259.36	3184
9:19:06 AM	259.15	3101
9:19:16 AM	258.87	3267
9:19:26 AM	258.54	2226
9:19:36 AM	258.41	2517
9:19:46 AM	258.41	2351
9:19:56 AM	258.41	2892
9:20:06 AM	258.41	3684
9:20:16 AM	258.41	2434
9:20:26 AM	258.41	2976
9:20:36 AM	258.41	2851
9:20:46 AM	258.41	2476
9:20:56 AM	258.41	1892
9:21:06 AM	258.41	2226
9:21:16 AM	258.41	2517
9:21:26 AM	258.41	2101
9:21:36 AM	258.41	3101
9:21:46 AM	258.41	3392
9:21:56 AM	258.41	3309
9:22:06 AM	258.41	2226
9:22:16 AM	258.41	2517
9:22:26 AM	258.41	2642
9:22:36 AM	258.41	3392
9:22:46 AM	258.41	3309
9:22:56 AM	258.41	3434
9:23:06 AM	258.41	3142
9:23:16 AM	258.41	2851
9:23:26 AM	258.41	3309
9:23:36 AM	258.41	3184
9:23:46 AM	258.41	3017
9:23:56 AM	258.41	2684
9:24:06 AM	258.41	2392
9:24:16 AM	258.41	2351
9:24:26 AM	258.41	2726
9:24:36 AM	258.41	2642
9:24:46 AM	258.40	3726
9:24:56 AM	258.40	4017
9:25:06 AM	258.40	3517
9:25:16 AM	258.40	5101
9:25:26 AM	258.39	4892
9:25:36 AM	258.39	3392
9:25:46 AM	258.39	3559
9:25:56 AM	258.39	3976
9:26:06 AM	258.39	4434
9:26:16 AM	258.39	4767
9:26:26 AM	258.39	4142
9:26:36 AM	258.39	4142
9:26:46 AM	258.38	4351
9:26:56 AM	258.38	4309
9:27:06 AM	258.38	3642
9:27:16 AM	258.38	4101
9:27:26 AM	258.38	3267
9:27:36 AM	258.38	4142
9:27:46 AM	258.38	4726
9:27:56 AM	258.38	3642
9:28:06 AM	258.38	3434
9:28:16 AM	258.38	3684
9:28:26 AM	258.38	4434
9:28:36 AM	258.38	3851
9:28:46 AM	258.38	4601
9:28:56 AM	258.38	3601
9:29:06 AM	258.38	3434
9:29:16 AM	258.38	5267
9:29:26 AM	258.38	4767
9:29:36 AM	258.38	5601
9:29:46 AM	258.38	3642
9:29:56 AM	258.38	4476
9:30:06 AM	258.38	3642
9:30:16 AM	258.38	3767
9:30:26 AM	258.38	3101
9:30:36 AM	258.38	3517
9:30:46 AM	258.38	5101
9:30:56 AM	258.38	3934
9:31:06 AM	258.38	3017
9:31:16 AM	258.38	4392
9:31:26 AM	258.38	3517
9:31:36 AM	258.38	3559
9:31:46 AM	258.38	3517
9:31:56 AM	258.38	4767
9:32:06 AM	258.38	3642
9:32:16 AM	258.38	3351
9:32:26 AM	258.38	4351
9:32:36 AM	258.41	2976
9:32:46 AM	258.49	3478
9:32:56 AM	258.65	3559
9:33:06 AM	258.81	3142
9:33:16 AM	258.96	3434
9:33:26 AM	259.11	2434
9:33:36 AM	259.27	2934
9:33:46 AM	259.41	3559

Sample Time:	Distance from Pipe Datum (ft.)	Measured Co-60 Activity (dpm/100 cm^2)
9:33:56 AM	259.56	3434
9:34:06 AM	259.71	3559
9:34:16 AM	259.86	3434
9:34:26 AM	259.98	2809
9:34:36 AM	260.09	2601
9:34:46 AM	260.13	3351
9:34:56 AM	260.13	1851
9:35:06 AM	260.14	2934
9:35:16 AM	260.14	2809
9:35:26 AM	260.15	3059
9:35:36 AM	260.15	2392
9:35:46 AM	260.16	3267
9:35:56 AM	260.16	2934
9:36:06 AM	260.16	2184
9:36:16 AM	260.16	2476
9:36:26 AM	260.17	3101
9:36:36 AM	260.17	3101
9:36:46 AM	260.17	2392
9:36:56 AM	260.15	2476
9:37:06 AM	259.63	2892
9:37:16 AM	258.99	2934
9:37:26 AM	258.99	2226
9:37:36 AM	258.99	2642
9:37:46 AM	259.32	1851
9:37:56 AM	259.67	3684
9:38:06 AM	259.96	1851
9:38:16 AM	260.08	3559
9:38:26 AM	260.07	2851
9:38:36 AM	260.07	2934
9:38:46 AM	260.08	3267
9:38:56 AM	260.08	1976
9:39:06 AM	260.08	2351
9:39:16 AM	260.08	1809
9:39:26 AM	260.08	2642
9:39:36 AM	260.08	1976
9:39:46 AM	260.08	2684
9:39:56 AM	260.08	2809
9:40:06 AM	260.08	3017
9:40:16 AM	260.08	3517
9:40:26 AM	260.08	3017
9:40:36 AM	260.08	3351
9:40:46 AM	260.08	2642
9:40:56 AM	260.08	2726
9:41:06 AM	260.08	3184
9:41:16 AM	260.08	2434
9:41:26 AM	260.08	3517
9:41:36 AM	260.08	2851
9:41:46 AM	260.08	2476
9:41:56 AM	260.08	1976
9:42:06 AM	260.08	2976
9:42:16 AM	260.08	2559
9:42:26 AM	260.08	2726
9:42:36 AM	260.08	1476
9:42:46 AM	260.08	2476
9:42:56 AM	260.08	3017
9:43:06 AM	260.08	2809
9:43:16 AM	260.08	2351
9:43:26 AM	260.09	3601
9:43:36 AM	260.09	2142
9:43:46 AM	260.09	1767
9:43:56 AM	260.09	2351
9:44:06 AM	260.09	3017
9:44:16 AM	259.70	2809
9:44:26 AM	259.20	2726
9:44:36 AM	258.91	3309
9:44:46 AM	259.29	3434
9:44:56 AM	259.53	4142
9:45:06 AM	259.75	2267
9:45:16 AM	259.95	2309
9:45:26 AM	260.07	2184
9:45:36 AM	260.07	2934
9:45:46 AM	260.07	2601
9:45:56 AM	260.07	3226
9:46:06 AM	260.07	1976
9:46:16 AM	260.07	2184
9:46:26 AM	260.07	2309
9:46:36 AM	260.07	2101
9:46:46 AM	260.07	3434
9:46:56 AM	260.07	3684

Appendix O

Beryllium Information

MANUAL TITLE	MANUAL NUMBER	PAGE
MOUND SAFETY AND HYGIENE MANUAL	**MD-10286**	1 of 9
SECTION TITLE	SECTION NUMBER	
INDUSTRIAL HYGIENE	D	
OPERATION TITLE	OPERATION	ISSUE
Chronic Beryllium Disease Prevention Program	D19	1
SUBMITTED BY	ECN	DATE
M. W. Uelen	960302MD	03/04/98

1.0 PURPOSE

This program is for managing beryllium hazards present at Mound as required by DOE N440.1. Provisions within this procedure are designed to prevent unnecessary exposure to personnel and the public.

2.0 SCOPE

This program provides instructions for identifying, evaluating and decontaminating beryllium contamination areas and equipment and controlling occupational exposure. At a minimum, the program will encompass exposure limits, exposure monitoring, engineering and work practice controls, personal protective equipment, training, medical surveillance, record keeping and performance feedback to DOE.

3.0 DEFINITIONS

3.1 ACGIH: American Conference of Governmental Industrial Hygienists

3.2 Aerosols: Liquid droplets or solid particles, dispersed in air, that are of fine enough particle size to remain so dispersed for a period of time.

3.3 AIRBORNE LIMITS: The exposure standards for chemical substances, including beryllium, adopted by DOE-Mound are the ACGIH "Threshold Limit Values (TLVs) for Chemical Substances and Physical Agents in the Work Environment" most current edition.

- The 1996 TLV for beryllium is 2 ug/m^3 and is listed as an industrial substance confirmed of carcinogenic potential for man. In addition, the current OSHA PEL (also adopted by DOE) is 2 ug/m^3 8-hour Time-Weighted-Average (TWA) with a 5 ug/m^3 Ceiling and a 25 ug/m^3 30 minute maximum peak concentration.

3.4 Be-LPT: The Beryllium Lymphocyte Proliferation Test is a blood test that has been adopted to help identify individuals who may be sensitized to beryllium.

3.5 BERYLLIUM: In general, beryllium includes beryllium metal, beryllium oxide, alloys containing $\geq$ 0.15% beryllium, and beryllium compounds (such as beryllium sulfate).

3.6 BERYLLIUM D&D OPERATIONS: Decontamination and Decommissioning of any past beryllium operation location. Contaminated surfaces may include, but is not limited to rooms, ventilation systems, machinery, and crawlspaces. These areas have the potential for (1) production of aerosols containing beryllium or (2) beryllium contaminated surfaces.

3.7 DYSPNEA: Being short of breath.

3.8 HASP: Health and Safety Plan

3.9 JSHA: Job Safety and Health Analysis

3.9 REGULATED AREA - Refers to a restricted area established to reduce employee exposure. The area is demarcated from the rest of the work place so that it minimizes the number of employees who will be exposed. Warning signs should be posted at entrances and logbooks should be kept to document entrants for medical surveillance purposes.

3.10 SPUTUM: Expectorated saliva

3.11 SURFACE SWIPE LIMIT: The concentration of beryllium observed on a surface that is used as an index of surface cleanliness and does not necessarily indicate a beryllium occupational exposure hazard.

4.0 IDENTIFICATION OF AREAS (HAZARD ASSESSMENT)

4.1 Industrial Safety & Health (IS&H) will conduct beryllium hazard assessments of all known former beryllium operational areas at Mound. In areas where an in-depth analysis is warranted, the Job Hazard Assessment form will be used in conjunction with the Hazard Assessment Procedure MD-80040, Section 1003. Included in the assessments will be analysis of existing conditions, exposure data, sampling requirements, medical surveillance trends and exposure potential of planned activities.

4.2 The Property Management/High Risk Review group requests IS&H approval to excess equipment. Future approval requests may identify machining equipment used in former beryllium areas, not previously known to IS&H. Machining equipment lacking a complete history or proper identification may also arise in requests. Assessment and sampling will be done in both cases.

4.3 Systems/locations that are found to be beryllium contaminated shall be posted with signs provided by Industrial Safety & Health. These signs shall state "Warning- Beryllium Contamination Present- Do not enter/access ventilation system without prior approval from Industrial Safety & Health" or "-Warning- Internal/External Beryllium Contamination" or "Danger- Beryllium Dust (or Fumes)- Inhalation of Dust or Fumes May Cause Serious Chronic Lung Disease- Potential Cancer Hazard- Contact Industrial Safety & Health Prior to Entry."

5.0 HISTORICAL PERSPECTIVE

Beryllium, the lightest structural metal, was employed as a moderator and reflector of neutrons and as a producer of neutrons when bombarded with alpha particles in nuclear operations at Mound. It is a hard, brittle, gray, non-radioactive metal element. The ACGIH has classified beryllium as a "Confirmed Human Carcinogen." The primary hazard with beryllium is the generation of beryllium aerosols and their inhalation. Chronic exposure to beryllium in the past 50 years has led to 88 cases of Chronic Beryllium Disease (CBD) within the DOE complex. CBD is a hypersensitivity reaction that affects a small percentage of the people who inhale beryllium aerosols. As the disease progresses, inflammation and scarring of the lungs make breathing more difficult. The disease is debilitating, life shortening and has no cure.

Past operational areas (declassified), known to the IS&H department, that potentially generated beryllium metal aerosols or machined copper-beryllium metal are listed below:

1. B-building- Rooms# 102 and 105 (beryllium copper alloy work only, contaminated pin cutter in room, no other surface contamination detected).
2. DS-building- Room# 131A contains systems for metal vaporization. Some beryllium may have been vaporized in the belljars before 1970 according to a former area manager. The belljars were changed out in the 1980s and no beryllium/beryllium-copper work has been performed in the area. The system exhaust ports were sampled and found negative for beryllium. The belljars' internal surfaces shall be swiped for beryllium prior to release to the public.
3. E-building- Room# 101 (swipe sampling proved no residual contamination left in room).
4. M-building- Room# 42 (swipe sampling confirmed no residual contamination, no lathes in room at time of sampling). Room# 8 has an excessed Marsburg jig boring machine used in the former T-building beryllium machine shop stored on the main floor. Its surfaces were tested and found positive for beryllium. Warning labels are attached to warn of the beryllium hazard.
5. R-building- Rooms# 118, 119, 120, 121, 123, 133, 137, 145, 149, 152, 160, 161, 164, 167, 169, 177, (Contact Industrial Safety & Health for histories).
6. SW building- Room# 9, Room renovated in 1991, contaminated lathes moved, boxed or excessed. The history is not fully known.
7. T-building, Rooms# 1, 2, 3, 4, 8, 11, 247, 248, 259, 277, 279 (Contact Industrial Safety & Health for histories).
8. Building 46, Room# 1 (beryllium copper alloy work only, internally contaminated lathe in room, no other surface contamination detected).

Where there is a known potential for future exposure occurring from deposition/residue from past operations; Industrial Safety & Health has posted these locations per Section 4.3.

6.0 SURFACE CLEANLINESS/CLEARANCE LIMITS

Industrial Safety & Health evaluates surface cleanliness by collecting the surface swipes and comparing the results to the Mound adopted swipe sample clearance level of .2 ug/100 cm^2 for past beryllium operation areas. Currently, there are no DOE or OSHA adopted or established surface contamination limits.

Surface swipe sampling shall be performed in accordance with MD-80040, Section 1012.

Swipe samples are not quantitative indicators of hazard or personnel exposure. They cannot be correlated with inhalation exposures. They are used to measure surface cleanliness levels and verify the presence of beryllium. The industrial hygienist/industrial hygiene technician must use professional judgement on a case-by-case basis when evaluating the significance of positive swipe sampling results.

7.0 EXPOSURE REDUCTION AND MINIMIZATION

7.1 BERYLLIUM D&D OPERATIONS

Mound has no present beryllium operations. Any Mound activity performed by operating contractor personnel with the potential for beryllium contamination, will occur only during D&D activities.

7.1.1 HASPs, JSHAs and other health and safety related control documents shall make reference to beryllium hazards and the protective measures associated with the Decontamination and Decommissioning of identified facilities.

7.1.2 Special exhaust ventilation systems and air cleaning devices may be needed during beryllium D&D operations to minimize the spread of beryllium aerosols. HEPA exhaust units may be necessary to maintain exposure below airborne limits.

7.1.3 Exposure reduction and minimization principles will be administered by following the Carcinogen Control Program (MD-10286, D3). This program requires regulated areas be established where the anticipated and/or monitored employee exposures to beryllium exceed the action level or if IS&H determines that a significant potential for occupational exposure exists.

7.1.4 Dry-cleaning methods will be prohibited; these methods will resuspend previously settled dust in the workplace air where it can enter the employee's breathing zone. Examples of dry cleaning are shoveling, sweeping, brushing or by the use of compressed air.

7.1.5 Beryllium contaminated equipment shall meet the same swipe sample clearance level of .2 ug/100 cm^2 for excess. There are several options for equipment that tests positive for beryllium contamination.

A. The equipment could be wrapped in plastic, labeled, and sold "as is" with the beryllium contamination and the liability passed on in a purchasing agreement.

B. Comparing the costs associated with decontamination versus the actual cost of the equipment should be done for excess equipment. A dollar value of $10,000 is used by many companies as cutoff for cleaning or disposing of equipment as beryllium contaminated waste.

C. Resampling will be performed on equipment after thorough steam cleaning and flushing with a degreasing agent. If several cleanings cannot reach the .2 ug/100 cm^2, a value less than 1 ug/ft^2 could be accepted as a "best achievable clearance level" depending on the necessity of the equipment.

7.2 EXPOSURE MONITORING

7.2.1. Personnel Exposure: Beryllium D&D operations require workplace and personal monitoring on a frequency established by Industrial Safety & Health per MD-80040, Section 1001. The sampling strategy will require at least one sample for each different job task, during beryllium D&D operations, to allow for representative reporting to all affected employees. Industrial Safety & Health provides workplace sampling results to affected employees in writing.

7.2.2 Ongoing beryllium D&D operations will use an Action Level of 0.5 ug/m^3 to initiate wearing respiratory protection. Industrial Safety & Health will require respiratory protection for any new beryllium related operations that are judged to potentially reach the Action Level.

7.3. PERSONAL PROTECTIVE EQUIPMENT

7.3.1 Respiratory Protective Equipment: Employees must be provided with respiratory protective equipment when engineering or workplace controls may not effectively reduce the exposure to beryllium aerosols below the Action level. General requirements for respiratory protection are given in Mound's Respiratory Protection Manual, MD-10161. Specific respiratory protective equipment requirements for beryllium workers are provided by Industrial Safety & Health and must be included in all HASPs, JSHAs and other health and safety related control documents.

7.3.2 Protective Clothing: Single-use (disposable) coveralls may be used, but must be disposed of as beryllium waste. Protective clothing shall be removed at the end of the employee's shift. In radioactively contaminated work areas, Radiological Engineering and Industrial Safety & Health will collaborate on the required protective clothing needs.

- o Hand Protection: Beryllium workers with open cuts on their hands or those exposed to soluble beryllium compounds (for example, beryllium fluoride) must use latex gloves. When there is a risk for skin cuts, cloth or leather gloves are required.

- o Protective Eye Wear: Personnel must wear safety glasses when the operation could involve beryllium contamination of the eyes.

7.4 WASTE MANAGEMENT

7.4.1. Waste Disposal: Beryllium waste containers containing contaminated clothing, equipment, ventilation systems, and other wastes must be conspicuously marked with the following words: "BERYLLIUM-WARNING, INHALATION OF DUST MAY CAUSE LUNG DAMAGE, SUSPECT CARCINOGEN, MAY PREVENT HEALING OF OPEN WOUNDS." These labels are available from Waste Management. Separate non-radioactive beryllium waste from radioactive beryllium waste where possible.

- o Machining oils used in past beryllium operations may be beryllium contaminated and will require special disposal protocol. Contact the Waste Management Group for information about disposal procedures.

8.0 RESPONSIBILITIES/ACCOUNTABILITY

8.1 Project Managers

- o Responsible for implementing the directives in this program to comply with DOE Order 440.1-7.
- o Ensure that all employees under their direction have received medical surveillance and beryllium training prior to beginning any work with beryllium that has the possibility of reaching the Action level.

8.2 Industrial Safety & Health

- o The Point of Contacts (POCs) working for the project managers shall ensure that beryllium concerns in their respective areas are controlled, following the recommendations of this program, by implementing controls in affected HASPs, JSHAs or other safety documents written, reviewed and/or approved by the POCs.
- o POCs are responsible for informing Medical when new beryllium workers require medical surveillance.
- o POCs perform ongoing inspections of Mound work sites to ensure compliance.
- o Industrial Hygiene personnel shall perform job hazard analyzes (JHAs) for known beryllium work areas.
- o Industrial Hygiene personnel shall perform all monitoring associated with the D&D of beryllium work areas and equipment in accordance with Sections 6.0 and 7.2 of this program.
- o Industrial Hygiene personnel shall recommend specific personal protective equipment for all beryllium work.

- All records generated by IS&H personnel related to beryllium shall be kept for 75 years.

8.3 Waste Management

Provide guidance with beryllium waste issues and assistance in the disposal of waste.

8.4 Medical

Provide physical examinations to beryllium workers. Maintain all beryllium worker medical records. Responsible for maintaining the log of current and former beryllium workers for the Mound site.

8.5 Central Training

Be in accordance with Section 11.0 of this program.

9.0 GOALS AND PERFORMANCE MEASURES

9.1 GOALS

9.1.1 A. Minimize exposure to beryllium
B. Minimize the number of instances of potential exposure to beryllium
C. Ensure all beryllium workers are properly enrolled in the medical surveillance and properly trained.

9.2 PERFORMANCE MEASURES

9.2.1 A. Perform hazard assessments and sampling as necessary in locations of former beryllium operational areas and equipment.
B. Label and post signs at locations and on equipment/systems that have beryllium contamination. Label and post signs in accordance with section 4.3.
C. Perform an annual program assessment to confirm exposed and potentially exposed workers are identified as beryllium workers and that Medical is complying with the Medical Surveillance portion of this program (section 10.0) and that all personnel with reasonably anticipated exposure to beryllium are trained.

10.0 MEDICAL SURVEILLANCE

10.1 An employee may not begin working in an area posted for its beryllium hazards until Medical has completed a comprehensive pre-placement examination and the employee's manager has received Medical approval to begin work. Regardless of future work assignments, beryllium workers must remain under medical surveillance while they are employed by Mound.

10.2 Accident/Incident Reporting: Beryllium decontamination workers who are injured on the job must report the incident to their supervisor and to Medical in accordance with MD-10286, K1 Accident/Incident Reporting.

10.3 Where historical information links a past operation to beryllium work or if swipe samples exceed recommended levels at the location of a suspect operation, the former workers involved will be identified as beryllium workers.

10.4 Each beryllium decontamination worker should receive an annual evaluation. The evaluation should include:

A. Spirometry, including FVC and FEV1.0

B. A medical history questionnaire that includes presence and degree of respiratory symptoms, (i.e., dyspnea, cough, sputum, production, and wheezing).

C. Physical examination

D. A 14 inch by 17 inch chest X-ray should be offered.

E. The Beryllium Lymphocyte Proliferation Test (Be-LPT) should be offered to all known or self-identified current and former beryllium workers. Workers should understand that the Be-LPT can produce false positive and false negative results.

11.0 TRAINING

11.1 All employees with reasonably anticipated occupational exposure to beryllium shall participate in a training program prior to assignment. Initially, Industrial Safety & Health evaluates operations associated with the admission to beryllium contaminated areas. This evaluation includes the determination for whether beryllium worker training is needed.

11.2 Industrial Safety & Health/Central Training will provide supervisors with job-specific training materials for beryllium decontamination workers; informing them of the hazards of beryllium work, the adverse symptoms of beryllium overexposure, engineering and administrative controls, appropriate emergency procedures, maintenance procedures, housekeeping/ decontamination methods, use of protective equipment, exposure minimization, medical monitoring, and the precautionary measures needed to help ensure a safe work place when working with beryllium.

11.3 All environmental, safety, and health training associated with beryllium work must be documented, whether it is a course or on-the-job training. The present Mound training class for beryllium workers is found under course# 050054 and is titled "Beryllium Health Hazards." There is no annual training requirement at this time.

11.4 In the near future, training requirements may be expanded to match the employee's level of involvement with beryllium. A beryllium awareness training class may be developed to supplement the general beryllium worker "Beryllium Health Hazards" course.

12.0 RECORD MAINTENANCE AND ACCESS

12.1 Exposure monitoring and medical records shall be maintained for at least the duration of employment plus 75 years for all beryllium workers.

12.2 Exposure monitoring and medical records shall be provided upon request to employees and their designated representatives in accordance with 29 CFR 1910.20.

12.3 Industrial Safety and Health will control and maintain all job hazard assessment records, beryllium and beryllium contamination inventories and IS&H sampling data. All air monitoring data are available on the Mound local area network (LAN) through the MESH system.

12.4 Medical shall maintain all records associated with medical surveillance of beryllium workers.

13.0 PERFORMANCE FEEDBACK

13.1 IS&H personnel will perform periodic analysis of monitoring results, the hazards identified, medical surveillance results, attainment of exposure reduction and minimization goals and occurrence reporting data.

13.2 All pertinent findings and results associated with beryllium activities and records' review will be forwarded to project managers, line managers, the medical group and others to ensure that needed information is available to maintain and improve all elements of the Chronic Beryllium Disease Prevention Program continuously.

14.0 REFERENCES

Implementation Guide For Use With DOE N 440.1, Interim Chronic Beryllium Disease Prevention Program, DOE G 440.1-7, Draft 7/11/97

National Institute for Occupational Safety and Health (NIOSH) Criteria Document Recommendations for a Beryllium Standard, 1972

American Industrial Hygiene Association, Hygienic Guide Series, Beryllium and its Compounds (7440-41-7) Revised, 1985.

Mound Industrial Hygiene Procedures Technical Manual, MD-80040, Issue 5

Appendix P

Phase I Environmental Site Assessment of DS Building (HOK/K)

HOK/K

PHASE I

ENVIRONMENTAL SITE ASSESSMENT

OF

DOE MOUND BUILDING DS

DOE MOUND

MIAMISBURG, OHIO 45343-3020

HOK/K
Industrial

November 6, 1996

Mr. Sam Cheng
United States Department of Energy
Miamisburg Area Office
P.O. Box 3020
Miamisburg, Ohio 45343-3020

Re: Phase I Environmental Site Assessment
DOE Mound Building DS
Mound Road
Miamisburg, Ohio 45343-3020
Job #: H95234C

Dear Mr. Cheng:

HOK/K Industrial, Inc. has completed a Phase I Environmental Site Assessment of the Department of Energy Mound Building DS, located at DOE Mound in Miamisburg, Ohio. Our investigation included an on-site inspection; a review of United States Department of Energy environmental reports and building prints; examination of historical aerial photographs and maps; a review of federal and state regulatory agency records; and personal interviews. A detailed report of the investigation is enclosed.

We understand that DOE Miamisburg Area Office is relying upon the contents of this report to identify Recognized Environmental Conditions that relate to this property. Disclosure of the contents of this report is at your discretion, and HOK/K will not release additional copies without your written authorization. HOK/K Industrial, Inc. performed its investigation according to the ASTM Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process (Designation E 1527-94). The statements contained in this report are true and accurate to the best of our knowledge.

Sincerely,

HOK/K INDUSTRIAL, INC.

Ellen E. Stanifer
Project Engineer

Jennifer C. Vicarel
Environmental Scientist

Reviewed by:

John W. Ey, P.E., REPA
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PHASE I
ENVIRONMENTAL SITE ASSESSMENT
OF
DOE MOUND BUILDING DS
DOE MOUND
MIAMISBURG, OHIO 45343-3020

Prepared for:

Mr. Sam Cheng
United States Department of Energy
Miamisburg Area Office
P.O. Box 3020
Miamisburg, Ohio 45343-3020

Prepared by:

HOK/K INDUSTRIAL, INC.
2490 Technical Drive
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November 6, 1996

H95234C

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ACRONYMS

AEA	Atomic Energy Act of 1954
AEC	Atomic Energy Commission
ACM	Asbestos-Containing Materials
AL	U.S. Department of Energy Albuquerque Operations Office
ASTM	American Society for Testing and Materials
BUSTR	Bureau of Underground Storage Tank Regulations
CAA	Clean Air Act
CEG	Conditionally Exempt Generator
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COD	Chemical Oxygen Demand
CWA	Clean Water Act
D&D	Decontamination and Decommissioning
DOE	U.S. Department of Energy
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 Corporation
MMCIC	Miamisburg Mound Community Improvement Corporation
MRC	Monsanto Research Corporation
NPDES	National Pollutant Discharge Elimination System
OEPA	Ohio Environmental Protection Agency
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
SARA	Superfund Amendments and Reauthorization Act
SDWA	Safe Drinking Water Act
SHWS	State Hazardous Waste Site
SQG	Small Quantity Generator
SWMU	Solid Waste Management Unit
TRIS	Toxic Chemical Release Inventory System
TSD	Treatment, Storage, and Disposal Facility
UST	Underground Storage Tank
VOC	Volatile Organic Compound
WHP	Well Head Protection (program)

1.0 EXECUTIVE SUMMARY

1.1 At the request of Mr. Sam Cheng of DOE Miamisburg Area Office, HOK/K Industrial, Inc. (HOK/K) has performed a Phase I Environmental Site Assessment of the Department of Energy Mound Building DS located at DOE Mound in Miamisburg, Ohio. This work was performed in accordance with proposal H95-284R1, approved on December 11, 1995. HOK/K performed its investigation according to the ASTM Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process (Designation E 1527-94).

Our investigation included an on-site inspection; examination of historical aerial photographs and maps; a review of federal and state regulatory agency records; and personal interviews. The property inspections (site visits) for the explosives side of the building (east side) took place on August 7 and 8, 1996, and was conducted by Ms. Jennifer Vicarel. She was accompanied by Mr. Mike Merker of DOE, and by Mr. Ed Bogan of EG&G Mound Applied Technologies Maintenance and Operations Group (M&O). The property inspection (site visit) for the metrology laboratories (west side of the building) took place on October 22, 1996, and was conducted by Ms. Jennifer Vicarel and Ms. Ellen Stanifer. They were accompanied by Mr. Mike Merker of DOE, and by Mr. Don Bornemann of EG&G Mound Applied Technologies Maintenance and Operations Group (M&O). Significant exceptions to, or deletions from, our normal procedures, are described in Sections 2.3 and 2.4 of this report.

- The subject site is located at the Mound Plant, adjacent to the southern perimeter of Miamisburg, Ohio. The entire Mound facility is situated on 305 acres of land and comprises more than 132 buildings.

- The subject property consists of the Mound Building DS footprint and surrounding gravel areas, concrete sidewalks, and grassy hillside. Building DS covers 47,810 square feet of space. The building contains active metrology laboratories and discontinued explosives production operations. A few explosives development laboratories are still operational under CRAIDA (Mound-private sector technology transfer agreements). Several areas within the building have been leased to Star City for the production of flexible circuits. In addition, several laboratories are utilized for Mound shipping and inspection services for incoming Mound shipments.

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

- The one potential release site (PRS) related to Building DS and recognized by DOE/EG&G through the FAA/ER combined program is included in our findings as RECs: The DS Building Solvent Storage Shed.

- Twenty-eight other PRSs are located immediately adjacent to Building DS, but are not attributable to operations at Building DS. Most of these PRSs are attributable to operations in Building T, which is located underground at the same location as Building DS. These additional PRSs include underground radioactive waste lines (Main Hill) (PRS 122); T Building solidification unit, T Building solid radioactive waste compactor, and cooling water, condensate and wastewater sumps in the T Building (PRS 213-233); and wastewater, condensate and fire water sumps from Building T (PRS 339-344).

- The interior solvent drain pipes that formerly carried spent solvent from the solvent sinks and discharged to the Building DS solvent storage shed are still in place. In addition, an area of stained and corroded flooring is present beneath the solvent sink.

- Explosive powder may remain in areas in which explosives were stored or utilized on the explosives side of the site building. In addition, several areas in the building, including the area now leased to Star City, the X-ray photographic dark room, and the previous high tech vacuum lab, have or may have chemicals that are no longer used in these specific areas.

- A sink in the X-ray photographic dark room sits on a raised concrete dais with a metal cover, and piping from the photographic development machine appears to be routed into the dais. It is possible that a sump or subgrade vault exists at this location.

Detailed findings and recommendations are included in Section 7.0.

2.0 INTRODUCTION

2.1 Purpose

The purpose of this Phase I Environmental Site Assessment is to identify, when possible, any recognized environmental conditions (defined below) that may affect the subject property.

2.2 Special Terms and Conditions

2.2.1 Environmental Professional - A person having sufficient training and experience necessary to conduct site reconnaissance, interviews and other activities regarding a subject site according to standard practices. The environmental professional develops conclusions pertaining to recognized environmental conditions.

2.2.2 Environmental Site Assessment (ESA) - The process by which a person or entity seeks to determine if a particular parcel of real property (including improvements) is subject to recognized environmental conditions. An environmental site assessment is both different from, and less rigorous than, an environmental audit.

2.2.3 Key Site Manager - The key site manager is the person identified by the owner of a property as having good knowledge of the uses and physical characteristics of the property. Messrs. Ed Bogan and Don Bornemann of EG&G M&O Staff were designated as the key site managers for this project.

2.2.4 Recognized Environmental Condition (REC) - The presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicates an existing release, a likely release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property. The term is not intended to include de minimis conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

2.2.5 User - For the purposes of this report the user is designated as United States Department of Energy, Miamisburg Area Office.

2.2.6 List of Acronyms - A list of acronyms utilized in this report is presented immediately following the Table of Contents.

2.2.7 Special Conditions

The site area for this Phase I assessment consists of the DOE Mound Building DS footprint and surrounding concrete sidewalks, gravel demolition areas, and grassy hillside. The site does not include the three adjacent T Building entrance shafts.

Unless stated otherwise in the text, all directions in this report are referenced to Mound Plant North, which is 25° 30' 48.53" west of True North. All of the buildings on the Main Hill are aligned with Plant North.

At the request of the client, the Table of Contents for the Building DS Phase I report exactly duplicates the Recommended Table of Contents from the ASTM Standard. Text discussions for certain ASTM sections have been merged to reduce redundancy, and the appropriate sections are referenced.

2.3 Limitations and Exceptions of Assessment

The Building DS site area, as stated above, is completely covered by the building footprint and surrounding concrete pavement or gravel cover. Therefore, soil conditions beneath these areas could not be observed.

Access to the roof of the building was limited, and therefore an inspection of the roof area was not performed.

Finally, several areas in the building were either locked or had limited access. On the metrology (east) side of the building, these included the following areas:

On Room 133 was a private office for the building manager. This office was locked at the time of the inspection.

Room 108 is a mass measurements lab that specializes in high precision standards and testing. This room is kept at a constant 25°C for testing purposes. Due to ongoing precision testing and special clothing requirements, we were requested not to enter this area.

Rooms 129, 130, 130A, 131, 131A, 131B and 132 were locked. These rooms had previously been used for high tech vacuum experiments and had been maintained as clean rooms. The rooms were believed to have been decommissioned and no site contact was available to provide access to these areas.

Room 123 contained obsolete tooling, previously used in the weapons program. The room contains over 5000 items that await disposal. However, trace radiation was

detected on some of the items; consequently this area was quarantined until remediation of the radiation could be completed.

All areas were accessible on the explosives (west) side of the building.

2.4 Methodology Used

2.4.1 On-Site Methodology

Environmental Professionals examined this site. This examination consisted of detailed inspection of the site and a border survey of neighboring properties.

2.4.2 Use of Previous Assessments

2.4.2.1 Building DS is one of more than 132 buildings constructed on the original 182-acre tract of the Department of Energy Mound facility adjacent to Miamisburg, Ohio. Construction at the facility began in 1947. An additional 124-acre tract was acquired in 1981 and is still undeveloped. Numerous and overlapping maintenance programs and environmental programs (including investigation, identification, and remediation of chemical releases) have operated at the Mound Plant over the ensuing half century. Extensive documentation of these programs has created a large library of public information concerning the Mound facility, including Building DS. HOK/K accessed these documents through the Mound Plant's CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act, or Superfund) Public Reading Room, the DOE Miamisburg Area Office CERCLA staff's document room, and from Mr. Mike Merker of DOE. A complete bibliography of the CERCLA Public Reading Room documents is available from DOE, Miamisburg Area Office.

Most of the historical Mound program data collected and reported prior to 1992 was conveniently summarized by EG&G Mound Applied Technologies, M&O contractor, in a twelve-volume Operable Unit 9 (OU 9) Site Scoping Report. To provide the reader with a regulatory framework for the reasons for producing that report, we have included the following excerpt from the Introduction of Volume 12 of the Site Scoping Report:

"The U.S. Department of Energy (DOE) Mound Plant, Miamisburg, Ohio ..., was placed on the ... CERCLA National Priorities List (NPL) on November 21, 1989 (54 Federal Register 48184). The placement of the Mound Plant on the NPL occurred as a consequence of historic disposal practices and releases of contaminants to the environment. The Mound Plant received an overall Hazard Ranking System (HRS) score of 34.61, which exceeded the threshold (28.51) for NPL listing (40 CFR 300, Appendix A). Pursuant to its NPL status, the DOE signed a CERCLA Section 120 Federal Facility Agreement (FFA) with the U.S. Environmental Protection Agency (EPA) that became effective October 11, 1990 (Administrative Docket #VW-'90-C-075). The Ohio EPA (OEPA) became a signatory to the agreement in July 1993. The terms of the FFA require that the DOE develop and implement remedial investigations (RIs) and feasibility studies (FSs) 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, welfare, and the environment.

"The DOE Albuquerque Operations Office (AL) established the Environmental Restoration (ER) Program in 1984 to collect and assess environmental data in order to develop a conceptual site model, to assess both the nature and extent of contamination, and to identify potential exposure pathways and potential human and environmental receptors [at DOE facilities]. In order to provide the EPA with sufficient information and data gathered during these previous investigations, a multivolume scoping report, providing background information, [was] prepared. The [OU 9] Site Scoping Report provides descriptions and summaries of the current conditions and characteristics of Mound Plant and consists of the following volumes:

1. Groundwater Data: February 1987 - July 1990 with Addendum
2. Geologic Log and Well Information Report
2. Addendum - Stratigraphic and Lithologic Logs
3. Radiological Site Survey
4. Engineering Map Series
5. Topographic Map Series
6. Photo History
7. Waste Management
8. Environmental Monitoring Data
8. Addendum - Vegetation and Foodstuff
9. Annotated Bibliography
10. Permits and Enforcement Actions
11. Spills and Response Actions
12. Site Summary Report"

2.4.2.2 Operable Unit 9 (OU9) is a designation of the Mound FFA/Environmental Restoration (ER) program for site-wide studies that provide the framework for compliance with the CERCLA RI/FS process. Investigations that are best conducted for the entire Mound Plant and its regional setting are included in OU9.

2.4.2.3 Final versions of the foregoing twelve volumes date between February 1992 and December 1994. A brief synopsis of these twelve volumes is excerpted from Volume 12, Site Summary Report, and is included herein as Exhibit A. Each volume references its own extensive bibliography.

HOK/K relied primarily on Operable Unit 9 Site Scoping Report: Volume 7 - Waste Management (February 1993), to provide a history of operations at Building DS. This information is discussed in Section 4.3.

HOK/K reviewed Operable Unit 9 Site Scoping Report: Volume 12 - Site Summary Report (September 1994), for a description of all Potential Release Sites (PRSs) at the Mound Plant, including Building DS. PRSs are informally defined potential areas of concern in which knowledge of historic or current use indicates that the site may be considered a solid waste management unit (SWMU, as defined by the Resource Conservation and Recovery Act, RCRA) or has been identified as an area with potential releases of concern. The Site Summary Report not only provides a detailed tabulation of the PRSs at the Mound, but also presents a thorough synopsis of the chronology, authority, and application of the numerous interrelated federal and state regulatory programs in effect at the facility. A discussion of these regulatory records pertaining to the Building DS Phase I assessment is presented in Section 4.0.

2.4.2.4 Building and construction information regarding the whole Mound facility and Building DS in particular was culled from Mound Facility Physical Characterization (December, 1993), prepared by EG&G Mound Applied Technologies. Information from this document is incorporated into Sections 3.2 and 3.3 (Site and Vicinity Characteristics and Descriptions of Structures, Roads, and Other Improvements).

2.4.2.5 Tank information for the entire Mound facility, and Building DS specifically, was collected from the Active Underground Storage Tank Plan, EG&G Mound (November, 1994) by Dames & Moore. These data are presented in both the Records Review, Section 4.0, and in Section 5.5.2, Underground Storage Tanks.

2.4.2.6 Section 5.7.2, Geology, of this report summarizes information from two phases of technical memoranda describing methods and results of the OU9 hydrogeologic investigations conducted by EG&G Mound Applied Technologies:

- OU9, Hydrogeologic Investigation: Bedrock Report (January 1994), and
- OU9, Hydrogeologic Investigation: Buried Valley Aquifer Report (March, 1994).

2.4.2.7 Although asbestos-containing materials (ACM) are not an ASTM-scope issue, at the client's request, HOK/K has included a discussion of ACM. Data compiled from asbestos surveys performed by PEI Associates in 1988 and Barge, Waggoner, Summer, and Cannon Inc. in 1993 were provided to HOK/K by Mr. Timothy Eilers of EG&G Mound Applied Technologies. The ACM data pertaining to Building DS are described in Section 6.1.

2.4.2.8 As described above, the whole Mound facility has been identified as an NPL site under investigation by the EPA and OEPA for radioactive and chemical contamination. Radioactive materials are not an ASTM-scope issue: however, HOK/K has reviewed the Volume 12 - Site Summary Report, which catalogues the potential release sites (including radioactive releases) that have been identified at Mound by DOE/EG&G. Any potential radioactive release sites pertaining to the site area/or detailed in the aforementioned document will be discussed in Section 4.1 of this assessment (Standard Environmental Record Sources, Federal and State).

2.4.3 Historical Information

Title and tax records were reviewed for this assessment to determine previous owners of the property. In addition, the large body of previous assessments, described in the foregoing subsection, provided the historical information as required by the ASTM Standard.

2.4.4 Records Review

Environmental Data Resources, Inc. of Southport, Connecticut, a regulatory database search company, was contracted to provide environmental regulatory information concerning the site and surrounding properties, consistent with the requirements of ASTM Standard E 1527-94. This information was reviewed by an Environmental Professional for indications of recognized environmental conditions.

Because the entire vicinity surrounding the Building DS subject area is a Superfund NPL site, most of the detailed environmental regulatory information for Building DS and adjacent properties (the Mound Plant) was obtained from public documents maintained in the EG&G Mound CERCLA Public Reading Room, as described in Section 2.4.2 above.

3.0 SITE DESCRIPTION

3.1 Location and Legal Description

The Building DS site of the U.S. DOE Mound Plant is located in the central part of the Main Hill of the Mound facility, which itself is situated adjacent to the south side of Miamisburg, Ohio in Sections 30 and 36 (Building DS is in Section 36), Township 2 and Range 5 (from the Between the Miamis survey). Figure 1 shows the general location of the site. Figure 2 shows general site characteristics. Details of the metrology side of the building are presented on Figure 3. Figure 4 depicts details of the explosives side of the building.

3.2 Site and Vicinity Characteristics

Building DS is located at the southern edge of the Mound Main Hill. A mix of concrete sidewalks and gravel areas are located to the north of Building DS. Previously, Buildings 69 and 70 were located here; however both buildings were demolished and removed from the site during this year (refer to Photograph 1 in Exhibit B). Three brick structures (Photograph 2) along the north side of Building DS enclose the entrance shafts to Building T, the 172,963-square-foot tritium development/nuclear operations facility located entirely beneath Building DS, in the side of the Mound Main Hill. The three entrance shafts and Building T are not part of the Building DS site and no physical connection exists between the two buildings.

To the east of Building DS is the site of the former Building 93 (Photograph 3), which was also demolished earlier this year. Building 93 previously housed offices used for the Standards program in support of the defense programs. Beyond the former site of Building 93 to the east and southeast is a steep, grassy slope. Located on the southeast corner of Building DS is a chemical storage shed (Photograph 3). Corridor 425, located on the south side of Building DS, connects it to Building COS, which provides production support for weapons components. With the exception of the chemical storage shed located to the southeast of the building, none of these adjacent buildings are included in the Building DS site area.

The southern edge of the Mound Main Hill slopes steeply down from the narrow grass lawn behind Building DS (Photograph 4 and 5). Steam and chiller brine supply pipes are routed along the edge of the hill (Photograph 6). The hillside is covered with brush vegetation.

A raised concrete dock is located at the west end of Building DS. The dock includes a loading area with a recycling dumpster (Photograph 7), a warehouse, and a tool crib. At the southwest corner of the building, adjacent to the dock, is located a small explosives magazine (Magazine 54) (Photograph 8). The magazine has been emptied of all explosives. The brush-covered hillside and steam and chiller pipes curve around to the west side of Building DS (Photograph 9).

Building DS comprises 47,810 square feet of space which is currently used for metrology and explosives production and development in support of defense programs. The building has been used for these purposes since being constructed approximately 30 years ago.

The overall Mound facility is situated on 305 acres of land and comprises more than 132 buildings having a total of nearly 1.4 million square feet of floor space. The original 182-acre site, purchased by the Manhattan Engineering District in 1946, is formed by two topographically high areas (hills) and a lower intermediate valley area. Building DS is located on the northern, or Main Hill, of these two high areas. The more recently-acquired 124-acre tract (1981) is generally undulating toward the southwest and is not currently developed.

The Mound Plant is bordered on the west by a Conrail Railroad line and the north-south trending Miami-Erie Canal. The northwest quadrant of the property slopes steeply (approximately 170 feet of relief) down to the Great Miami River flood plain. The northern boundary of the plant abuts an historic residential neighborhood 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 golf course, the Miamisburg Mound State Memorial park, old agricultural fields, woodlots, and scattered residential properties border the Mound facility on the east. Benner Road forms the southern property line of the Mound Plant, with agricultural fields and farms occupying the lands beyond.

In the immediate vicinity of Building DS, the following adjacent buildings of the Mound facility are located:

Building	Square Footage	Current Use	Direction From BLDG. DS
70	3,366	Quality (Removed 1996)	North
69	1,620	Production/Tritium Surveillance (Removed 1996)	North
COS	64,654	Development/Production	South
93	2,936	Standards (Removed 1996)	East
T	Nuclear Operations Tritium Develop. Laboratories Health Physics	172,963	Below
N/A	N/A	Sloping Grassy Area	West
N/A	N/A	Sloping Grassy Area	South, Southeast
N/A	N/A	Sloping Grassy Area	West, Southwest

3.3 Descriptions of Structures, Roads, and Other Improvements on the Site

Building DS is a one story, concrete block with brick facade, constructed slab-on-grade with built-up roof. The interior walls are finished primarily with painted plaster, or ceramic face tile wainscoting with painted plaster above. The ceilings are constructed of both painted plaster and dropped ceiling tiles. Flooring materials include primarily vinyl or asphalt floor tiles. Some of the floors in the laboratory and storage areas are of finished cement. There is raised flooring in the very eastern side of the building, along both the north and south corridors and adjoining rooms (see Figure 2).

The current building includes an expansion from the original footprint, an eastern addition constructed in approximately 1967. This expansion appears to have doubled the size of the original building. A penthouse was constructed on the roof of the addition to house mechanical equipment.

While operations in most of the areas of metrology and some areas of the explosive side of the building are on-going, one area which was previously a high tech vacuum testing area, is no longer operational. Many of the production areas in the "explosive" side of the building are no longer operational. Currently, these areas are undergoing safe shutdown; including cleaning the areas and divesting the areas of equipment.

A depiction of the major features of Building DS and the placement of major installed appliances and instruments is provided in Figures 3 and 4. Types of equipment installed in Building DS include laboratory testing equipment, fume hoods equipped with solvent disposal sinks, and solvent storage cabinets.

Metrology department provides calibration services for "clients", which include other Mound operations. They use international standards to calibrate and certify the accuracy and traceability of instruments throughout the facility. The Metrology department is in full operation and no part of that specific operation is scheduled for shut down.

The Metrology department consists of a series of laboratories, each designed to measure specific physical parameters. Room 103 is a dimension lab (Photograph 10). The instruments in this laboratory will measure any type of dimension, including length, width, circumference, threading, and contours. Other equipment includes a coordinate measuring machine, a torque testing machine, and a non-contact optical measuring machine. Cabinets found in the laboratory contain standards used for calibration purposes.

Room 107 is a second dimensions testing lab (Photograph 11). These rooms, including rooms 107, 107A, and 107B, are temperature and humidity controlled. Instruments in this area include additional dimension measurement machines.

Room 110, including 110A and 110B, comprise the electrical testing laboratory (Photograph 12). This laboratory can measure such parameters as RF factor, voltage calibrations, etc. A separate room, located in the back of the laboratory, was constructed to service an electrical load of 100,000 kV for specific testing purposes (Photograph 13). However, according to Mr. Bornemann, the safety team was uncomfortable with specific safety factors; consequently the room was never completed or put into service. Equipment in the room includes temperature controlled baths for measurement of standard resistance (Photograph 14).

Rooms 134, 135, 135A and 135B make up the Pressure measurement laboratory. One instrument located in this laboratory can measure hydraulic pressures up to 200,000 psi (Photograph 15). Other instruments are used to calibrate pressure standards, gages and volumes. A large instrument equipped with a water bath is used for volume calibration (Photograph 16). Liquid nitrogen found in the area is

used in cryogenic pumps, which are used in the calibration of accelerometers for the heat source program. There is also a force/tension measurement machine with the capability to measure up to 10,000 foot pounds.

Rooms 109, 109A, 109B and 109C make up the mass measurement laboratory. Here, scales and balances are calibrated and refurbished (Photograph 17). Room 108 is a mass measurement laboratory used for high precision testing. This room is maintained at a constant 25°C for testing purposes.

Room 106 is a general storage room. This room contains a forklift, a chemical storage cabinet, large 300- to 500-pound weights (Photograph 18) and the drinking water and sprinkler mains. Room 114 is a janitor closet which contains industrial cleaning supplies and a floor sink (Photograph 19).

Rooms 119 and 125 are used by the receiving and inspection department (Photograph 20).. Here new equipment is analyzed to confirm that the equipment will meet the manufacturers specifications before becoming incorporated in on-site laboratory and production use. This equipment includes optical comparitors and a coordinate machine. Room 125A contains several temperature chambers (ovens) and some additional dormant equipment. Room 125B contains four fume hoods, two with sinks (Photograph 21). One of the sinks was a solvent disposal sink with a collection tank below the counter. The tank has been removed.

Rooms 120, 121, 122, 124, 126, 126A and 126B are currently leased to Star City. Star City uses these areas for the production of flexible circuitry. Room 120 contains two large presses and a large laminator (Photograph 22). Room 122 includes a hand assembly and inspection and testing area. Equipment in this room includes a fume hood, a bridge head cleaner, and two laminar flow fume hoods (Photograph 23). Rooms 126 and 126B contain a resist laminator (Photograph 24, two large exposing units using UV light to expose images onto the photo resist (Photograph 25), a large optical alignment punch, and a small laser. Etching and development of the circuits is completed in one of three etching machines located in Room 124 (Photograph 26). These machines have a wastewater discharge directly to the sanitary sewer and a direct air emission. According to Mr. Bob Tomasoski, the air discharges are permitted.

Room 118 is utilized by the Metrology department to store computer software. In addition, a flammable cabinet holds chemicals wastes generated by the Metrology laboratories that await disposal. The room also includes two fume hoods, one with a sink (Photograph 27).

Room 123 contains obsolete tooling. Currently this room contains over 5000 items, most of which were part of the previous weapons program. The items were tested prior to disposal and trace radiation was detected on a number of the items.

Therefore, entrance into this area was not permitted.

Room 127 contains the temperature laboratory (Photograph 28). Equipment in this laboratory includes three temperature baths of different chemical mediums (including propylene glycol, 210H Fluid, and Fluornert FC-77) used as a temperature control. Room 127C contains a temperature and humidity calibration system and Room 127B is an office.

Room 127A is separate from the temperature laboratory and includes a sand blaster and dust collector and bulk chemical storage for the Star City circuitry operations (Photograph 29).

Rooms 129, 130, 130A, 131, 131A, 131B and 132 were not accessible as part of the on-site inspection. These areas were indicated as "clean rooms". Spill kits (for substances representative of some of the chemicals used) were located in the central corridor to these rooms (Photograph 30). According to Mr. Bornemann, these rooms were previously testing laboratories for high tech vacuum applications, but are no longer in operation. Through glass windows, equipment and chemicals were observed remaining in many of the rooms (Photograph 31); however, it was not possible to obtain specific information on these.

Outside the southeast corner of Building DS is a metal chemical storage shed (Photograph 3). This shed had a raised floor. At the time of the inspection, the shed was empty (Photograph 32). Additional information is presented regarding the metal shed in Section 4.3.

Several of the rooms on the Metrology side of the building are utilized as office space. These offices include Rooms 111, 112, 113, 115, 108A. In addition, many of the laboratories will have small, private offices or cubicles for technicians of the specific laboratory.

Room 133 is the Metrology Control Center (Photograph 33). This room contains all files and records from the Metrology department. Protocol dictates that each instrument calibration record be maintained in this area until the instrument leaves the Mound, at which time the calibration records are archived for 5 years, then moved to a general storage area. There is also a smaller, private office within this room, which is occupied by the building manager.

The Explosives side of the buildings (western side) was used for weapons production. Most of the operations on this side have ended, and many of the rooms are undergoing safe shutdown procedures, including cleaning of rooms and removal of equipment. Ongoing operations are under the direction of either CRAIDA (for the design laboratories) or CA (for the production laboratories). CA, which stands for cooperative agreement, and CRAIDA are transfer-of-technology programs between the DOE and private industry.

As part of the safe shutdown operation, many of the rooms have been cleaned and are non-operational but still may contain equipment. These rooms include 202, 207, 209, 209A, 212, 212A, 214, 217, 220, 222, 223, 224, 225, 225A, 229, 229A/B/D, 234, 251, 251A/B, and 257. Some of the types of equipment in these rooms would include microscopes, desiccators, ovens, fume hood, presses, explosive barricades, computers, and installed laboratory workstations (counters or work tables, wall cabinets, drawers, shelving).

The Room 208/213 complex was the former X-ray laboratory. Room 213 includes 3 X-ray units which were also labeled as containing helium neon lasers (for alignment purposes) (Photograph 34). Room 208 contains map cabinets and locked files, but is predominantly empty. Room 208B is a dark room formerly used for X-ray developing. A developing machine with two tanks is found here (Photograph 35). The silver recovery unit is found in line with the piping. The room also holds a refrigerator filled with film and empty chemical storage cabinets. Room 208C had an X-ray machine removed and now stands empty.

Room 251A is called the "tray room" (Photograph 36). It contains a large cafeteria style sink and a bath cleaner used for cleaning explosive shipping and packing trays. Room 233 is an oven room for tray drying (Photograph 37). It contains five large industrial-sized ovens. Some shipping materials are currently stored in this area.

Some of the rooms in the "explosives" section of the building remain operational. Room 201 is currently being used to grind part numbers and drawing numbers off of the equipment as part of Safe Shutdown operations (Photograph 38). Rooms 203, 204, 205B, and 248 are used as office space. Room 213A contains office space and some surplus equipment. Room 243 contains offices, a break area and a storage area with a flammable storage cabinet containing small amounts of chemicals including cleaners and degreasers. Rooms 249/250 contains the shipping department. Supplies in this area include packs of recycled parts, crates of parts with the design drawing number removed (Photograph 39).

Some of the operational areas on the explosives side are used by private groups under a CRAIDA or CA (Mound technology transfer efforts). Rooms 221, 221A, 221B, 221C, 221D, 221E and 221F were used for explosives and weapons development. Several of the rooms (221A, 221B, and 221C) have high bay ceilings.

In addition, rooms 221A, 221B, 221C, 221D and 221E were constructed with a blowout wall along the rear. At the time of the inspection, all explosive materials were reported to have been removed from this bank of rooms. Room 221 was empty with the exception of some supplies and a microscope on a work table. Room 221A is equipped with a refrigeration unit and an air booster equipped with an air compressor. Chemicals found in this room include two empty cans of ethyl alcohol, and one empty hazardous waste can. Room 221B was dedicated to enclosed explosives. Contents of this room are limited, and include a microscope, a Mound-made solid copper table for development purposes, and empty wall shelving. Room 221C contains a large press, a welder, a lathe, a microscope, and a hemispherical instrument labeled explosive. Room 221D contains a Dorst press used for bulk explosive pellet production (Photograph 40). This press had a slight oil leak (Photograph 41). There were also two additional presses which had drip pans with absorbent material and oil staining (Photograph 42). The room also contains two desiccators and two balances. In Room 221E explosives were encapsulated. Much equipment remains in this room, and a CRAIDA operation continues to work in this area (Photograph 43 and 44). Room 221 F was clean and empty, with the exception of a work table and contour gauge.

Room 218 contains a large laboratory used under a CRAIDA agreement; the operation is preparing to move from this area in the near future. The room contains a large environmental chamber, with heating and freezing capabilities (Photograph 45). An explosive chamber, used for destructive testing, is also here (Photograph 46). In addition, the room has work tables (Photograph 47) and tool boxes.

Room 227 was used for development, and is currently used under a CRAIDA agreement. The room contains two large computerized explosives barricades (similar to explosive chambers) with meter instruments. Room 227A was also used for development. This room now contains computer terminals and other office type equipment. In addition, a press, possibly for punching holes in metal, was in this room. Room 227B was again used for development. This room contains bulk explosives, bottles of mineral oil, and pyrotechnic equipment which is static sensitive (Photograph 48). The room is equipped with a non-static grounded floor. In addition, the room holds a pyrotechnic oven and several desiccators and balances.

Room 241 is used for detonation diagnostics. The room contained instruments, computers and two lasers (Photograph 49). In addition, four cylinders of mixed nitrogen and neon gas were stored here.

Room 215 and 206 are used for laser welding. Laser welding is used to encapsulate the explosives. Equipment in Room 215 includes microscopes, wire welders, etc. (Photograph 50). Chemicals include squirt bottles of acetone and alcohol (Photograph 51). Room 206 is also a laser welding room used to provide a hermetical seal on an explosive-filled part (Photographs 52 and 53).

Room 231 is a laser welding development lab used for finding laser ignited detonators (Photograph 54). Bulk explosives are used in this area. The room contains spectroscopy type equipment including the laser welders (Photograph 55).

Room 245 is the ion separator laboratory, containing a 30-foot long Varian ion separator (Photograph 56), three robotic units, and a smaller ion separator (Photograph 57).

Room 254 is a janitors closet. This room contains a floor sink with a floor drain (Photograph 58).

The West Dock Warehouse contains wooden crates of steel plates, metal parts and dies, and two empty pyrotechnic waste materials cans (Photographs 59 and 60). The west dock platform houses some chemical storage, including four large cylinders of nitrogen (Photograph 61), two cylinders of helium, three cylinders of argon and four to five empty cylinders (Photograph 62). Several jugs of vacuum pump oil were noted in a tool cage located on the west dock adjacent to the warehouse (Photograph 63). In addition, a drum labeled "Hazardous Waste Used Vacuum Pump Oil" was staged here (Photograph 64).

Most of the buildings at Mound, including Building DS, are heated by steam. There are two steam boilers located in the Powerhouse (Building P). The boilers generate saturated steam at 125 psig, which is distributed through above-ground pipes on elevated stanchions to the various buildings and the pressure is reduced to 30 psig for use in the buildings. The condensate is collected in the buildings in vented condensate receivers and is returned to the powerhouse for feed water to the boilers.

Many of Mound's buildings, including Building DS, are air conditioned by central chiller systems that chill and circulate an aqueous solution of 30 percent, by volume, ethylene glycol to the buildings through pipes elevated on above-ground stanchions. There are two central chiller systems: One is in the Powerhouse and one is in Building 95.

At Building DS, the above-ground steam and chiller pipes on stanchions are routed past the east end of the building and enter on the south side of the building (Photograph 65).

Potable water and sanitary services at Building DS are provided by the facility. The Mound Plant operates a potable water treatment plant (Building 24) that provides drinking water for the facility using groundwater produced from three on-site production wells (with a fourth well planned FY 1995-1996). The Mound facility also operates an on-site sanitary sewer treatment plant (Building 57) to manage the plant's sanitary wastewater pursuant to a National Pollutant Discharge Elimination System (NPDES) permit issued by OEPA.

3.4 Information Reported by User Regarding Environmental Liens or Specialized Knowledge or Experience

Mr. Mike Merker of DOE Miamisburg Area office was interviewed regarding site environmental liens. Mr. Merker indicated that there were no environmental liens or deed restrictions encumbering the property. Mr. Ed Bogan and Mr. Don Bornemann of EG&G Mound Applied Technologies was interviewed during the site visit regarding the site history, current activities and waste disposal practices. Their knowledge, and that of Mr. Merker, of recognized environmental conditions related to the current or previous use of this property is referenced and documented in the appropriate sections of this report.

3.5 Current Uses of the Property

See Section 3.2.

3.6 Past Uses of the Property

See Section 3.2 and Section 4.3.

3.7 Current and Past Uses of Adjoining Properties

See Section 3.2 and Section 4.3.

3.8 Site Rendering, Map, or Site Plan

See Figures 2, 3, and 4.

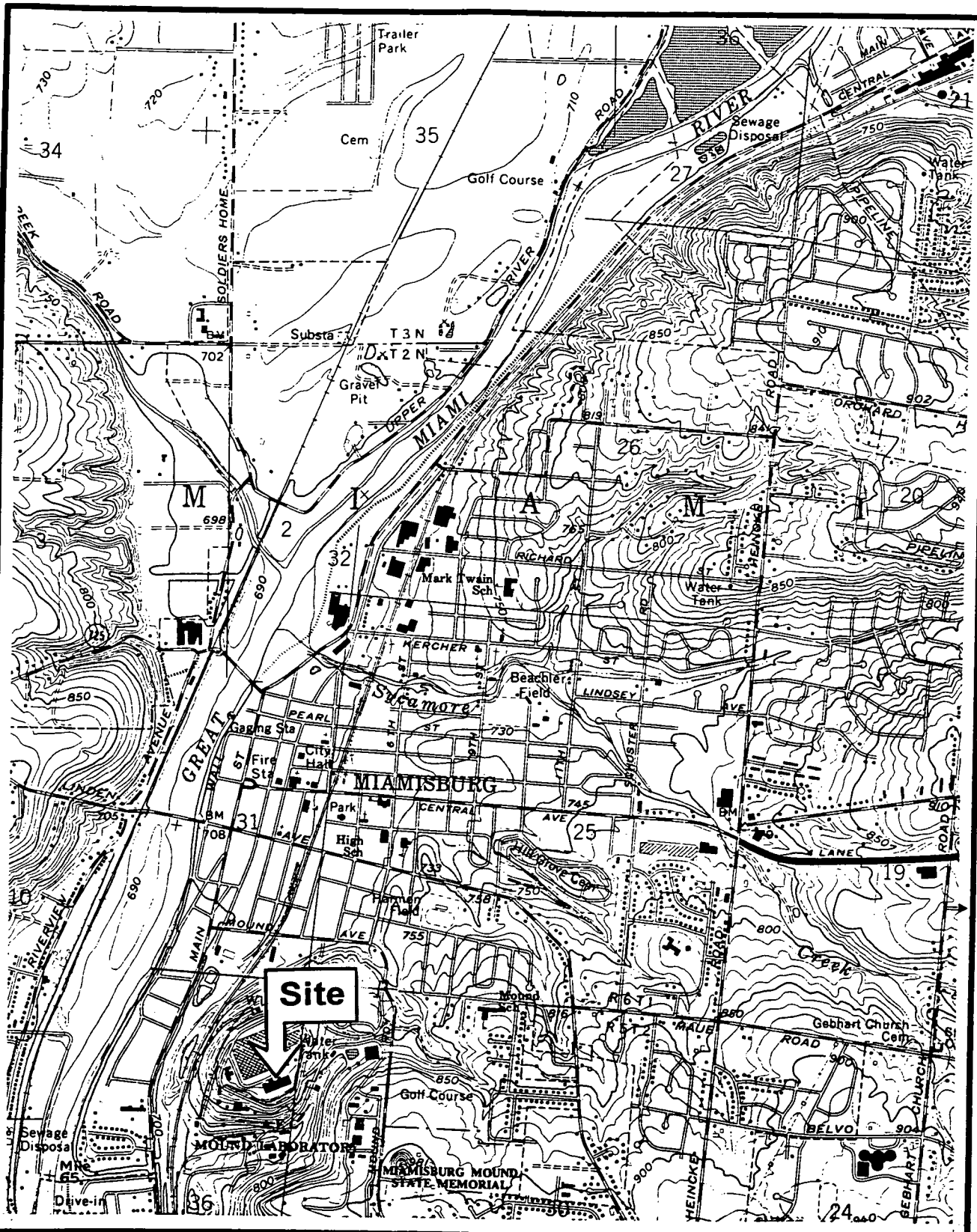

Figure 1
Building DS
U.S. Department of Energy

HOK/K Industrial

Project: H95234C
Drawn By: SRP
Date: 8/26/96

4.0 RECORDS REVIEW

4.1 Standard Environmental Record Sources, Federal and State

Environmental Data Resources, Inc. provided information regarding sites in the vicinity of the subject site which appear in regulatory agency summaries and databases. Sites under the jurisdiction of the following regulatory offices or programs were included in the EDR search report (provided in Exhibit C):

- Contaminated sites on the National Priorities List (NPL) which have been designated by the United States Environmental Protection Agency (EPA) as eligible for Superfund cleanup assistance;
- Sites which have been investigated or are scheduled for investigation, under authority of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA);
- Sites under investigation by the Ohio Environmental Protection Agency (OEPA) for possible hazardous waste are included in the OEPA Master Sites List. In the EDR report this list is referred to as State Hazardous Waste Sites (SHWS) records;
- Hazardous waste generator notifiers (LQG, SQG, and CEG) regulated under the Resource Conservation and Recovery Act (RCRA);
- RCRA hazardous waste treatment, storage, and disposal facilities (TSD);
- State licensed landfills;
- Leaking underground storage tanks (LUST) recorded with the Ohio Division of State Fire Marshal's Bureau of Underground Storage Tank Regulation (BUSTR);
- Underground storage tanks (UST) registered with BUSTR;
- Generators, transporters, commercial storers and/or brokers and disposers of polychlorinated biphenyls (PCBs) registered with EPA and recorded in the PCB Activity Database (PADS);
- Facilities that release toxic chemicals to the air, water, and land in reportable quantities under the Superfund Amendments and Reauthorization Act (SARA) Title III, Section 313, and which are identified in the Toxic Chemical Release Inventory System (TRIS);

- the United States Environmental Protection Agency Emergency Response Notification System's (ERNS) database of accidental releases of oil and hazardous substances.

- and "FINDS", a listing by the EPA of any site that has been reported to the agency as part of any regulatory requirement (e.g., permitting, hazardous waste generation) and does not necessarily indicate an environmental release.

There are fifteen sites within the appropriate radii (ASTM Standard Practice for Environmental Site Assessments: Phase I Environmental Sites Assessment Process Designation E1527-94), designated below as well as in the EDR Report which appears in Exhibit C.

PROPERTY NAME	ADDRESS AND PROXIMITY	STATUS
U.S. DOE Mound Plant	Mound Road Miamisburg, OH (target property)	NPL, PADS, CERCLIS, LUST, TRIS
D.J. Ceramics	611 S. Main St. Miamisburg, OH (W NW)	LUST
CG&R	901 S. Main St. Miamisburg, OH (W)	LUST
GMC Delco Products Div.	329 E. First St. Dayton (Miamisburg), OH (N NW)	RCRIS-SQG, FINDS
Dayton Public Schools	348 W. First St. Dayton (Miamisburg), OH (N NW)	RCRIS-SQG, FINDS
City of Miamisburg Pump Station	1021 S. Main St. Miamisburg, OH (W SW)	UST
Richard Church, Sr. Estate	1009 S. Main St. Miamisburg, OH	LUST

PROPERTY NAME	ADDRESS AND PROXIMITY	STATUS
Presto Adhesive Paper Co., Inc.	222 Mound Ave. Miamisburg, OH (N)	RCRIS-LQG, FINDS
Jack's Mobile	51 Center Street Germantown, OH (NNW)	LUST
Technicote, Inc.	222 Mound Ave. Miamisburg, OH (N)	RCRIS-SQG, UST, LUST
Plocher Andrew Sons	418 E. First St. Dayton (Miamisburg), OH (N NW)	RCRIS-SQG, FINDS
Shell Oil Co.	1224 S. Main St. Dayton (Miamisburg), OH (SW)	UST
Point Store	155 S. Main St. Miamisburg, OH (N)	LUST
Miamisburg Water Treatment Plant	302 S. Riverview Miamisburg, OH (NW)	LUST
Miamisburg Well Field/ Unknown Source	302 S. Riverview Ave. Miamisburg, OH (NW)	SHWS (organics contamination of groundwater)

4.1.1 Except for the Mound Plant itself, on which rests the subject property, all of the remaining identified sites listed above are located north or west of the site. These directions place these other sites as much as 170 feet lower in elevation than the Mound Main Hill, thus they are down gradient (or downslope in terms of surface water, and probably groundwater, flow). In this position these other sites are very unlikely to adversely effect the soil or groundwater conditions at the subject site.

4.1.2 The Mound site, however, has been identified as a contaminated site on the National Priority List under CERCLA (Superfund) since 1989, as described above in the Previous Assessments section (2.4.2). The Mound site was

originally listed as a consequence of historic disposal practices including use of a commercial/industrial landfill, various spills, and the use of underground storage tanks, resulting in the contamination of soils and drinking water. The original contaminants of concern were calcium cyanide, copper cyanide, plutonium and its compounds, specifically plutonium-238, and uranium and its compounds. Following its listing as an NPL site, DOE signed a CERCLA Section 120 Federal Facilities Agreement (FFA) with EPA, effective October 11, 1990. OEPA entered into the agreement in July 1993. The FAA, and its implementation through the DOE Environmental Restoration Program, requires DOE to perform RI/FSs and conduct interim remedial actions to ameliorate the environmental impact associated with past and present activities in order to protect the public health, welfare, and the environment.

As a result of the investigations and documentation conducted to comply with the CERCLA cleanup process via the FFA/DOE ER program, DOE and its M&O contractor (EG&G Mound Applied Technologies) tabulated all the potential release sites identified under the various regulatory programs in effect at the site. Many additional contaminants of concern and types of operations were identified beyond the original NPL listing of site activities. A total of 345 PRSs have been identified and are described in the OU9 Site Scoping Report: Volume 12 - Site Summary Report, Appendix A. This table has been reproduced in Exhibit C of this report. Of these 345 PRSs, one was attributed to operations at Building DS (refer to Figure 2 for locations):

- PRS 128 - DS Building Solvent Storage Shed: This storage shed is located at the southeast corner of Building DS (Photograph 3). During the on-site inspection, this building was empty; however, the Site Summary Report has the storage shed listed as in service. According to the report, chemicals stored in the shed included organic solvents (including 1,1,1-trichloroethane, trichlorofluoromethane, ethanol, and trichloroethane). The Site Summary Report also recorded a suspected release from this storage area. The area is managed by the Mound Plant operations and maintenance program.

Twenty-eight other PRSs are located immediately adjacent to Building DS, but are not attributable to operations at Building DS. Most of these PRSs are attributable to operations in Building T, which is located underground at the same location as Building DS. These additional PRSs are described below:

- PRS 122 - Underground Radioactive Waste Lines (Main Hill): These lines are shown running underneath both the north and south sides of Building DS on the Site Summary Report location map. The waste lines appear to

originate further to the west of Building DS and are not related to any activities in Building DS. The Site Summary Report lists these waste lines as inactive. According to the report, the lines carried alpha wastes from the SW building, R building and H building and waste water from B Building. The alpha wastes included plutonium-238 and cobalt-60. A release is suspected from these lines; however no further data was available.

- PRS 213-233 - These potential release sites include areas from Building T, including T Building solidification unit, T Building solid radioactive waste compactor, and cooling water, condensate and wastewater sumps in the T Building. With some exception, all sites remain in service. The PRS 213, T Building solidification unit, status is historical and contained cobalt-60 and polonium-210. In addition, PRS 225, a Room T-23 Beta Wastewater Sump, is listed as historical and as having contained beta wastewaters. PRS 226-PRS 233, all wastewater sumps, are all listed as historical and filled with concrete. These PRS contained nonradiological wastewater and alpha wastewater. There are no known releases from PRS 213-233 and no other data is available.

- PRS 339-344 - These PRS include wastewater, condensate and fire water sumps from Building T. PRS 339-340 are wastewater sumps from Tanks 250 and 251, respectively, and are listed has historical and filled with concrete. These sumps accepted wastewater and there is no suspected release. PRS 341 is a condensate sump, listed in service with no suspected releases. PRS 342-344 are fire water sumps that accept wastewater/radioactive wastewater. All three sumps are listed as in service and there was no suspected release from these sumps.

Many of the T Building tanks and sump PRS are also catalogued in the Active Underground Storage Tank Plan (referenced in Section 2.4.2.5). Refer to Exhibit D, the PRS table, for tank numbers and to Exhibit E for the corresponding tank information.

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, sulfuric acid and nitrogen are stored at Building DS 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.

4.2 Physical Setting Source(s)

See Figure 1 and Section 5.8.

4.3 Historical Use Information

A history of the site was developed to identify past uses that may have an environmental impact. HOK/K performed a review of title records at the Montgomery County Recorder's Office in Dayton, Ohio, to obtain a history of ownership. HOK/K also relied on previously published Mound documents, principally the OU 9 Site Scoping Report: Volume 7 - Waste Management (February 1993), to provide this history of ownership and operations.

A history of ownership for Building DS must obviously reflect the ownership history of the Mound Plant. Title records indicate that the government of the United States of America acquired the three parcels representing the original 182-acre tract from individual owners between April and September, 1947. The United States government purchased the four lots representing the 124-acre tract between July and August, 1981. These properties had been owned by one individual and one investment company.

History of ownership and operation for the Mound facility is further detailed in the following information excerpted from Volume 7 - Waste Management:

"In the summer of 1942, the United States Army organized the Manhattan Engineer District for the purpose of developing an atomic bomb. This undertaking became known as the Manhattan Project. In 1943, the Director of Monsanto Chemical Company's (MCC's, now Monsanto Corporation's) Central Research Department in Dayton, Ohio accepted responsibility for the chemistry and metallurgy of radioactive polonium-210, and the Dayton Project was launched." MCC operated five units of the Dayton Project at various locations around the Dayton area. For Dayton Unit V (more formally the Dayton Engineer Works under the Dayton Engineer District), a 182-acre site on the outskirts of the town of Miamisburg in Montgomery County, Ohio, was selected in 1946 as the location of the permanent research facility in support of the Manhattan Project. "In July of 1946, Monsanto Research Corporation (MRC), a subsidiary of MCC, engaged the firm of Giffels and Vallet of Detroit, Michigan, to design the plant ... Construction of the new facility, consisting of 14 original buildings, began in February 1947 by Maxon Construction Co., Dayton, Ohio. The plant was the first permanent facility of the [Atomic Energy Commission] AEC, which had succeeded the wartime Manhattan Engineer District. The Mound Laboratory was occupied by MRC personnel in May 1948, and operations involving radionuclides began in January 1949.

"Mound is a government-owned and contractor-operated facility, originally administered under the Oak Ridge Operations Office of the AEC. The plant was assigned new production and development functions in 1955 when the administrative control was assumed by the AEC's Santa Fe operations office. The Santa Fe Operations Office was changed to the Albuquerque Operations Office in April 1956. In January 1975, the plant formally came under the Energy Research and Development Administration (ERDA) upon dissolution of the AEC. In October 1977, the plant was incorporated into the DOE complex and the facility designation changed from Mound Laboratory to Mound Plant. MRC was the sole operating contractor until October 1988, when EG&G-Mound Applied Technologies took over."

As described previously, Building DS was constructed in 1966 for the purpose of explosives production and development and metrology in support of defense programs. The metrology department has always occupied the eastern half of the building, and explosives development and production has occupied the western half of Building DS.

The Volume 7 - Waste Management document describes the Mound's detonator and explosives programs in some detail, concentrating on chemical usage and waste generation. This section (Section 2.16) is excerpted from Volume 7 - Waste

Management and included as Exhibit F in this report. Two processes described therein, in particular, apply to Building DS operations.

The first of these two explosives processes is pyrotechnic and tape development (see Section 2.16.1.4. in Exhibit F). This work is conducted in Rooms 124 and 126 of Building DS. The process, now described as flexible circuit production, has changed little from the process for tape production described in Volume 7 - Waste Management. The operation of this process, however, has now been assumed by Star City, a private enterprise that has spun off from EG&G and which has assumed several other former Mound defense program operations.

The other DS process described in Volume 7 - Waste Management is explosive processing (see Section 2.16.1.6 in Exhibit F). The description provided applies to operations in several Mound buildings other than Building DS. Most of the explosives processing work in Building DS took place in the development laboratories.

Overall explosives waste generation information is also described in Section 2.16.2 of the Volume 7 - Waste Management document (see Exhibit F).

Additional chemical waste management information in Volume 7 - Waste Management describes the Building DS solvent storage shed (see Exhibit F). The shed is still present at the southeast corner of Building DS. The solvent transfer pipelines (described in the excerpt in Exhibit F) are also still in place and originate at a solvent disposal sink in Room 125B, are suspended along the southern wall of Building DS (Photograph 66), and extend to the solvent storage shed at the southeast corner of the site building. According to Mr. Bornemann, the solvent transfer lines have been drained of solvent. This information was corroborated when Mr. Borneman opened one of the pipelines during our site visit and found it to be empty. The solvent storage shed is also now empty.

4.4 Additional Record Sources

4.4.1 Interviews

Interviews with Mr. Ed Bogan and Mr. Don Borneman produced the following information regarding past practices and operations at Building DS:

Solvent Transfer Pipelines from Room 125. Mr. Bornemann indicated that the solvent disposal sink in this room was formerly equipped with a solvent collection tank underneath the sink. The tank has been removed. Solvent delivery lines and solvent waste transfer lines are piped into this room.

Room 123. Mr. Bornemann described the contents of this locked room (reported in Section 3.3) which was not accessible during our site visit. He also stated that one radiation had been detected on one part; thus the room has been quarantined until a Mound Health Physics radiation survey has been completed.

High Tech Vacuum Area. Mr. Bornemann had no knowledge of the actual operations performed in this area, but was able to state that these rooms (described in more detail in Section 3.3) have always operated as clean rooms since their constructions.

Explosives Area. Mr. Bogan indicated that bulk explosives had been utilized in the following rooms while explosives production or development was in operation: 221C/D, 218, 225A, 227B, 235, and 231.

Encapsulated or contained explosives were or are being used in the following rooms: 205, 207, 209, 214, 222, 217, 223, 220, 221, 221A/B/E/F, 225, 224, 226, 227, 234, 206, 215, 249, 250, and 251A.

4.4.2 Aerial Photographs

Aerial photographs from 1938, 1949, 1962, 1968, 1975, 1980, 1987, and 1995 were reviewed and copies are found in Exhibit G.

The 1938 photograph shows the Mound acreage as agricultural fields and undeveloped wood lots. The historic Miamisburg Indian Mound is visible for location reference.

The 1949 aerial shows the completed initial phase of construction on the Mound Main Hill. Approximately fourteen buildings are visible; however Building DS has not yet been constructed. The towers associated with Building T (located underground, beneath Building DS) are visible in this aerial photograph. Roadways on both the Main Hill and the eastern hill are present.

The 1962 and 1968 photographs show expanding activities at the Mound. While Building DS is not visible in the 1962 aerial photograph, both the original building footprint and the western addition are visible in the 1968 aerial photograph.

The overall Mound facility, as depicted in the 1975, 1980, 1987, and 1995 photographs, shows continuing change and expansion. Since this report focuses on Building DS, we will not include a detailed description of these changes on the Mound, but will concentrate our discussion in the next

sentences on Building DS alone. The aerial photographs for 1975, 1980, 1987 and 1995 show Building DS much as it appears in the 1968 aerial photograph and much as it is today.

4.4.3 Historic Sanborn Fire Insurance Maps

Sanborn Map coverage was not available for the Mound facility. A copy of the Sanborn Map Request Response is included in Exhibit H.

4.4.4 Building Prints

A series of building prints were made available to HOK/K by Mr. Tom Bruggeman of EG&G Mound Applied Technologies. The prints for the DS building include the addition constructed in approximately 1968. Detailed information regarding the original building and the addition was not available from the building prints.

5.0 INFORMATION FROM SITE RECONNAISSANCE AND INTERVIEWS

5.1 Interior Observations

5.1.1 Heating/Cooling

The heating and cooling system for Mound was described in Section 3.3. Where present throughout rooms in Building DS, steam, boiler water and condensate pipes were marked. Most of the HVAC equipment is located in the penthouse on the roof; however, this penthouse was not accessed during the inspection.

As mentioned in Section 3.3, the HVAC steam pipes and chiller water pipes are suspended along the eastern side of Building DS, then wrap around the southeast corner and enter the building through the southern side of Building DS (Photographs 65 and 66).

5.1.2 Stains or Corrosion

In the rear of Room 125 is a cleaning hood with solvent dispensers and a sump for previous cleaning operations. Under the cleaning hood are stains that appear to be from past chemical storage practices (Photograph 67).

Stains were also observed in several of the rooms currently occupied by Star City. Chemical containers left by EG&G left staining under a work table in room 122 (Photograph 68). In addition, staining was observed in a chemical storage area in Room 126A (Photograph 69).

5.1.3 Drains and Sumps

Floor drains were noted in some of the explosive laboratories and assembly areas. To the best of Mr. Bogan's knowledge, these are all routed to the sanitary sewer system at the present time.

Each of the janitor's closets (Rooms 114 and 254 contain a floor sink (i.e. service sink) with a floor drain.

Room 219 has a manhole (person way) with a metal manhole cover (Photograph 70). This may be a sanitary sump pump, according to Mr. Bogan.

One disconnected solvent drain sink is located in Room 125. This sink is fitted into a fume hood, and drains or formerly drained into an approximately 5-gallon stainless steel tank installed in the cabinet beneath

the sink. The tank was formerly equipped with a pump and connected to above-ground solvent pipes that carried spent solvent to the Building DS solvent storage shed. The solvent sink collection tank has been removed from Room 125 (Photograph 67). Mr. Bornemann believed that the associated piping had been emptied by EG&G Safe Shutdown staff. This was confirmed when Mr. Bornemann opened the valves to the piping; no solvent was discharged. The solvent storage shed is empty; however, the above-ground solvent piping, suspended from Room 125 along the outside southeastern wall of the site building, remains in place.

A sink located in the X-ray photographic dark room (Room 208B) is installed in a cabinet sitting on a raised dais with a metal cover, giving the appearance of a subgrade vault (Photograph 71). Mr. Bogan had no knowledge regarding the construction, contents, or condition of this feature. The distribution of the photographic development rinsewater piping in this room was also not clear, but could possibly be routed into the raised dais area. See Section 7.0, Findings and Conclusions.

5.2 Exterior Observations

5.2.1 Pits, Ponds, or Lagoons

No ponds or lagoons were noted on or adjacent to the site.

5.2.2 Stained Soil or Pavement, Stressed Vegetation

No stained soil or pavement or stressed vegetation was evident on the exterior of Building DS during the site visit.

5.2.3 Wells

There was no evidence of wells (such as a road box or pipe stick-up) at Building DS. In addition, our key site manager Mr. Bogan had no knowledge of any wells around Building DS.

5.2.4 Odors

No unusual odors were noted within Building DS.

5.2.5 Hazardous Waste

At the present time, very little hazardous waste is generated in the course of operations in Building DS. The Metrology laboratories use very small quantities of lubricating oils and solvents and alcohols in the routine

maintenance of the machines and cleaning of the machines, standards and samples. As a matter of routine operation, the solvents and alcohols are placed on a rag, used for cleaning purposes, then disposed via the sanitary waste. The small quantities of wastes generated by the Metrology laboratories is staged in a flammable storage cabinet in Room 118 (Photograph 72), where the EG&G Waste Management group will coordinate the proper disposal of these chemicals.

The flexible circuitry operations performed by Star City in Rooms 120-126 does generate hazardous wastes, particularly in the etching and developing operations. Some of these wastes, spent ferric chloride and ElectroBrite, are being collected and stored in drums. To date, the hazardous waste has not been generated in quantities that require disposal. According to the Star City contact, Mr. Bob Tomasaski, Star City will be responsible for the proper disposal of these wastes. Other wastes, principally sodium carbonate, are discharged with the rinsewaters to the sanitary drain. Mr. Tomasaski stated that Mound Industrial Hygiene staff had determined that these rinsewaters were not hazardous.

The hazardous waste generated in the Explosives side of the building is similar to the waste from the remainder of the building. It includes very small quantities of spent solvents and cleaners. In addition, a now disused X-ray photographic developer, found in the explosives area, generated hazardous wastes which were passed through a silver recovery unit and then were reportedly discharged to the sanitary sewer system, according to Mr. Bogan. Our key site manager also believed that Mound Waste Management had removed any accumulated silver from the recovery unit.

5.2.6 Waste Water

Industrial process waste water discharges are described above in Section 5.2.5.

Engineered storm water flow is directed in a southwestern direction away from Building DS. Stormwater is collected in two locations on the north side of the building. These drains appear to run underneath the building and discharge on the southwest side of the building. Additional storm water is collected on the southeast corner of the building and directed in a southeast direction. Additional sheet flow runs downhill on the south, east and west sides of the building. All storm water is ultimately discharged into the main drainage ditch along the base of the Main Hill (Per Volume 4).

Sanitary wastewater is directed in drainlines that run along the north and south sides of Building DS. These lines converge with several other lines

to the west of the building. From that point, sanitary flow is directed southwestwardly to the wastewater treatment plant.

In Section 4.1.2. underground radioactive waste lines (Main Hill) (PRS 122) is described as running underneath both the north and south sides of Building DS on the Site Summary Report location map. The waste lines appear to originate further to the west of Building DS and are not related to any activities in Building DS. The Site Summary Report lists these waste lines as inactive. According to the report, the lines carried alpha wastes from the SW building, R building and H building and waste water from B Building. The alpha wastes included plutonium-238 and cobalt-60. A release is suspected from these lines; however no further data was available.

5.2.7 Septic Systems

There was no evidence of septic systems (such as leaching field or septic tank vent pipes) in the vicinity of Building DS. According to Mound documentation, there are no septic systems on the Mound Plant because it is serviced by a sanitary sewage treatment plant.

5.3 Hazardous Substances in Connection with Identified Uses

There are some hazardous substances stored within or around Building DS. The chemicals are associated with laboratory operations, production operations in the flexible circuitry production area, and in the janitorial closets.

Most of the laboratories contained small flammable storage cabinets used to keep small quantities of chemicals needed for laboratory operations (Photographs 73, 74, 75). These chemicals include solvents, alcohol, oils and lubricants, and mercury. Some of these chemicals were located in small squirt bottles (or other similar amounts) for use at various testing machines or laboratory stations (Photograph 76).

Hazardous substances are used in the production of flexible circuitry by Star City. Chemicals include alcohol, acetone, electrobright, sodium carbonate, ferric chloride and nickel sulfamate. Bulk quantities (55-gallon drums and 5-gallon containers) are stored in Room 126A (Photograph 69). Additional quantities (stored in 55-gallon drums and smaller drums) of these chemicals are stored in Room 127A (Photograph 29), and gallon-size containers are stored in the cabinet beneath the fume hood in Room 124 (Photograph 77). There were also some chemicals stored in the fume hood in the Star City flexible circuitry production area (Room 122) that are not used as part of the process (Photograph 78). According to Mr. Tomasoski, these chemicals were left by EG&G operations.

Hazardous substances from the explosives side of the building include the same type of solvents and cleaners as outlined above. In addition, an x-ray photographic developer is located on this side of the building (Room 208B) and may still contain hazardous photochemicals in the two photochemical tanks. Mr. Bogan believed that they had been emptied by Mound Waste Management staff.

5.4 Hazardous Substance Containers and Unidentified Substance Containers

There were no unidentified substance containers noticed during the Building DS site walkovers. There were containers of materials inside Rooms 129-132 (previously the vacuum laboratory). Because access to these rooms was not obtained, no comment can be made on the contents or labeling of these containers.

Refer to 5.3 for discussion of hazardous substance containers.

5.5 Storage Tanks

5.5.1 Above-Ground Storage Tanks

No above-ground storage tanks were observed on the Building DS site during the site inspection. However, several gas storage cylinders remain in a cylinder storage area on the exterior of the east side of the building and on the west dock.

5.5.2 Underground Storage Tanks (USTs)

No evidence of USTs (such as vent or fill pipes) was observed inside or outside of Building DS. The key site manager had no knowledge of any USTs ever having existed at Building DS. There are, however, a number of underground storage tanks associated with Building T. These USTs, listed in the Active Underground Storage Tank Plan (referenced in Section 2.4.2.5, are also included in the PRSs as described in Section 4.1.3. A copy of the tank listing from the Active Underground Storage Tank Plan is included in Exhibit E.

The USTs associated with Building T consists of various sumps used for cooling water, sanitary waste, fire water, and alpha wastewater. Some of the tanks have been made inactive and may be included in the D&D program. Other sumps remain active. Refer to Exhibit E.

5.6 Indications of Polychlorinated Biphenyls (PCB's)

Under the Toxic Substances Control Act (TSCA), the EPA regulates the manufacture, distribution and use of PCBs. PCBs are a known carcinogen and are persistent in the environment. They were formerly widely used in the dielectric fluid of electrical transformers and capacitors, and in the oil of hydraulic systems. PCBs are also present in the ballasts of fluorescent lamps.

At Building DS, no fluid-filled type transformers were observed. One dry-type transformers was observed in Room 215. This type of transformer does not typically contain PCBs.

Fluorescent lighting is used throughout Building DS. Fluorescent lamp ballasts contain a small capacitor that may contain high concentrations of PCBs (greater than 900,000 ppm). All lamp ballasts showing a manufacture date through 1979 should be regarded as containing PCBs. If a ballast is not labeled "No PCBs," it should be considered to contain PCBs regardless of the date of manufacture.

Used lamp ballasts that are leaking PCB material are fully regulated under CERCLA and TSCA and must be incinerated at a TSCA approved incinerator. Used, non-leaking PCB-containing lamp ballasts are eligible for disposal as municipal solid waste, although EPA encourages proper disposal of PCB materials in a chemical waste landfill or a high temperature incinerator, which completely destroys the PCB material. However, incineration is costly and landfill disposal carries the potential for future cleanup liability. Lamp ballasts can be successfully recycled, and facilities disposing of waste fluorescent lamp ballasts should consider this disposal alternative.

5.7 Indications of Solid Waste Disposal

Solid waste was not observed in the site building, other than trash cans in the office and laboratory areas. A solid waste recycling dumpster of standard industrial size was noted at the west end of the building. It was indicated that this recycling dumpster was owned and serviced by Laidlaw.

5.8 Physical Setting Analysis

5.8.1 Surface Topography

A map of the area is included in Figure 1. This map is based on the U.S.G.S. 1965 (photo revised 1974) 7.5 Minute Topographic Map of the Miamisburg, Ohio Quadrangle. The facility elevation ranges between 720 and 900 feet msl. Based on an evaluation of the surface topography, surface water flows in all directions away from the Mound Main Hill. In

the vicinity of Building DS, surface water is assumed to flow down the steep grade to the south of the building, and from there southwest toward the Great Miami River.

5.8.2 Geology

An extensive site-wide (OU 9) hydrogeologic investigation has been completed by EG&G for the Mound Plant. The five technical memoranda written as part of the hydrogeologic investigation were cited in Section 2.5.2. Only a brief summary of geologic highlights for the Mound vicinity are described below.

The bedrock at the Mound Plant is comprised of marine shales and limestones of the Ordovician System within the Cincinnatian Series.

The nature and distribution of natural fractures studied during the referenced investigation indicate that a fracture carapace (zone at the surface) is superimposed on the bedrock beneath Mound Plant. This fracture carapace is believed to consist of a network of interconnected vertical and bedding plane fractures that are water-saturated in the lower parts and unsaturated in the upper parts.

The aquifer system at the Mound Plant consists of two different hydrogeologic environments: groundwater flow through the bedrock beneath the hills and groundwater flow within the unconsolidated glacial deposits and alluvium associated with the Buried Valley Aquifer in the Great Miami River valley. The bedrock flow system is dominated by fracture flow; the Buried Valley Aquifer is dominated by porous flow with interbedded gravel deposits providing the major pathway for water movement. The Buried Valley Aquifer occupies the southwestern quadrant of the Mound site.

Based on the available data, the fracture carapace and underlying, relatively unfractured bedrock have different hydraulic characteristics. The fracture carapace has permeability values ranging from 0.09 to 0.9 ft/dy and the underlying bedrock has permeabilities that range from 1.3×10^{-3} to 2.9×10^{-2} ft/dy. The permeability of the fracture carapace and bedrock that underlie the Mound Plant is at least three orders of magnitude less than the Buried Valley Aquifer, which has an average permeability of 500 to 1,500 ft/dy. Because of this quality, the Buried Valley Aquifer has been designated a sole source aquifer consistent with the Safe Drinking Water Act.

The Mound Plant maintains three drinking water production wells completed in the Buried Valley Aquifer, along the western edge of the facility. Miamisburg Water District production wells are located approximately one-half mile northwest of the Mound facility on the other side of the Great Miami River.

5.9 Other Conditions of Concern

See Section 7.0, Summary of Findings.

5.10 Site Plan

See Figures 2, 3, and 4.

6.0 NON-SCOPE CONCERNS

Certain areas are considered beyond the ASTM standard scope of the Phase I Environmental Site Assessment. These areas are provided for informational purposes below.

6.1 Suspected Asbestos-Containing Material

ACM in buildings can be found in three forms: sprayed or troweled on ceilings and walls (surfacing materials); insulation around pipes, ducts, boilers, and tanks (pipe and boiler insulation); other products such as ceiling and floor tiles and wall boards (miscellaneous materials). ACM is of greatest concern when it is friable. Friable material can be crumbled, pulverized, or reduced to powder by hand pressure.

Asbestos surveys were performed for EG&G by PEI Associates in 1988 and Barge, Waggoner, Sumner, and Cannon Inc. in 1993. ACM was detected in Building DS, and in many places the ACM is so marked within the building. Exhibit I presents summary tables of the ACM detected during the Building DS asbestos surveys.

6.2 Lead Paint

Lead based paint was used almost exclusively in the U.S. prior to the 1970's. Congress established maximum lead concentrations in residential paint in 1978. Due to the age of the building (constructed in approximately 1966) it is possible that lead based paint has been used within the buildings. The risk of a lead based paint hazard exists when the painted surfaces are damaged (cracked, chipped, loosened, chewed). Several areas of chipped and peeling paint were observed, particularly in the southern corridor on the east side of the building and Rooms 219 and 220 on the explosives side of the building (Photograph 70). Analysis of the paint would be necessary to determine if there is lead paint and if a lead hazard exists.

6.3 Radon

The results of radon testing of 35 buildings in the same zip code as this site (45342) are on file with the Regional Air Pollution Control Agency in Dayton, Ohio, and were provided in the EDR report in Exhibit B. The average reading for the basement area of tested buildings was 5.963 picocuries/liter as compared to the EPA recommended standard of 4.0 picocuries/liter.

Radon levels are very site specific, depending heavily on location and the building ages and construction. Radon does not normally pose a threat in commercial or industrial buildings for several reasons. The fresh air which enters the structure and the venting provided can reduce the buildup of radon gas. In addition, human exposure in these facilities is usually limited to eight hours per day. The EPA's recommended standard of 4.0 picocuries/liter is based on the assumption of sixteen hours exposure per day.

A simple screening test can be performed to determine actual on-site radon levels.

6.4 Electromagnetic Fields

There are no high-power electrical transmission lines or transformer substations within the immediate vicinity of the subject property. Electromagnetic radiation originates from the electromagnetic fields (EMFs) which surround electrical conductors, such as electrical transmission lines. Epidemiologic studies have linked an increased risk of childhood leukemia for children living in homes which are near high-power transmission lines. Research in this area is ongoing, and, at present, there are no regulations or guidelines for exposure to electromagnetic radiation. One study found that fields of less than 2 milligauss may be acceptable. This research has been conducted for children exposed at there residences. The estimated electrical field is expected to drop to 2 milligauss at approximately 200 feet from the power line. Development plans for this site should consider the possible effects of EMF.

6.5 Fluorescent Lamps

Fluorescent lamps are used for lighting throughout this facility. Fluorescent lamps contain on average between 35 and 75 milligrams of elemental mercury and trace amounts of other hazardous heavy metals (e.g., cadmium and lead). Mercury is highly toxic to humans and animals, causing both immediate and long-term effects.

According to current federal law, used fluorescent lamps are considered a solid waste. Used fluorescent lamps are not listed as a hazardous waste under Code of Federal Regulations, Volume 40, Part 262.11 (40 CFR 262.11), but under RCRA, used fluorescent lamps are subject to evaluation against the RCRA hazardous waste characteristics, including the toxicity characteristic. The Toxicity Characteristic Leaching Procedure (TCLP) is a test to determine if a waste is characteristically hazardous. The regulatory limit for mercury is 0.2 milligram/liter. If TCLP results from fluorescent lamp samples show that mercury concentrations equal or exceed this limit, the waste must be managed as a hazardous waste. Conversely, if TCLP results are below the 0.2 mg/L mercury limit, the waste is not considered hazardous and can be managed as municipal solid waste.

In Ohio, used fluorescent lamps must be initially characterized to determine if they are hazardous via the TCLP test. If used fluorescent lamps are characteristically hazardous and bound for disposal, lamps must be managed in compliance with all of Ohio's applicable hazardous waste requirements. If, however, the characteristically hazardous used lamps are bound for recycling or reclamation, they are not considered a solid waste and are not subject to Ohio's hazardous waste requirements. Facilities using and disposing of fluorescent lamps should evaluate their disposal program and should consider recycling or reclamation as an alternative to other disposal methods.

7.0 FINDINGS AND CONCLUSIONS

7.1 HOK/K Industrial, Inc. has performed a Phase I Environmental Site Assessment of the DOE Mound, Building DS 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:

- One of the potential release sites (PRS) recognized by DOE/EG&G through the FAA/ER combined program is included in our findings as RECs:

  The DS Building Solvent Storage Shed is included here because the Site Summary Report includes information that a release of organic solvents previously stored in the shed is suspected. Further study, including possible physical testing of the surrounding soils for contamination, would be necessary to determine any environmental impact from the storage shed. The area is managed by the Mound Plant operations and maintenance program.

- Twenty-eight other PRSs are located immediately adjacent to Building DS, but are not attributable to operations at Building DS. Most of these PRSs are attributable to operations in Building T, which is located underground at the same location as Building DS. These additional PRSs are described below:

  Underground Radioactive Waste Lines (Main Hill) (PRS 122) are shown running underneath both the north and south sides of Building DS on the Site Summary Report location map. The waste lines appear to originate further to the west of Building DS and are not related to any activities in Building DS. The Site Summary Report lists these waste lines as inactive. According to the report, the lines carried alpha wastes from the SW building, R building and H building and waste water from B Building. The alpha wastes included plutonium-238 and cobalt-60. A release is suspected from these lines; however no further data was available.

  Potential release sites (PRS 213-233) include areas from Building T, including T Building solidification unit, T Building solid radioactive waste compactor, and cooling water, condensate and wastewater sumps in the T Building. With some exception, all sites remain in service. PRS 213, the T Building solidification unit, status is historical and contained cobalt-60 and polonium-210. In addition, PRS 225, a Room T-23 Beta Wastewater Sump, is listed as historical and having contained Beta wastewater. PRS

226-PRS 233, all wastewater sumps, are all listed as historical and filled with concrete. These PRS contained nonradiological wastewater and alpha wastewater. There are no known releases from PRS.213-233 and no other data is available.

These PRS (PRS 339-344) include wastewater, condensate and fire water sumps from Building T. PRS 339-340 are wastewater sumps from Tanks 250 and 251, respectively, and are listed has historical and filled with concrete. These sumps accepted wastewater and there is no suspected release. PRS 341 is a condensate sump, listed in service with no suspected releases. PRS 342-344 are fire water sumps that accept wastewater/radioactive wastewater. All three sumps are listed as in service and there was no suspected release from these sumps.

While the above mentioned PRS are not directly attributable to Building DS, they should be considered in any future development plan for Building DS. The majority of PRS listed would contain radioactive waste or wastewater and many are suspected of having had a release. A more detailed investigation would be required to accurately determine the environmental impact of these immediately adjacent PRS on Building DS.

- The interior solvent drain pipes that formerly carried spent solvent from the solvent sinks and discharged to the Building DS solvent storage shed are still in place. The entire plumbing network and location of the lines should be determined, and if necessary the pipes should be drained and removed. In addition, the area of stained floor tile under the solvent sink should be properly cleaned.

- The EG&G Safe Shutdown committee should be meticulous in the cleanup of the areas specified for closure, especially areas in which explosives were stored or utilized on the explosives side. In addition, several areas in the building, including the area now leased to Star City, the X-ray photographic dark room, and the previous high tech vacuum lab, have or may have chemicals that are no longer used in these specific areas. These chemicals should be monitored, and removed and properly disposed if no longer needed.

- A sink in the X-ray photographic dark room sits on a raised concrete dais with a metal cover, and piping from the photographic development machine appears to be routed into the dais. Our key site manager did not know what features were below the metal cover. It is possible that a sump or subgrade vault exists at this location. The construction, condition, and contents of the area below the metal cover should be investigated.

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

- The asbestos-containing materials (ACM) present in Building DS 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.

- Fluorescent light ballasts should be properly disposed.

- Several walls and ceiling areas in Building DS were observed to be covered with flaking and chipping paint. Given the age of the building, there is the potential for this to be lead-based paint, which can represent a serious health risk to Building DS employees. The paint should be tested for lead content and the appropriate removal and cleanup actions should be taken by a licensed lead abatement contractor.

8.0 SIGNATURES OF ENVIRONMENTAL PROFESSIONALS

8.1 The following individuals wrote and/or reviewed this document:

Prepared by:

Ellen E. Stanifer
Project Engineer

Jennifer C. Vicarel
Environmental Scientist

Reviewed by:

John W. Ey, P.E., REPA
Manager, Environmental Assessments

9.0 QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONALS PARTICIPATING IN PHASE I ENVIRONMENTAL SITE ASSESSMENT

Resumes for the following employees are attached as Exhibit J:

- John W. Ey, P.E., REPA
  Manager, Environmental Assessments

- Ellen E. Stanifer
  Project Engineer

- Jennifer C. Vicarel
  Environmental Scientist

EXHIBIT A

DESCRIPTION OF TWELVE VOLUME SITE SCOPING REPORT

(CAA). Mound Plant, however, conducts its routine operations under the Atomic Energy Act of 1954 (AEA). One of the goals of this report is to ensure that all PRSs are properly evaluated for their inclusion or omission from the ER Program.

1.2. OVERVIEW OF MOUND PLANT SCOPING PROCESS

Prior to signing the FFA, the DOE collected and interpreted data to develop a Site conceptual model to assess both the nature and extent of contamination and to identify potential exposure pathways and potential human and environmental receptors. The multivolume scoping report, compiled under the guidance of the FFA Statement of Work, provides descriptions and summaries of current conditions and characteristics of the Mound Plant Site. The volumes are arranged to provide a systematic data set as follows:

- Volume 1 Groundwater Data: February 1987 - July 1990 (Final February 1992). Provides a tabulation of laboratory reports of groundwater sample analyses from ER Program monitoring wells, plant supply wells and groundwater seeps collected from February 1987 to July 1990, before the FFA became effective.

- Volume 2 Geologic Log and Well Information Report (Final May 1992). Provides a location map, and construction and borehole lithology details for monitoring and production wells on and adjacent to Mound Plant that have been used to collect environmental samples. Selected residential and municipal wells are also included where appropriate.

- Volume 2 Addendum Stratigraphic and Lithologic Logs (Final June 1992). Provides stratigraphic and lithologic information including borehole logs and borehole location maps compiled from plant engineering, planning, and foundation studies and contaminant infiltration and movement investigations.

- Volume 3 Radiological Site Survey (Final June 1993). Provides a summary and tabulation of available radiological data collected at Mound Plant with emphasis on the extensive radiological characterization investigation conducted by Mound Plant during the Site Survey Project (Stought et al. 1988).

- Volume 4 Engineering Map Series (Final February 1992). Provides a series of engineering maps of the Site, including plant utilities, potable water and condensate cooling lines, process piping and tanks, municipal utilities adjacent to the plant, surrounding land uses and easements, adjacent property owners, and copies of the boundary survey conducted in 1982. All maps were reproduced at a scale of 1 inch = 200 ft and use the Ohio State Plane coordinate system.

- Volume 5 Topographic Map Series (Final February 1992). Provides a series of topographic maps of the Mound Plant and adjacent areas, including a topographic map with 2-ft contours, a map of surface water features, a digitized topographic map of the northern part of the site before the plant was constructed in 1946, and a contour map with 10-ft contours that estimates the amounts of cut and fill performed from 1946 to 1986, principally along the plant drainage ditch. All maps were reproduced at a scale of 1 inch = 200 ft and use the Ohio State Plane coordinate system.

- Volume 6 Photo History Report (Final February 1992). Provides a series of interpretive maps compiled from historical aerial photos of Mound Plant that span the years 1959 to 1981. Maps of the upper and lower valley areas were compiled for 1959, 1964, 1968, 1973, 1975, 1979, and 1981, as these areas were known to have been used for waste disposal and experienced significant changes in morphology and terrain elevation.

- Volume 7 Waste Management Report (Final February 1993). Provides a description of the history of ownership and operation of the plant with emphasis on the generation, treatment, storage, and disposal of hazardous wastes through the perspective of the major programs and projects at the plant. Also provides a summary list of the hazardous substances generated through process information. This tabulation was used to compile the list of analytical parameters for the Operable Unit 9 RI/FS (DOE 1993a).

- Volume 8 Environmental Monitoring Data: 1976-1989 (Final February 1992). Provides summaries and tabulations of environmental sampling conducted by Mound Plant as part of the ongoing environmental surveillance program, the Potable Water Standards Project (Dames and Moore 1976a,b) and the Plutonium Soil Inventory Program (MRC 1977). Analytical data included tritium, plutonium-238, uranium-233, uranium-234, and uranium-238 in surface water and silt samples collected from the Great Miami River from 1974 to 1989, tritium in groundwater from the Buried Valley aquifer from 1975 to 1990, and plutonium-238 in regional soils measured in 1977.

- Volume 8 Addendum Vegetation and Foodstuff (Draft March 1994). Provides summary of analytical data on tritium and plutonium-238 concentrations in vegetation (grass) and foodstuff (fish, vegetables and milk) for the years 1972 to 1991. Data was collected and reported as part of the Mound Plant environmental monitoring and surveillance program required by DOE.

- Volume 9 Annotated Bibliography (Final February 1993). Provides an annotated list of reports prepared for the Site prior to the signing of the FFA. The bibliography includes reports prepared by government agencies, subcontractors, scientific journal articles, and maps and drawings that may be relevant to the preparation of the RI/FS. Reports published or compiled since the effective date of the FFA are beyond the scope of Volume 9.

- Volume 10 Permits and Enforcement Actions (Final May 1992). Provides a summary of past and present permits and registrations requested and received by Mound Plant, as well as a summary of enforcement actions. As a government-owned, contractor-operated facility, Mound Plant must operate not only in compliance with Executive Orders and Orders of the DOE, but also with federal and state statutes and regulations, and corporate policies. This report includes only those activities relating to compliance with federal, state, and county environmental regulations and statutes. Conditions of discharges and other permit limitations were beyond the scope of the report. Copies of permits of interest were copied in the appendix of the report.

- Volume 11 Spills and Response Actions (Final March 1992). Provides summaries of past product and hazardous substance spills, including amounts and locations and the response actions conducted. Data were compiled from records and incident reports of the Mound Plant safety office. Limited data were also available from the health physics office. 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 were beyond the scope of this report. Summaries of response actions conducted by the EPA and OEPA are also included.

EXHIBIT B

PHOTOGRAPHS

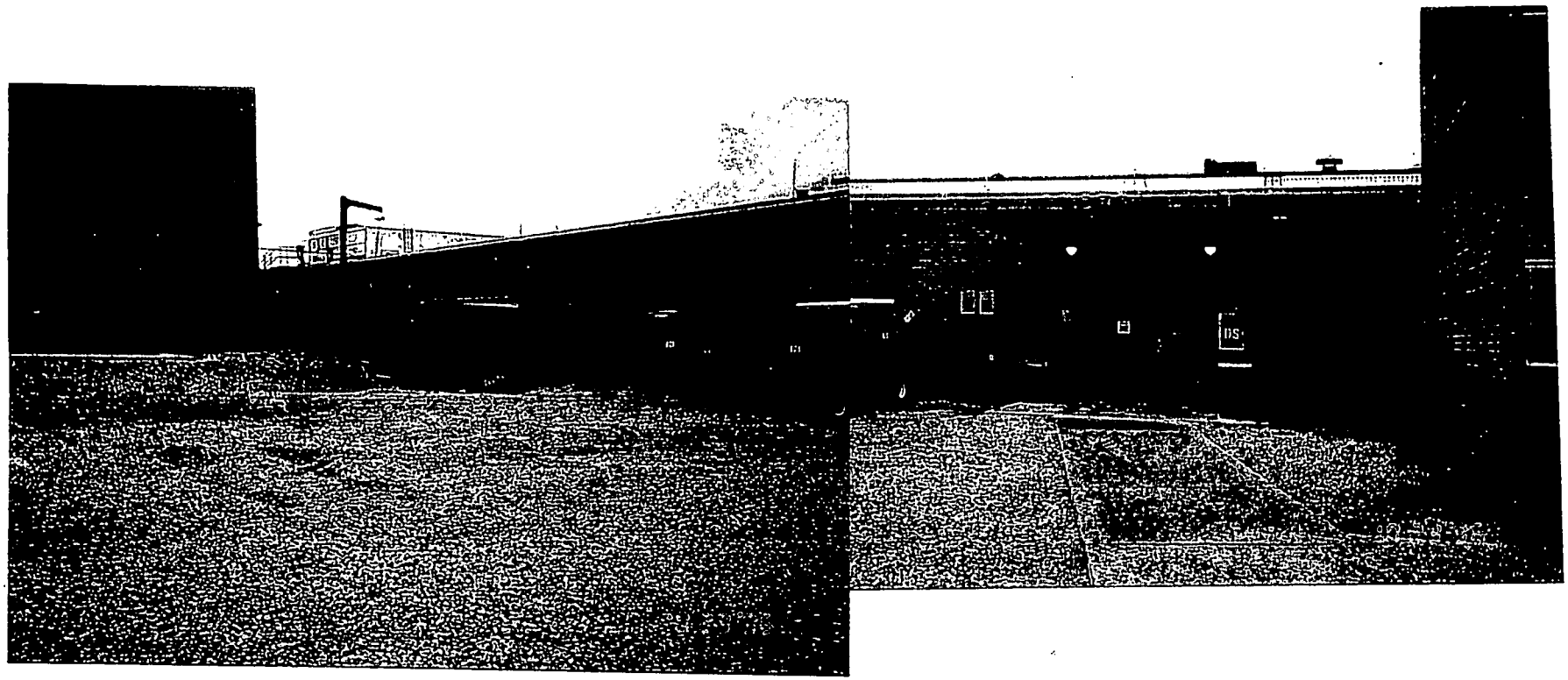

PHOTO 1:

NORTH SIDE OF BUILDING DS
T-BUILDING SHAFT AT LEFT
VIEW SOUTHEAST

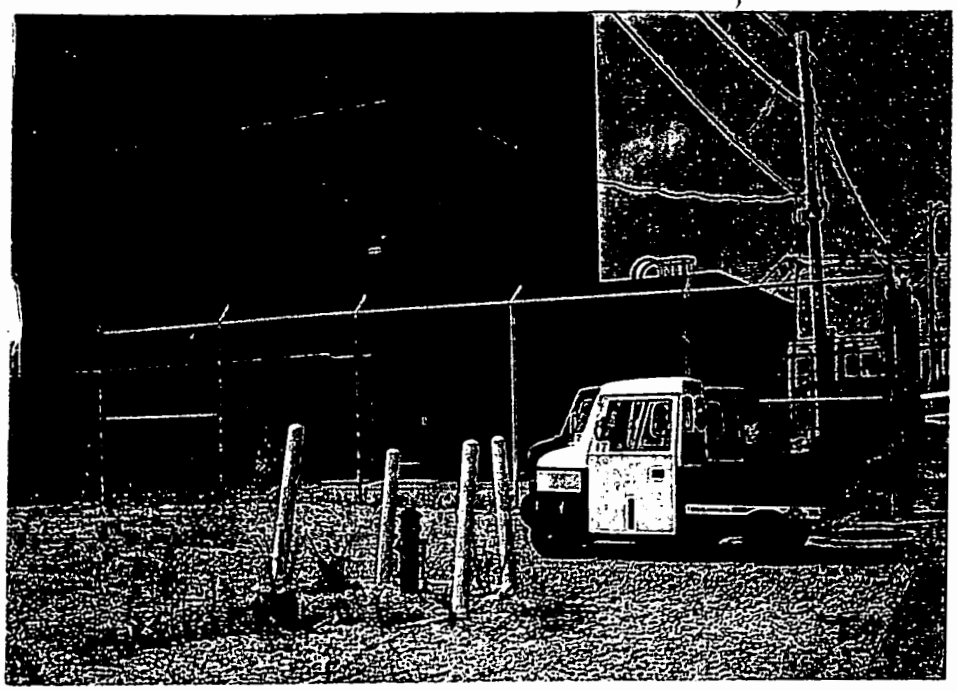

PHOTO 2:

T-BUILDING SHAFT AT
NORTHWEST CORNER OF BUILDING DS
VIEW SOUTHWEST

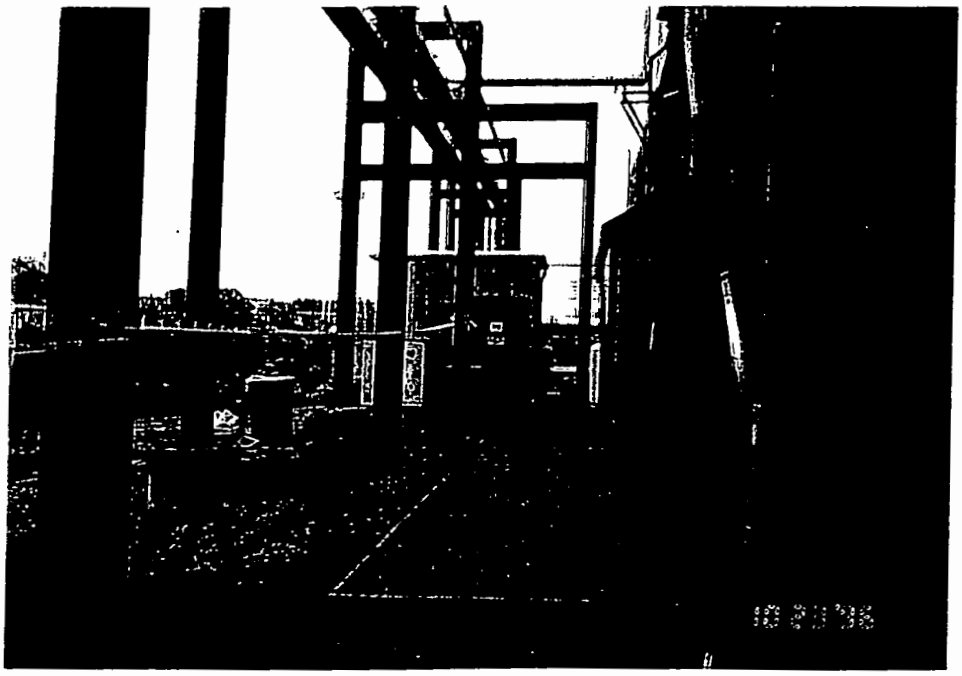

PHOTO 3:

EAST SIDE OF BUILDING DS
SOLVENT STORAGE SHED
VIEW SOUTH

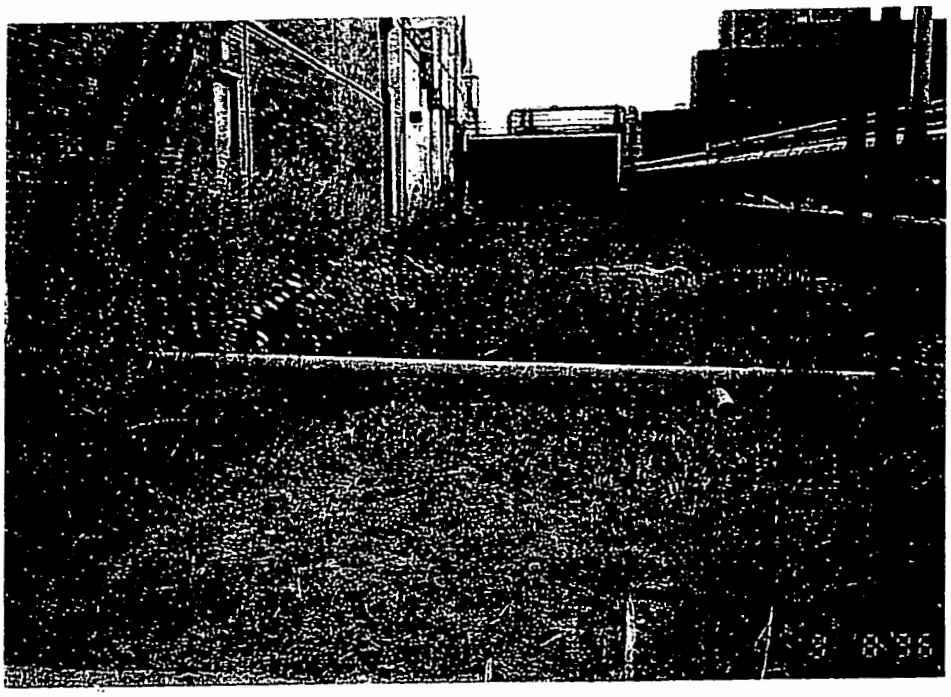

PHOTO 4:

SOUTH SIDE OF BUILDING DS AT RIGHT
COS BUILDING AT LEFT
VIEW EAST

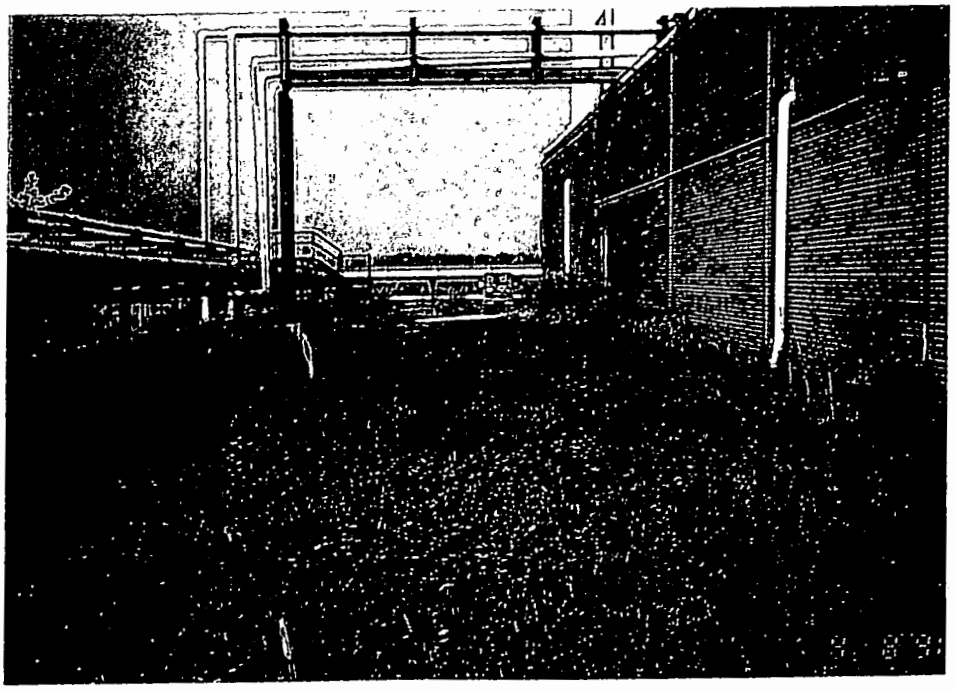

PHOTO 5:

SOUTH SIDE OF BUILDING DS
VIEW WEST

PHOTO 6:

SOUTHERN SLOPE OF MOUND
MAIN HILL BEHIND BUILDING DS
VIEW SOUTH

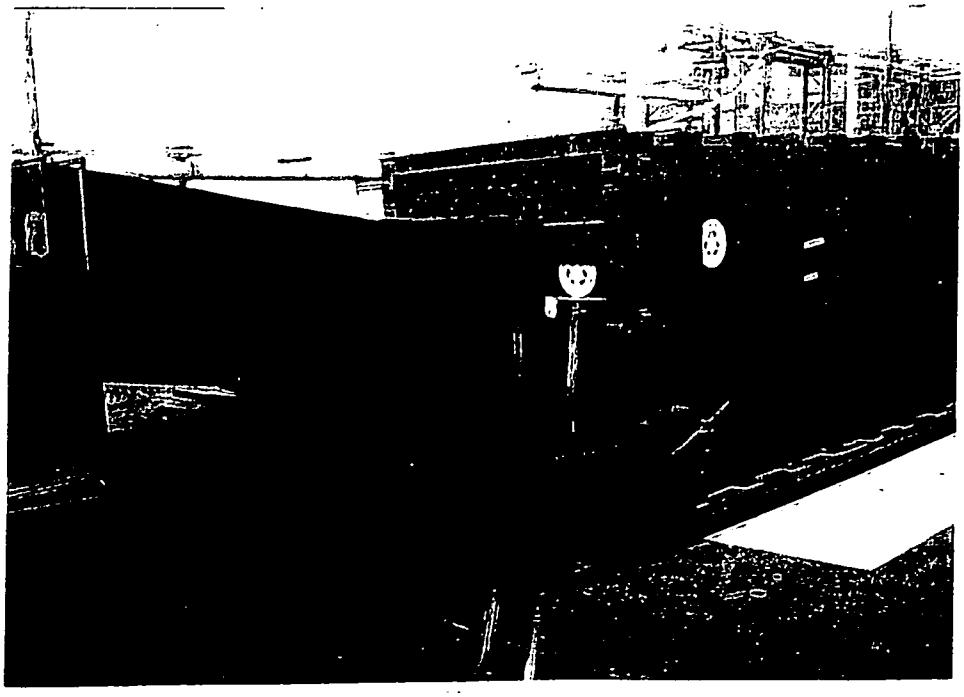

PHOTO 7:

VIEW OF DUMPSTER FROM DECK
WEST SIDE OF BUILDING DS
VIEW NORTHWEST

PHOTO 8:

INSIDE MAGAZINE 54

PHOTO 9:

WEST END OF BUILDING DS BEYOND
DOCK, WAREHOUSE AND MAGAZINE
VIEW NORTH

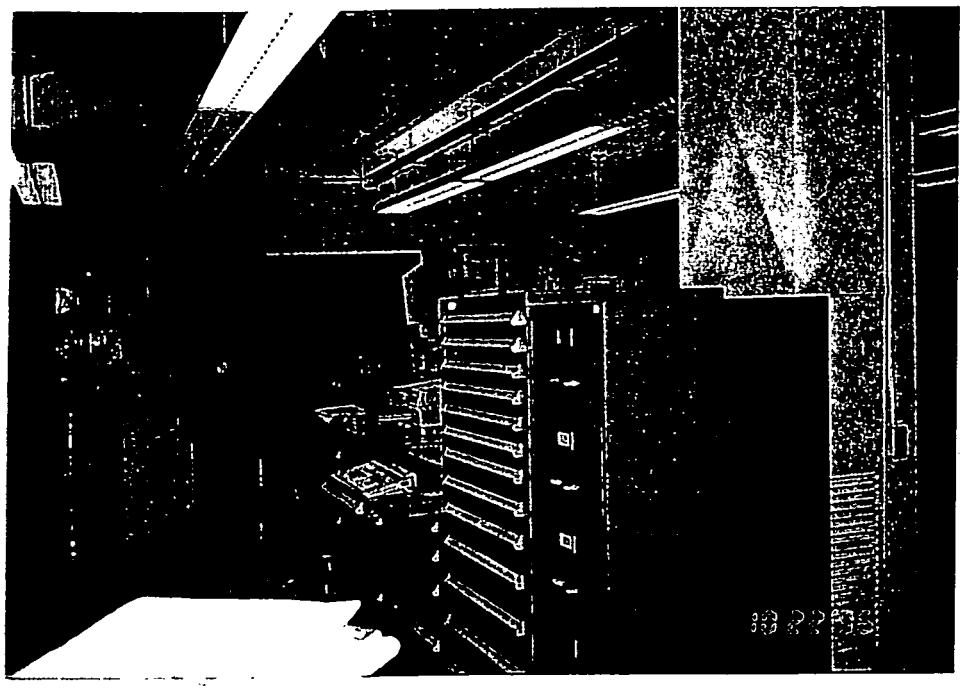

PHOTO 10:

DIMENSION LAB
ROOM 103

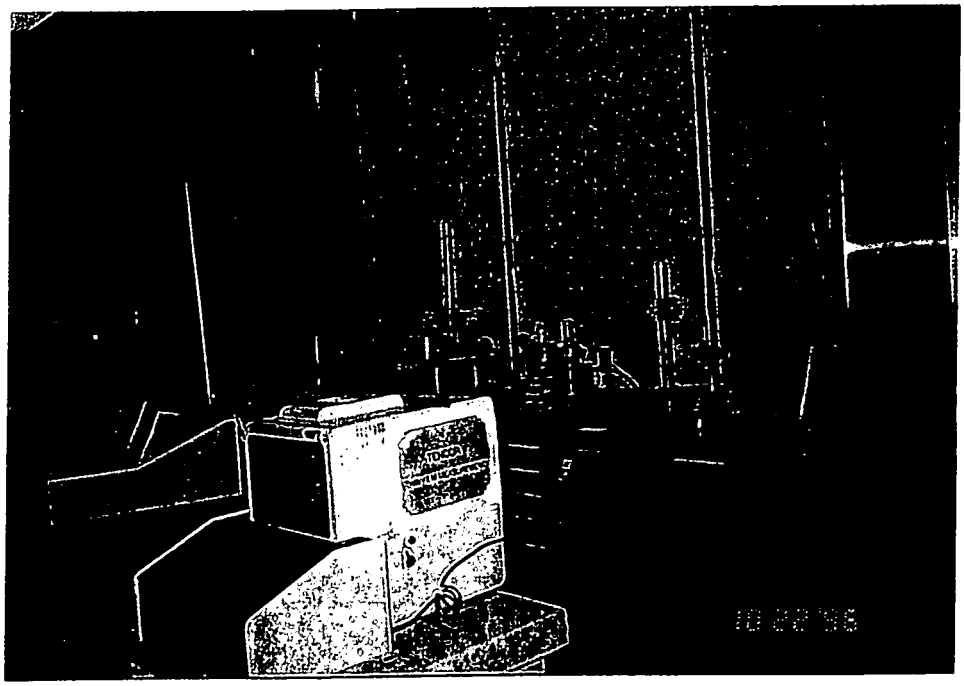

PHOTO 11:

DIMENSION LABORATORY
ROOM 107A

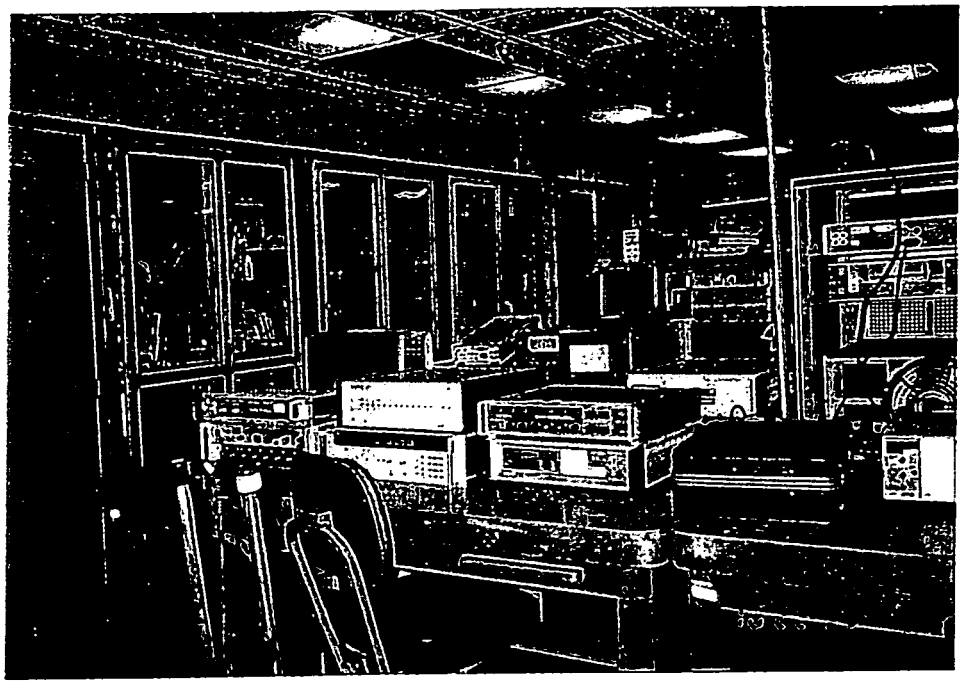

PHOTO 12:

ELECTRICAL LABS
ROOM 110

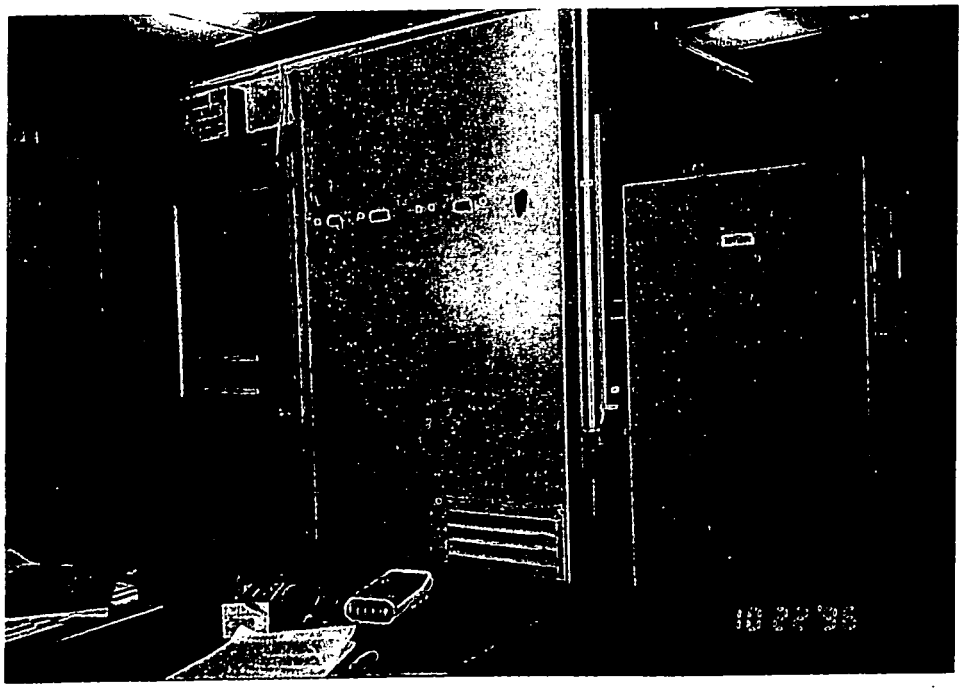

PHOTO 13:

SPECIALTY BOOTH
FOR 100,000 KV TESTING

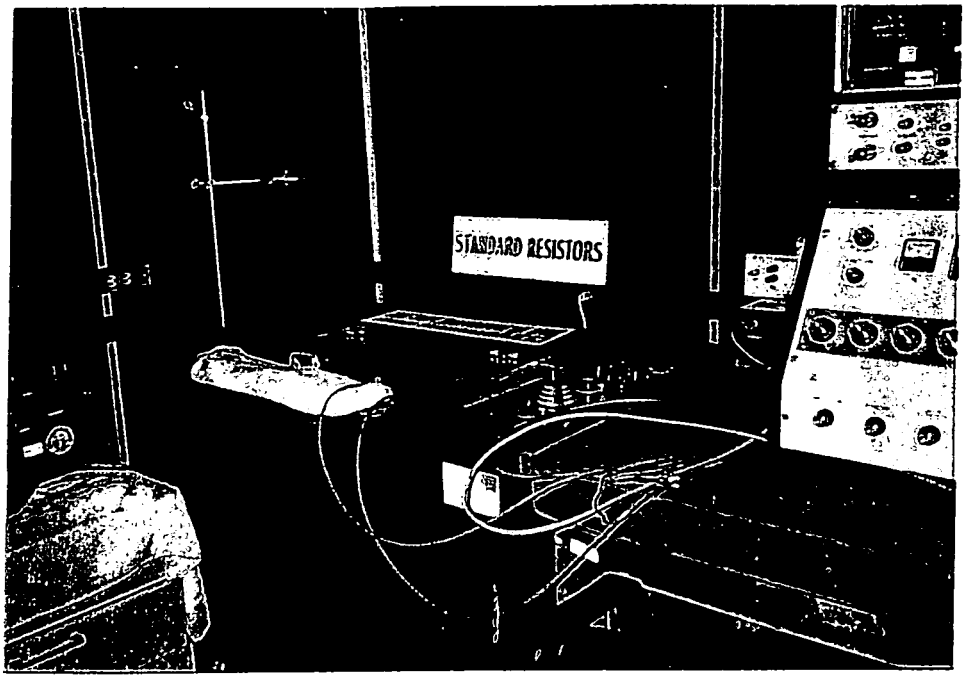

PHOTO 14:

RESISTOR TESTING ELECTRICAL
LAB (CONTAINS MINERAL
ORE BATH)

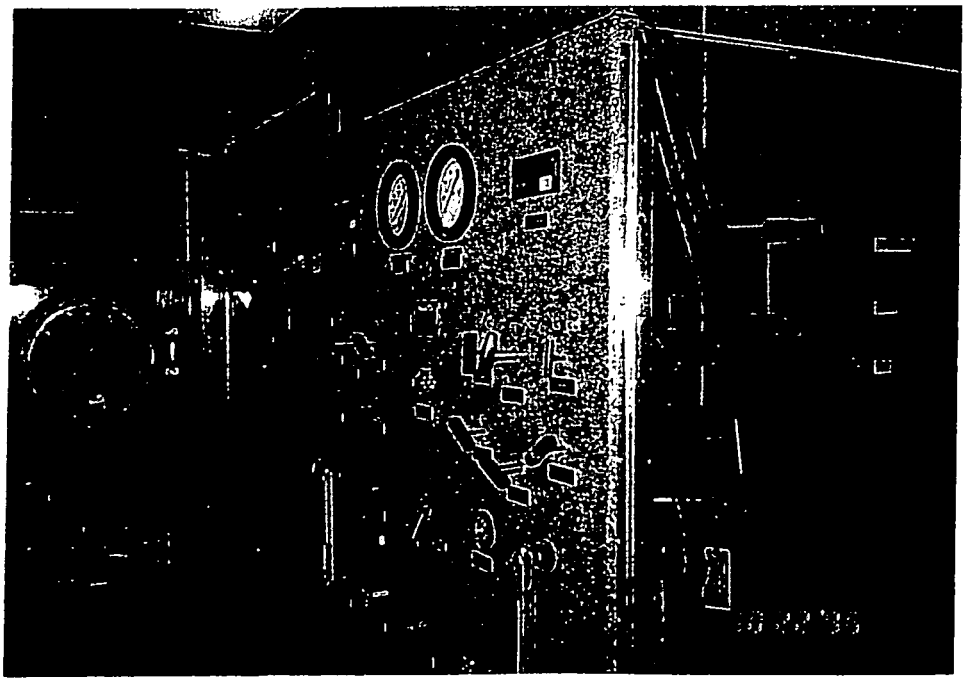

PHOTO 15:

200,000 PSI PRESSURE GAUGE
ROOM 134

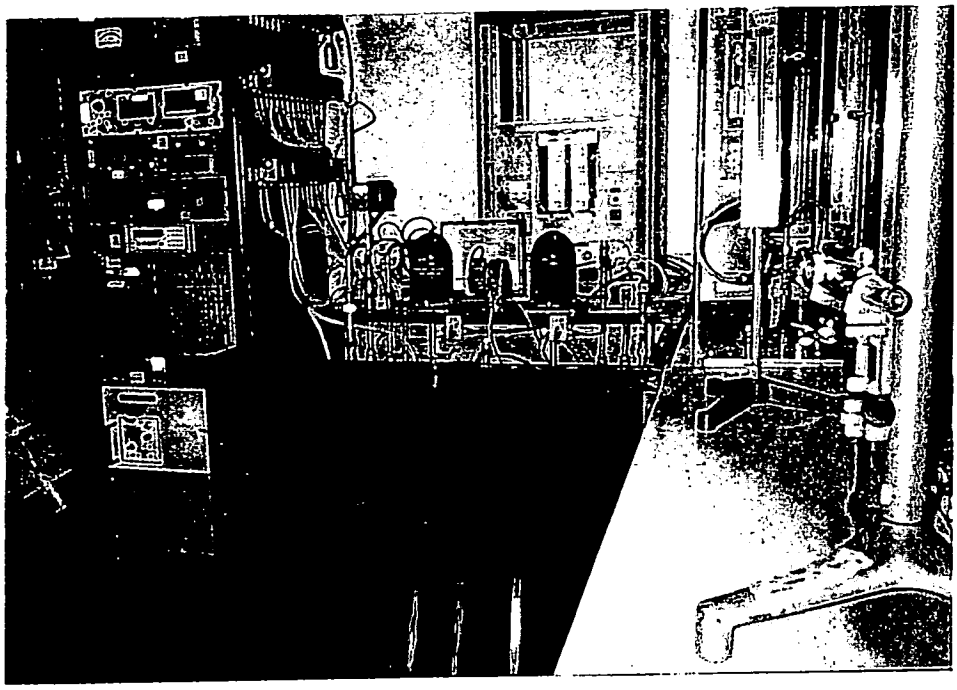

PHOTO 16:

VOLUME CALIBRATION INSTRUMENT
WITH WATER VESSEL
ROOM 135

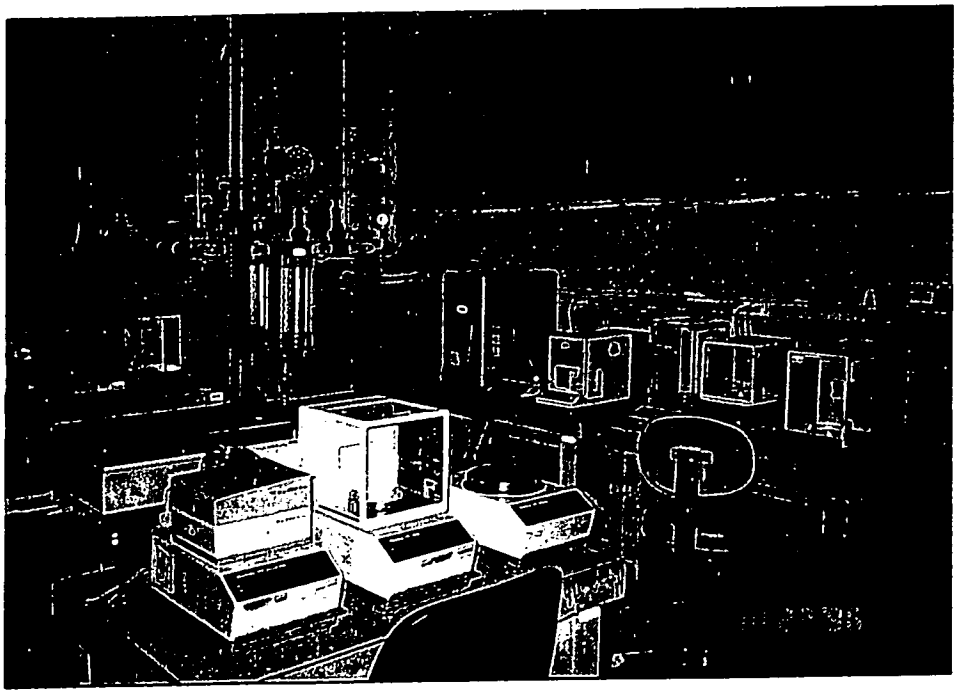

PHOTO 17:

MASS LABORATORY
ROOM 109

PHOTO 18:

WEIGHTS IN
ROOM 106

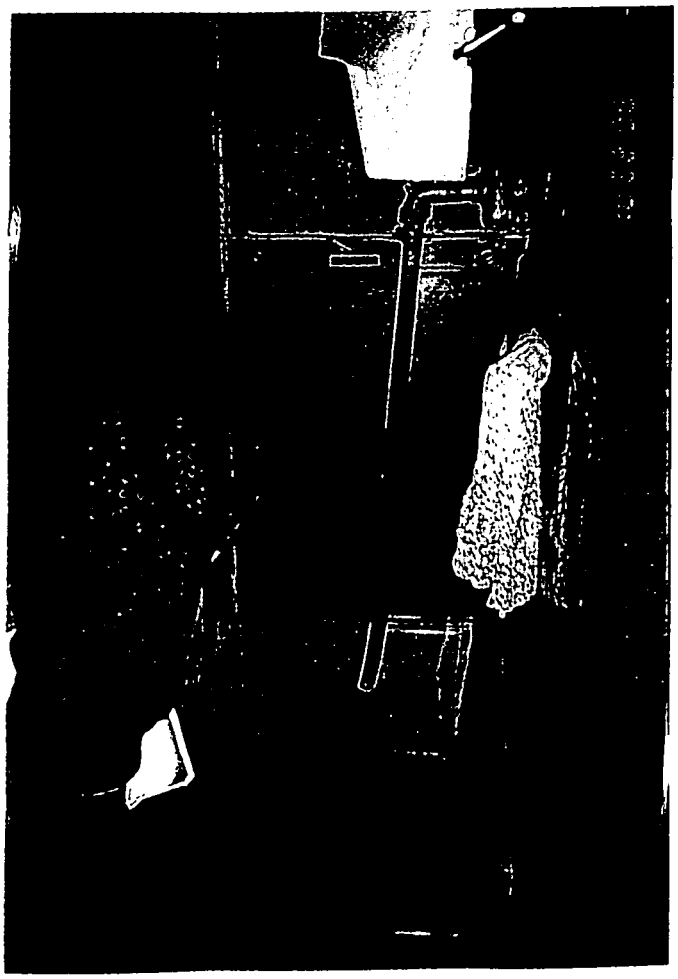

PHOTO 19:

FLOOR SINK
JANITOR CLOSET
ROOM 114

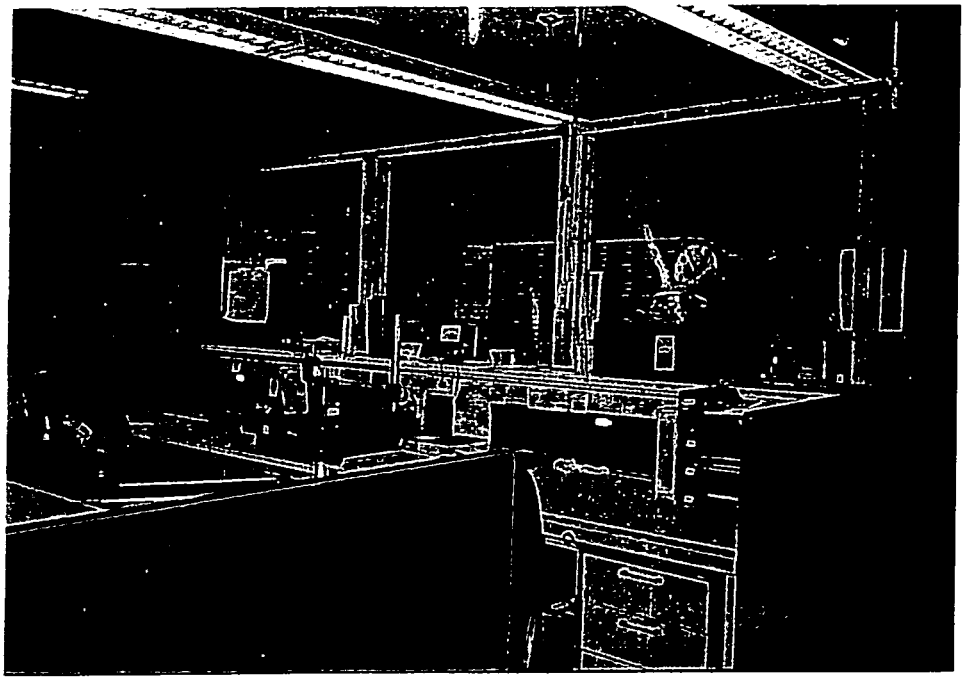

PHOTO 20:

RECEIVING INSPECTION
ROOM 125

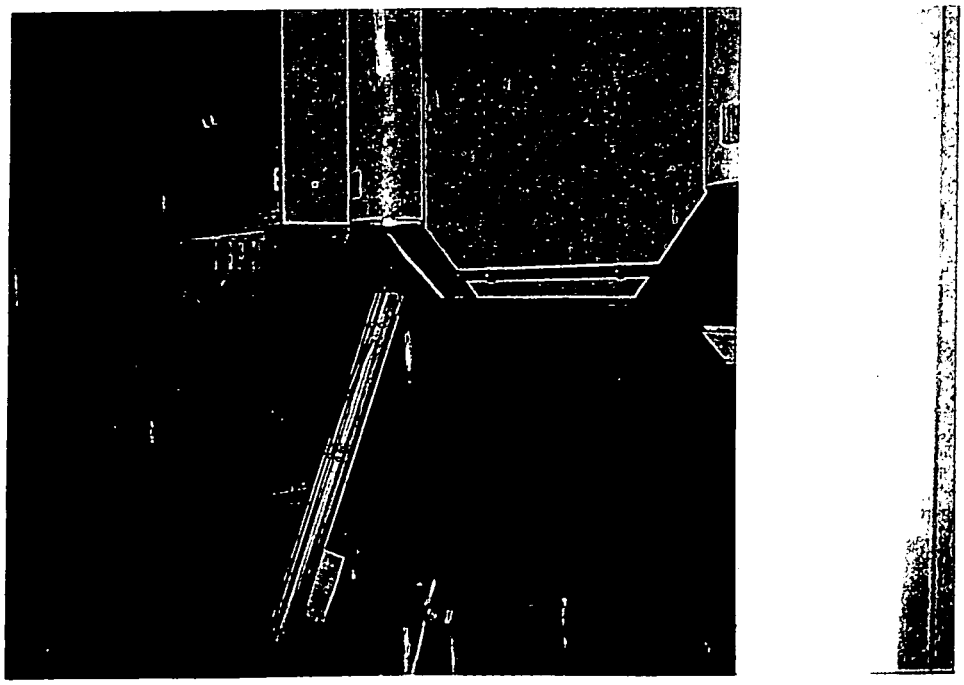

PHOTO 21:

SOLVENT HOOD
ROOM 125B

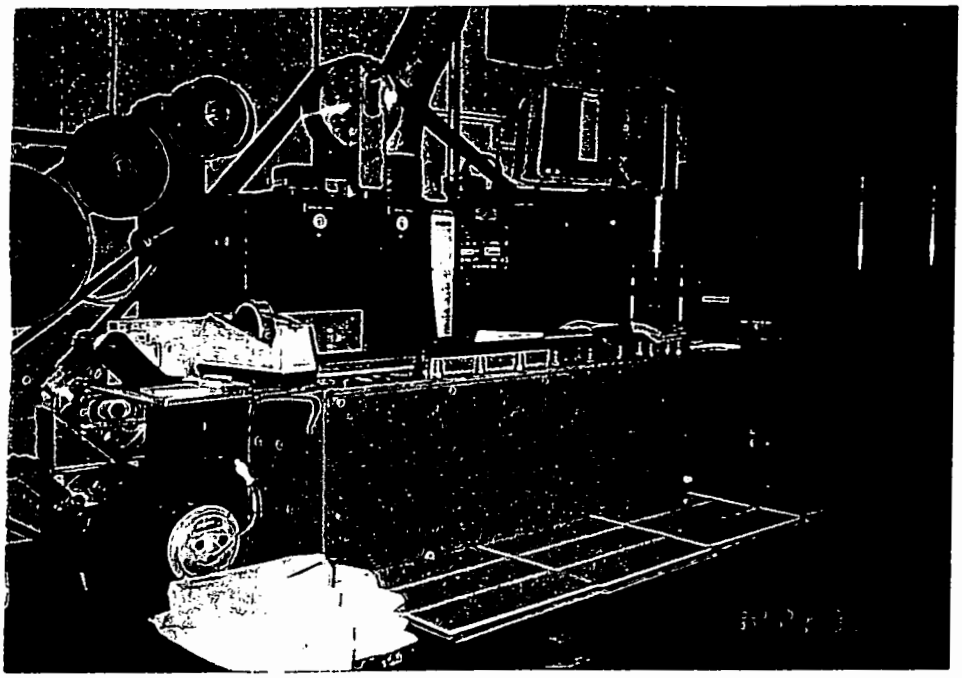

PHOTO 22:

LAMINATOR FLEXIBLE CIRCUIT
PRODUCTION - STAR CITY
ROOM 120

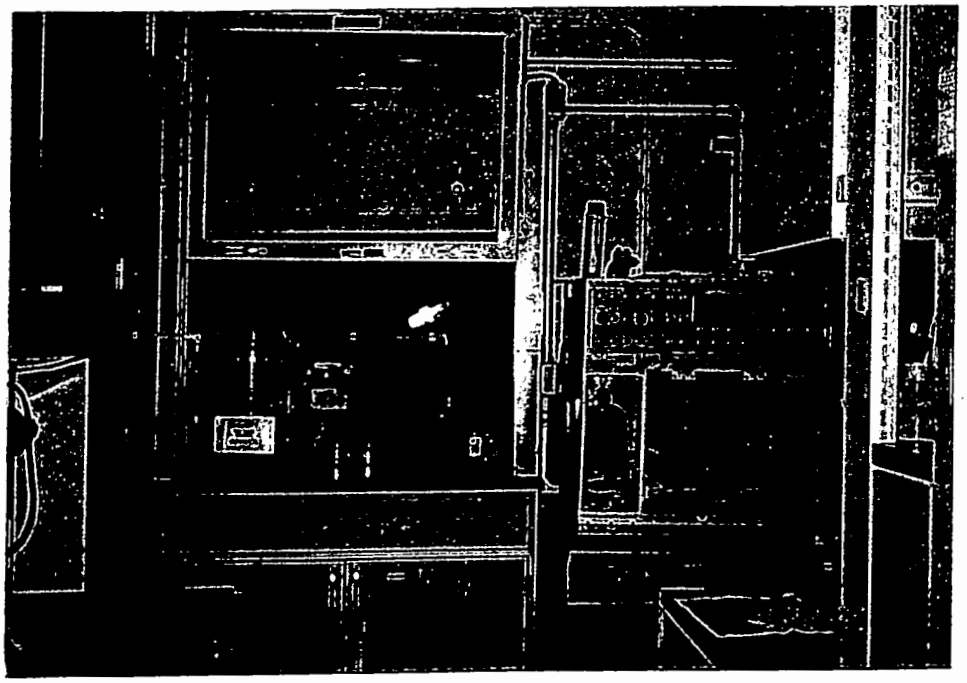

PHOTO 23:

FUME HOOD AND BRIDGE HEAD
CLEANER - STAR CITY
ROOM 122

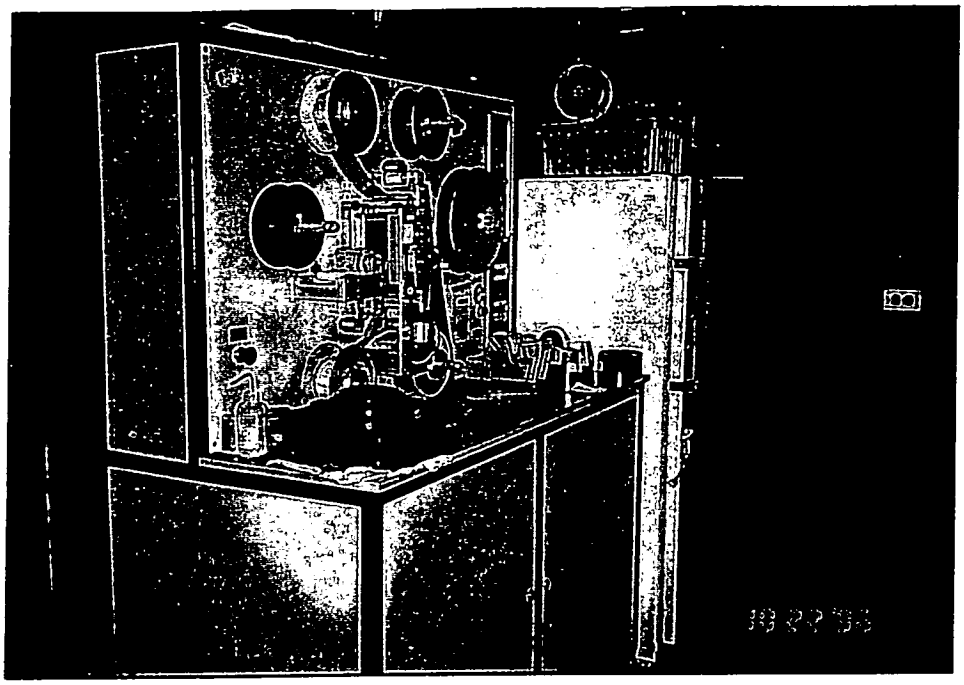

PHOTO 24:

RESIST LAMINATOR
ROOM 126B

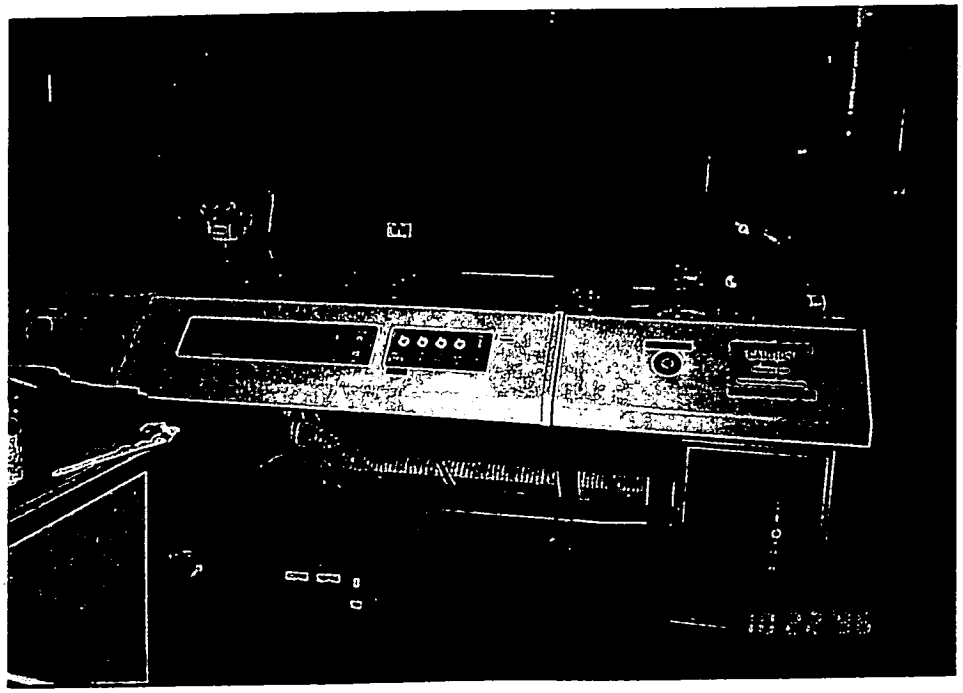

PHOTO 25:

UV PHOTO RESIST EXPOSING
UNIT - STAR CITY
ROOM 126

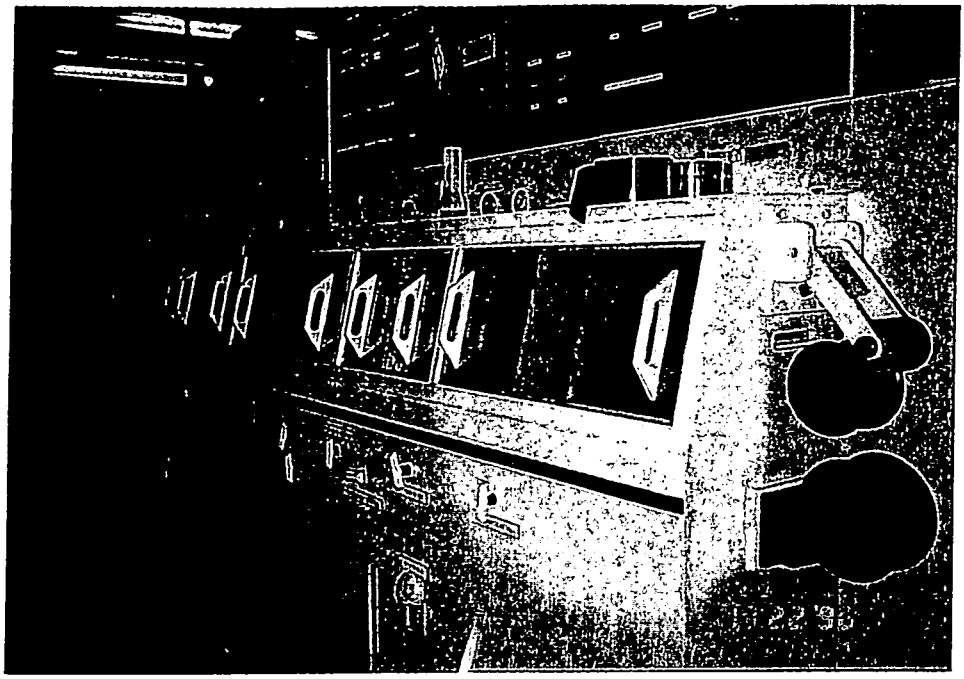

PHOTO 26:

DEVELOPER/ETCHING MACHINE
FLEXIBLE CIRCUIT - STAR CITY
ROOM 124

PHOTO 27:

FUME HOODS AND FLAMMABLE
CABINET
ROOM 118

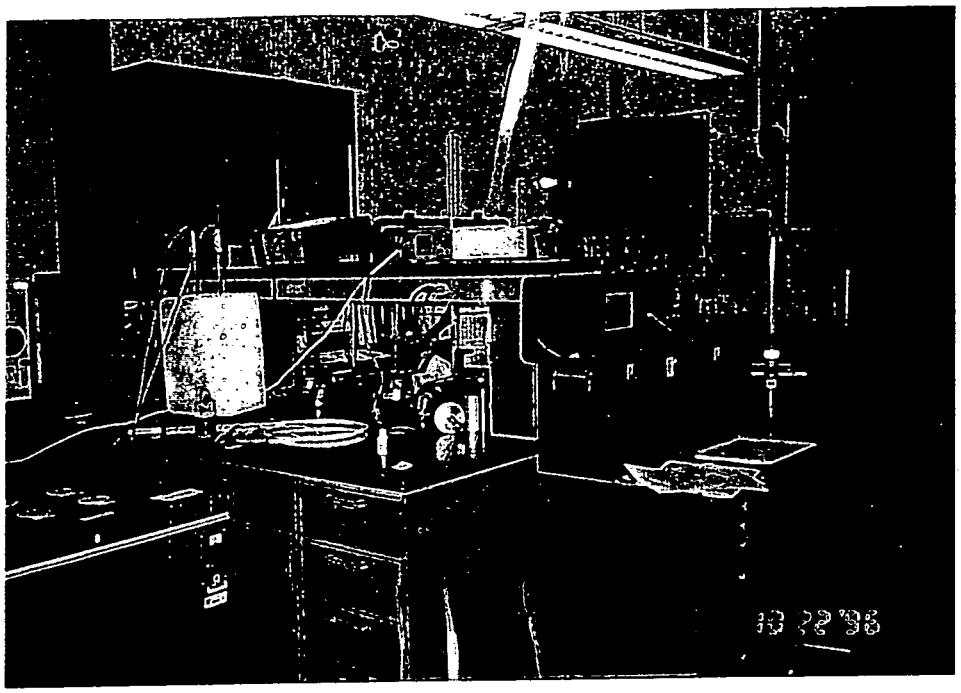

PHOTO 28:

TEMPERATURE LAB
ROOM 127

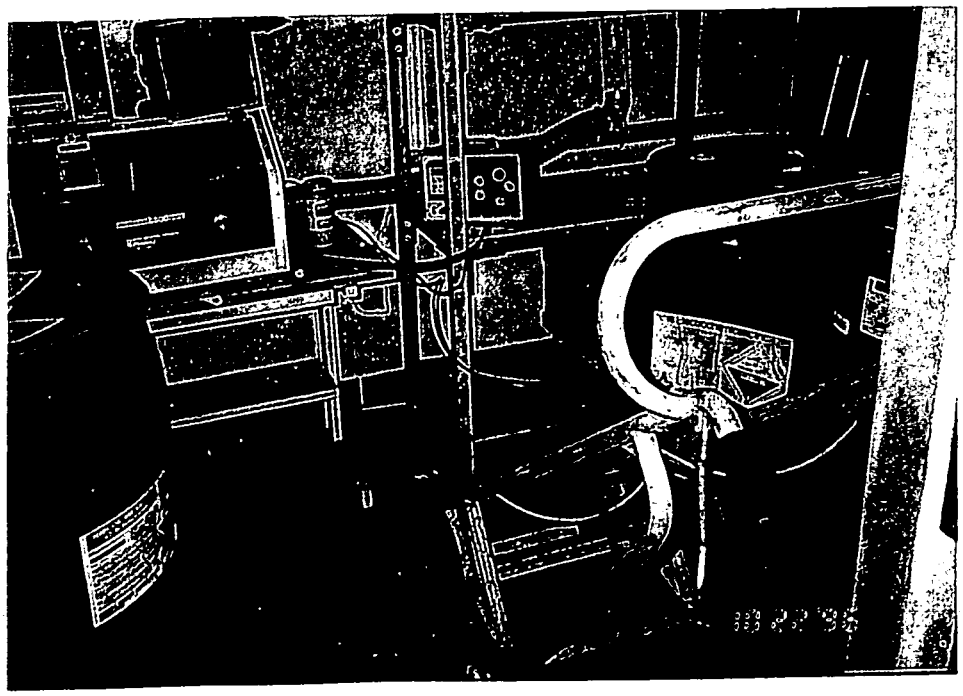

PHOTO 29:

SAND BLASTER,
CHEMICAL STORAGE
ROOM 127A

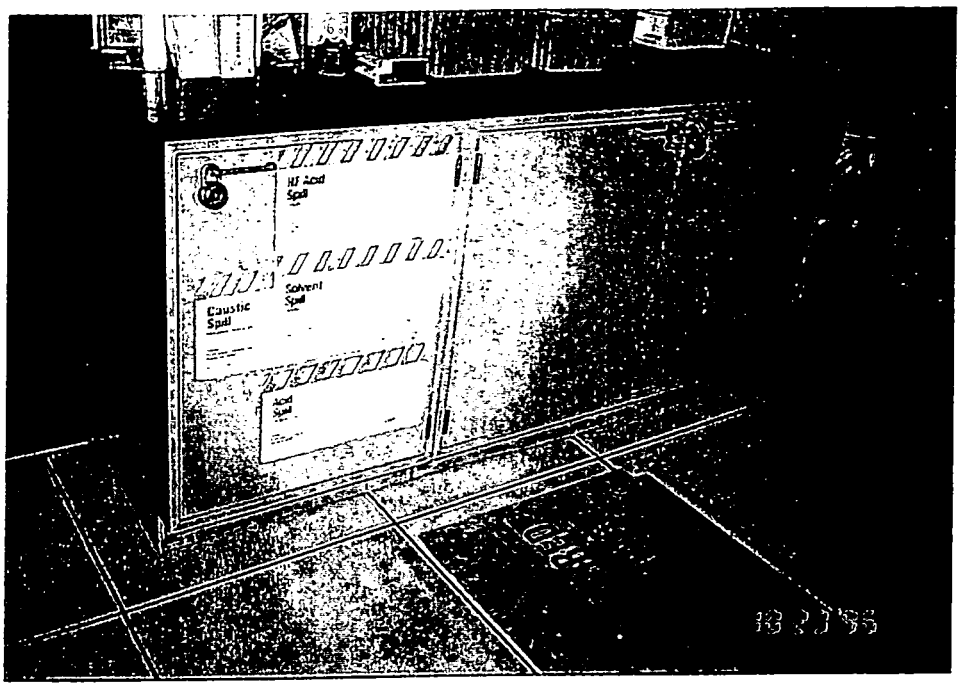

PHOTO 30:

SPILL KITS IN CLEAN
ROOM CORRIDOR
ROOMS 129-132

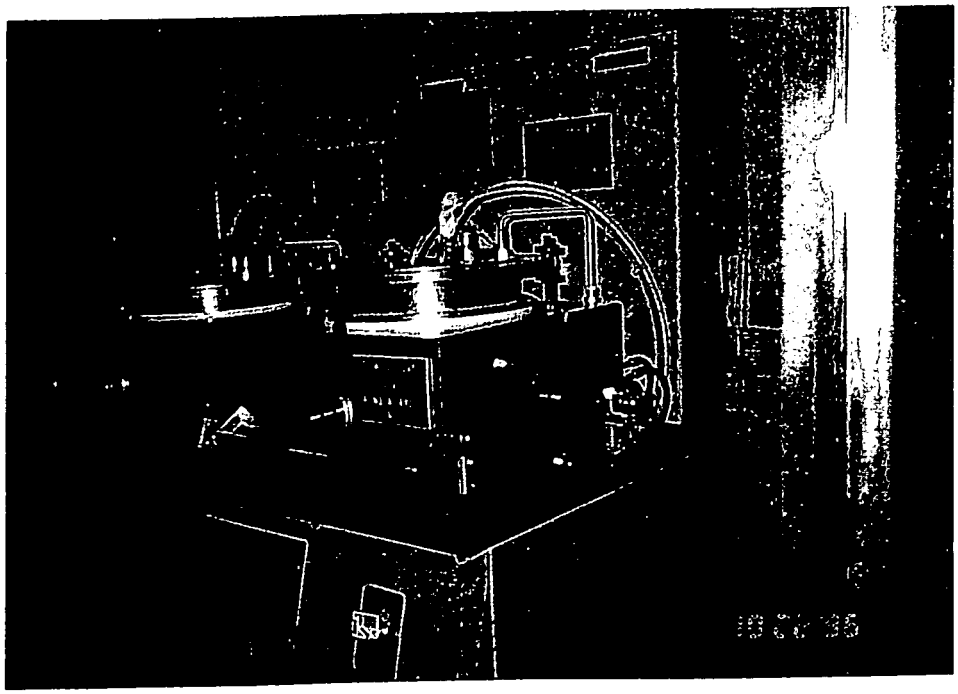

PHOTO 31:

EQUIPMENT IN HIGH
VACUUM CLEAN LAB
ROOM 130

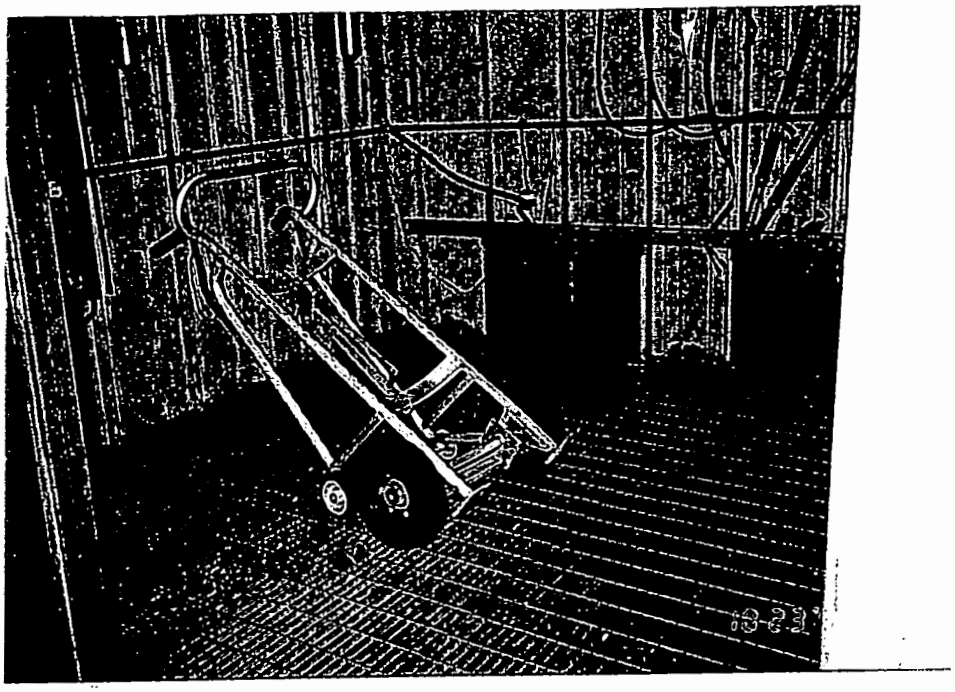

PHOTO 32:

BUILDING DS
SOLVENT STORAGE SHED
EMPTY

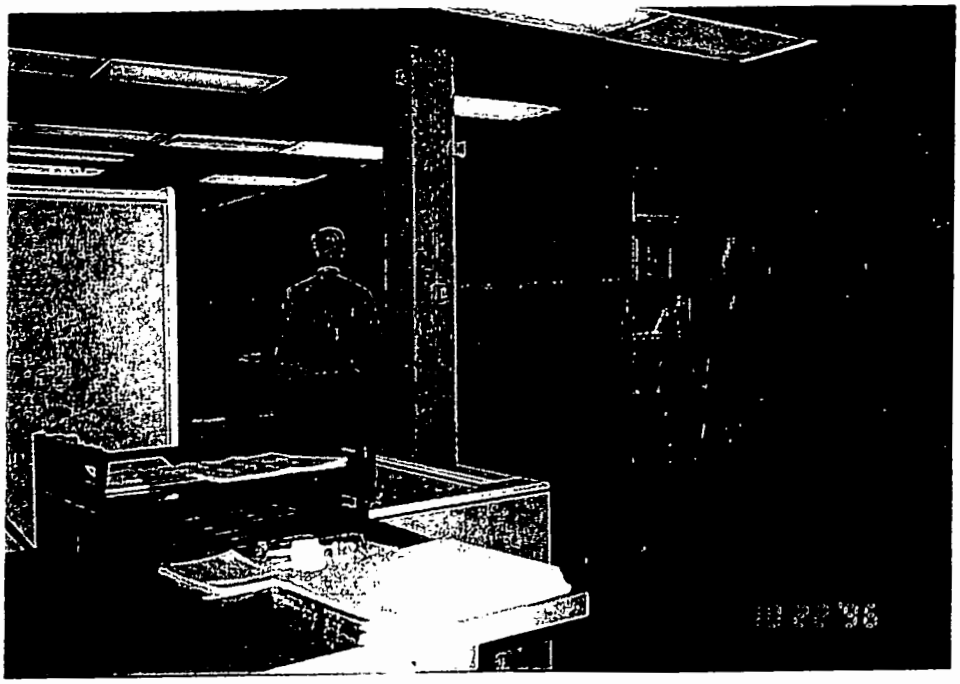

PHOTO 33:

METROLOGY CONTROL CENTER
ROOM 133

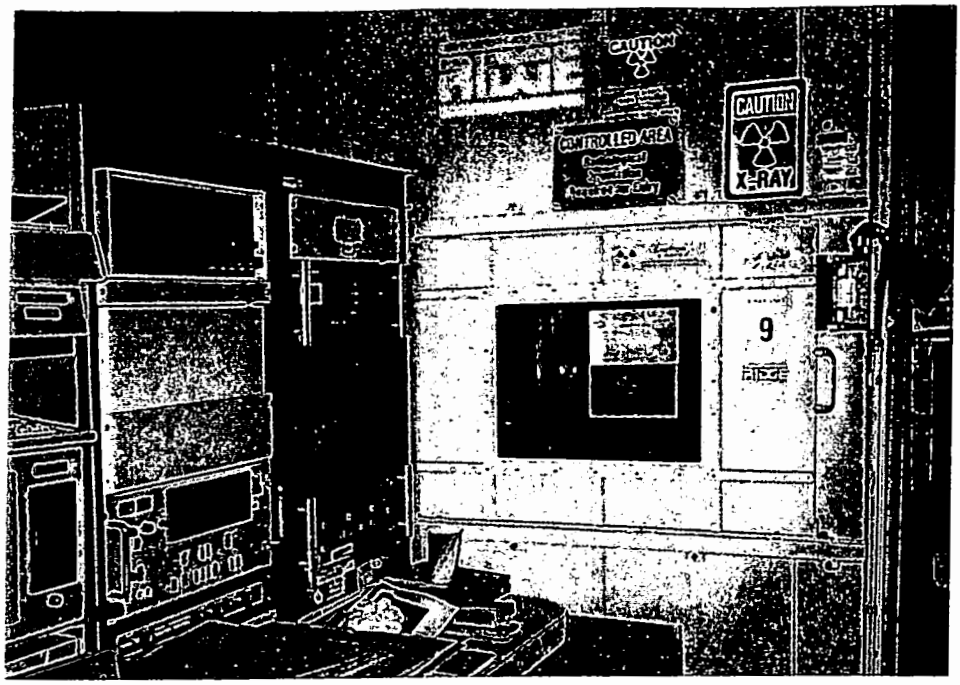

PHOTO 34:

X-RAY UNIT IN
ROOM 213

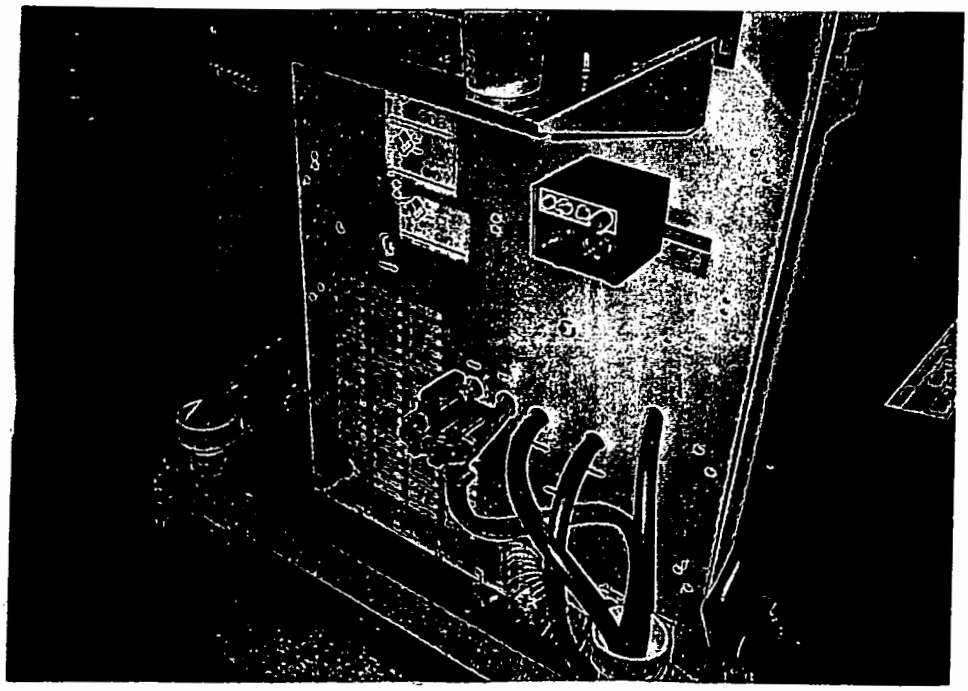

PHOTO 35:

X-RAY PHOTO DEVELOPER
IN ROOM 208B

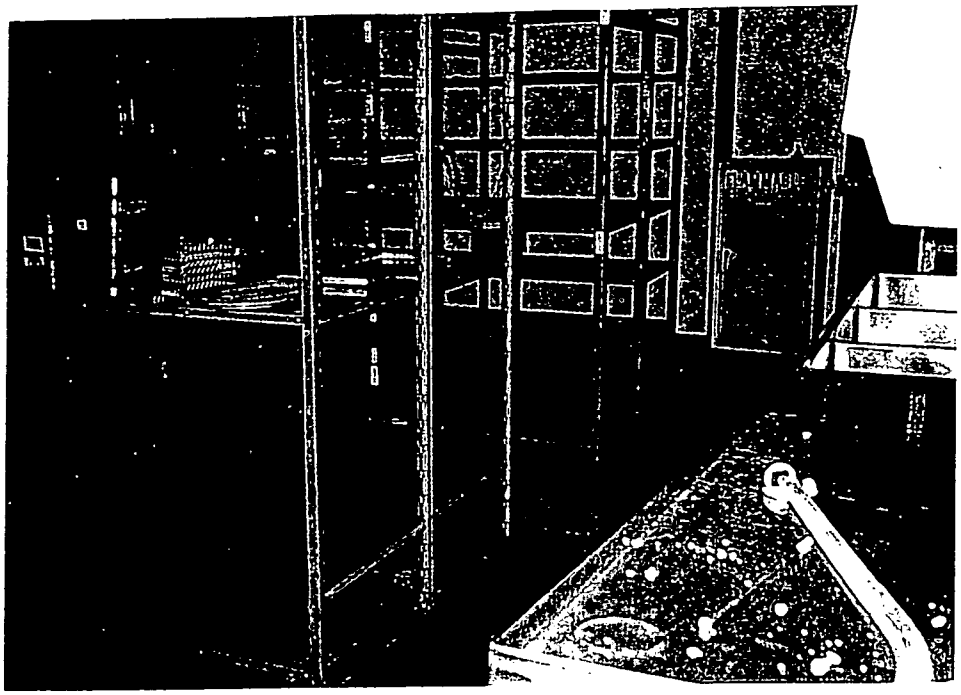

PHOTO 36:

TRAY ROOM
ROOM 251

PHOTO 37:

OVEN ROOM - ROOM 233
STAINLESS STEEL OVENS
BEHIND PACKING MATERIALS

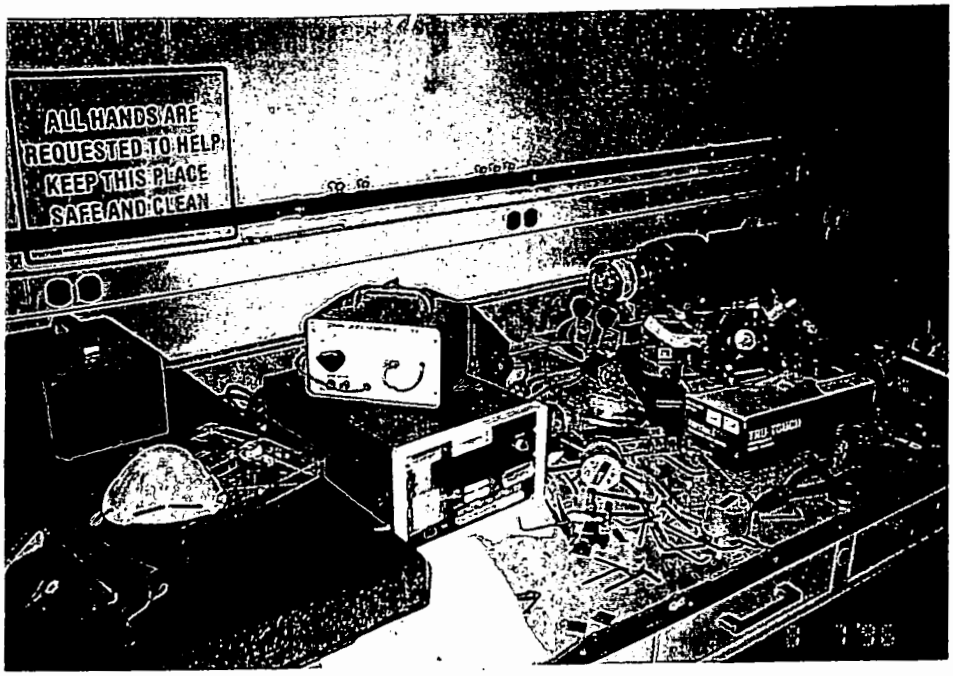

PHOTO 38:

SAFE SHUTDOWN
GRINDING OPERATION
ROOM 201

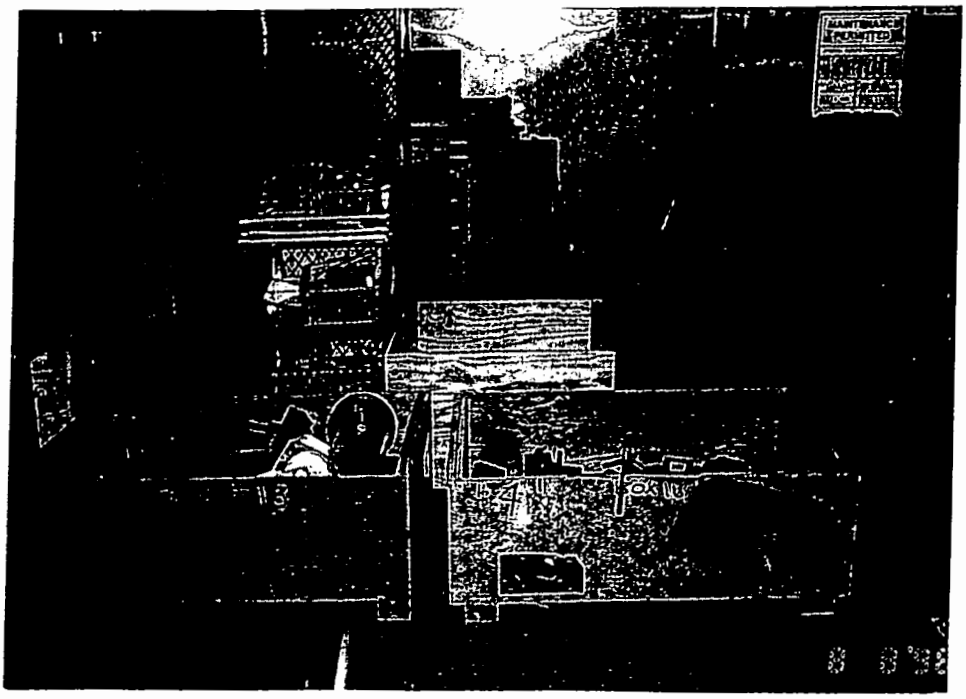

PHOTO 39:

SHIPPING DEPARTMENT
ROOM 250

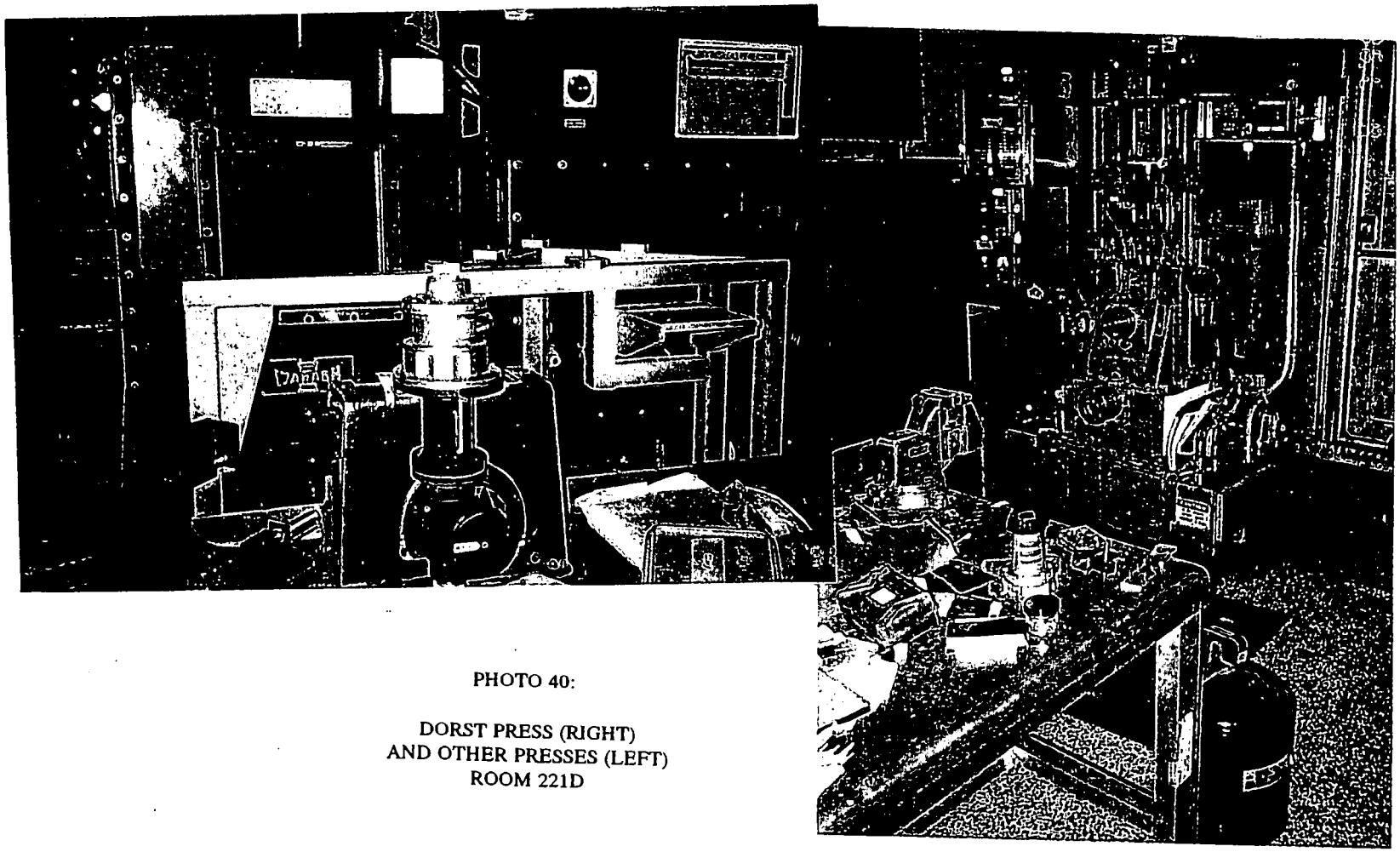

PHOTO 40:

DORST PRESS (RIGHT)
AND OTHER PRESSES (LEFT)
ROOM 221D

PHOTO 41:

OIL LEAK
ROOM 221D

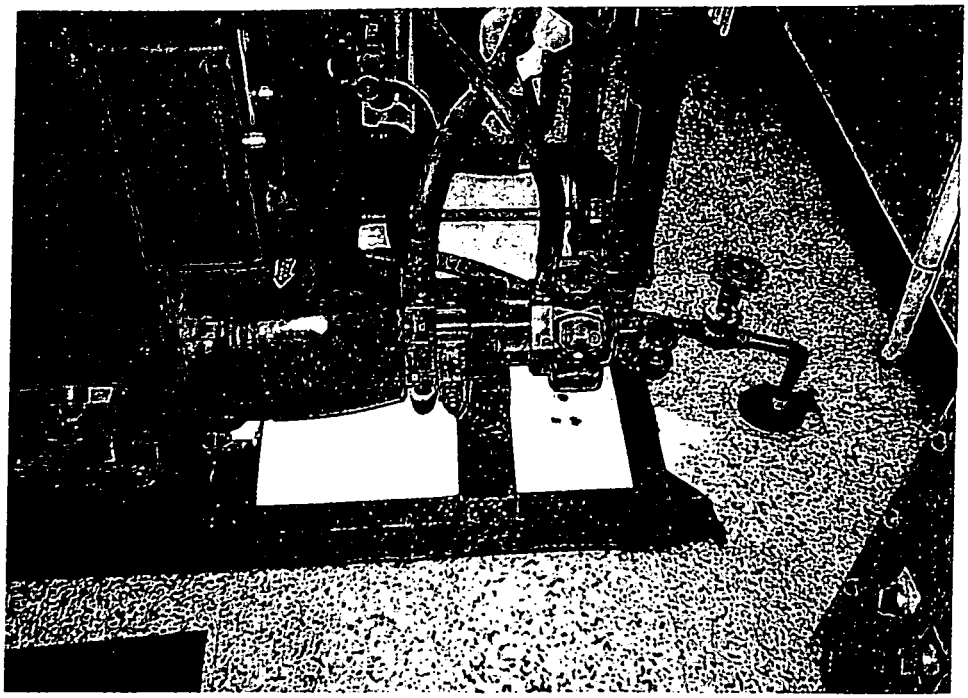

PHOTO 42:

OIL DRIP PAN
ROOM 221D

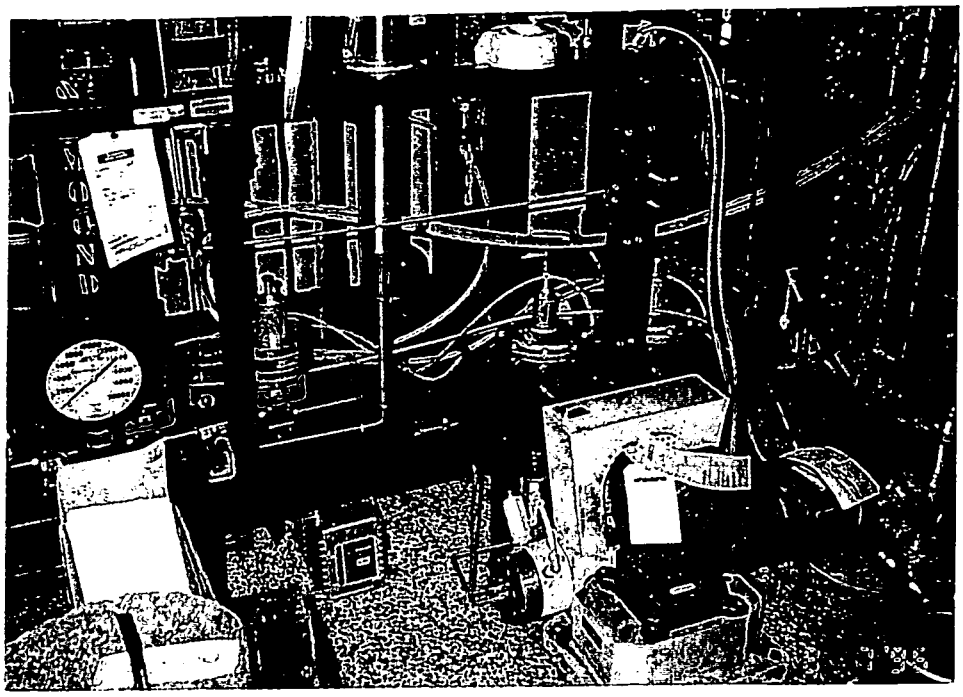

PHOTO 43:

EXPLOSIVES DEV. LAB
ROOM 221E

PHOTO 44:

EXPLOSIVES DEV. LAB
ROOM 221E

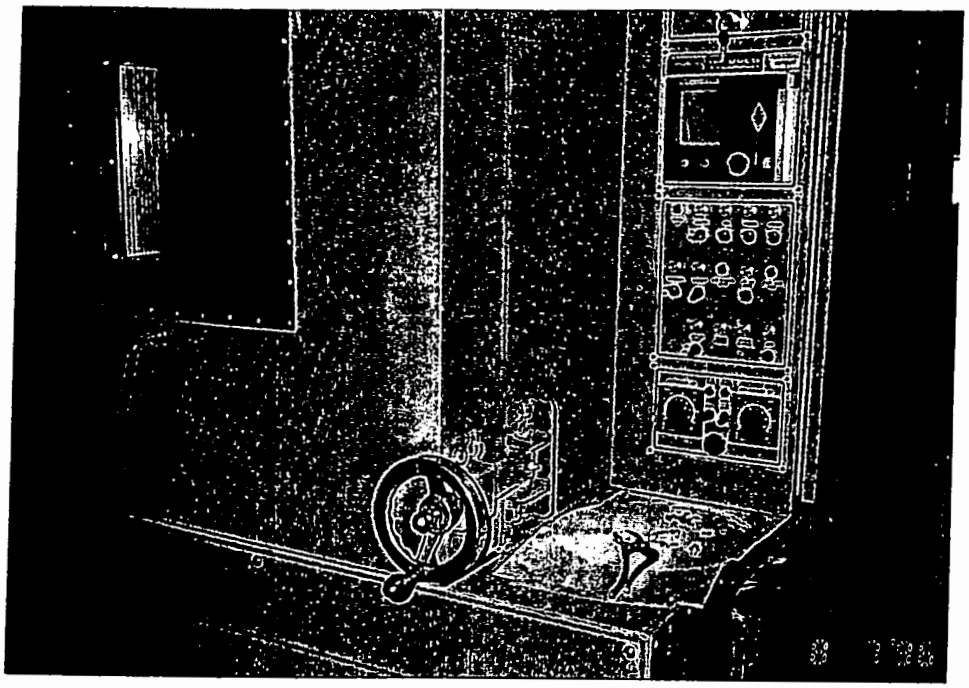

PHOTO 45:

ENVIRONMENTAL CHAMBER
ROOM 218

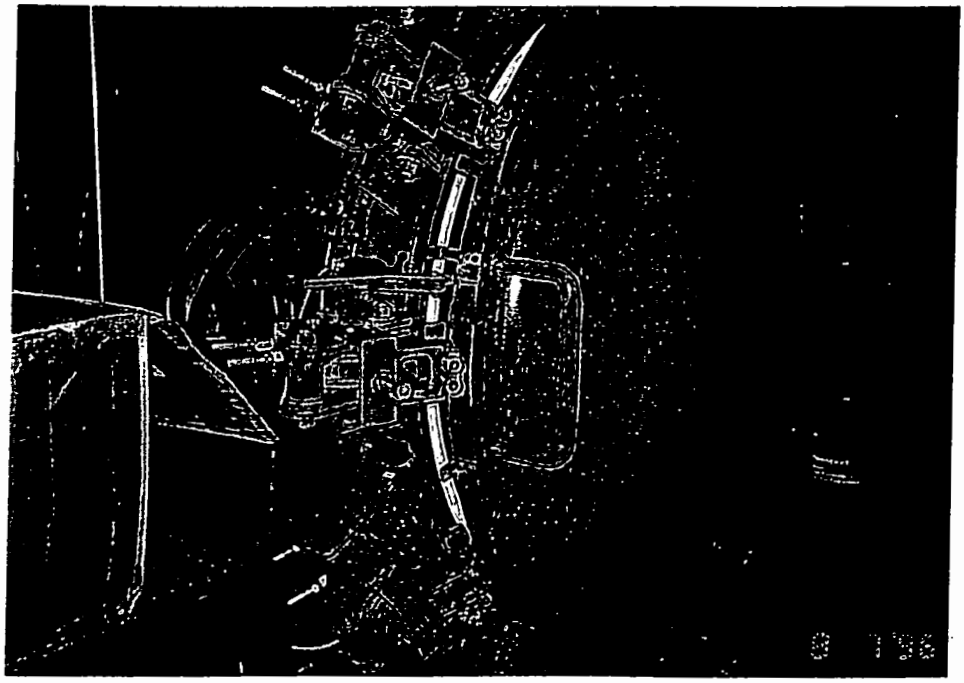

PHOTO 46:

EXPLOSIVE TEST CELL
ROOM 218

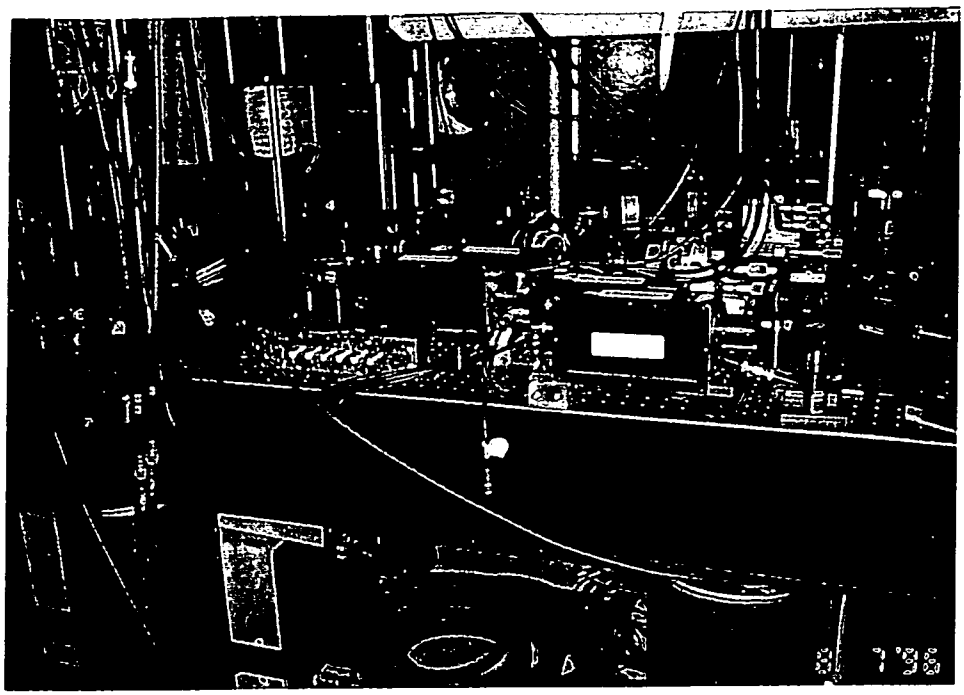

PHOTO 47:

WORK TABLE
ROOM 218

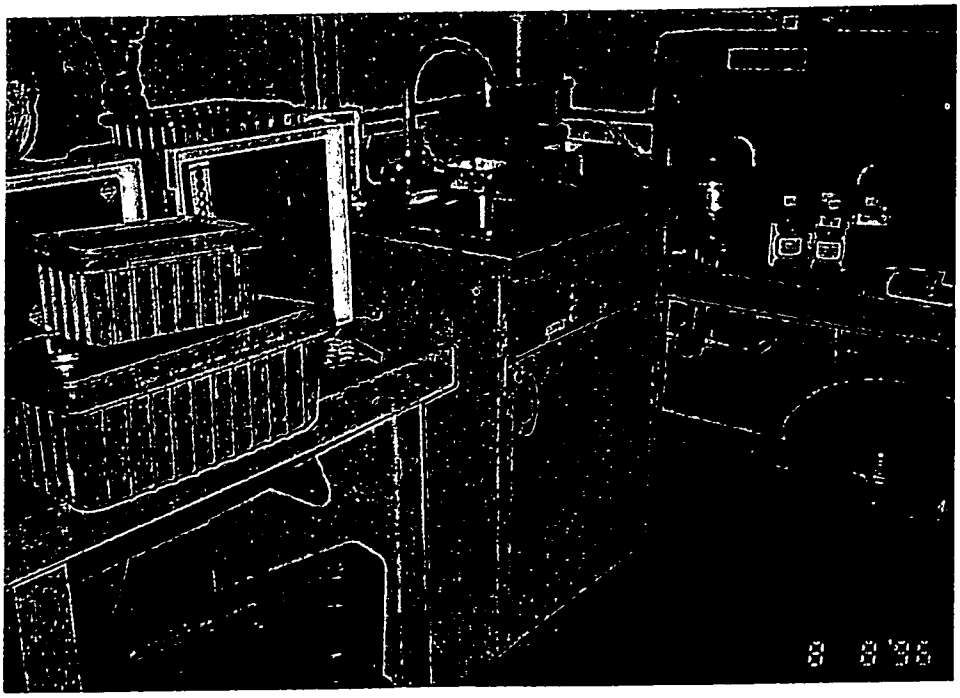

PHOTO 48:

DEVELOPMENT LAB
ROOM 227B

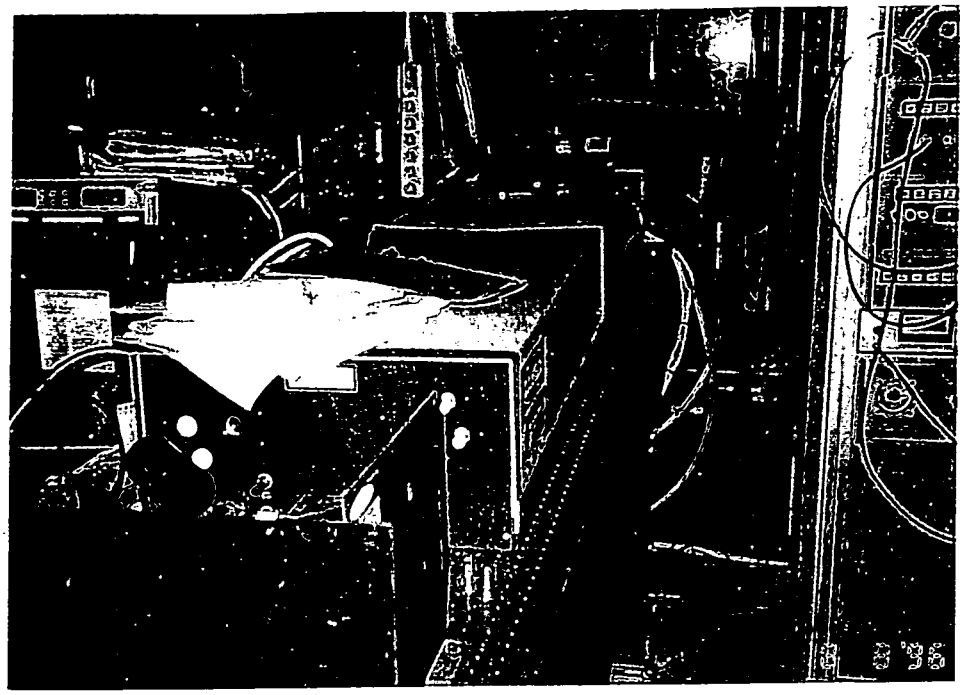

PHOTO 49:

LASERS IN DETONATION
DIAGNOSTICS LAB
ROOM 241

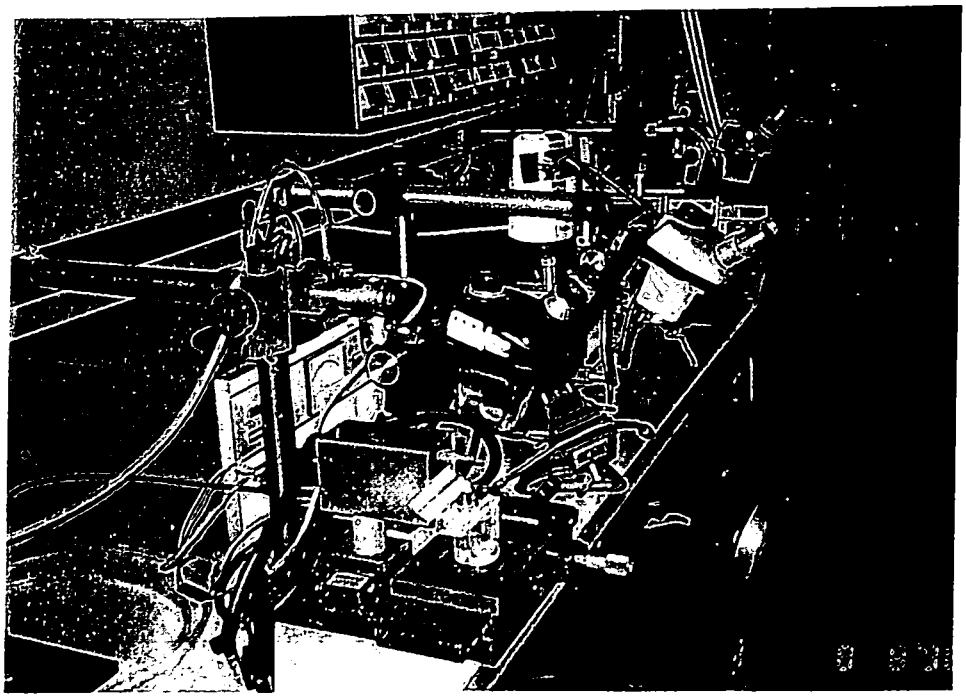

PHOTO 50:

EQUIPMENT IN
ROOM 215

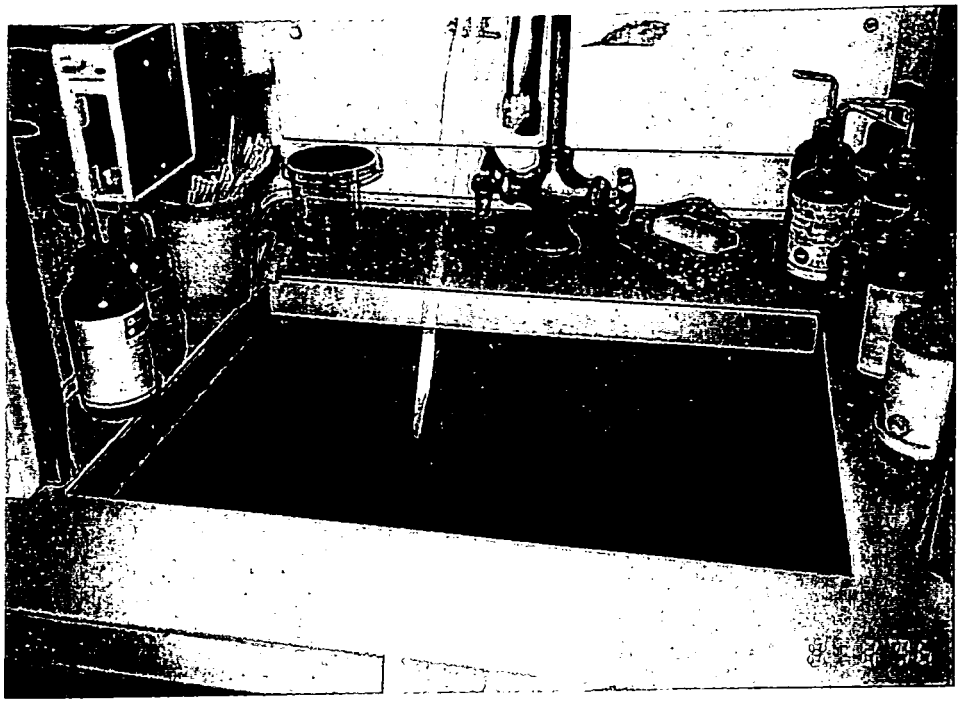

PHOTO 51:

SQUIRT BOTTLES OF
ACETONE AND ALCOHOL
ROOM 215

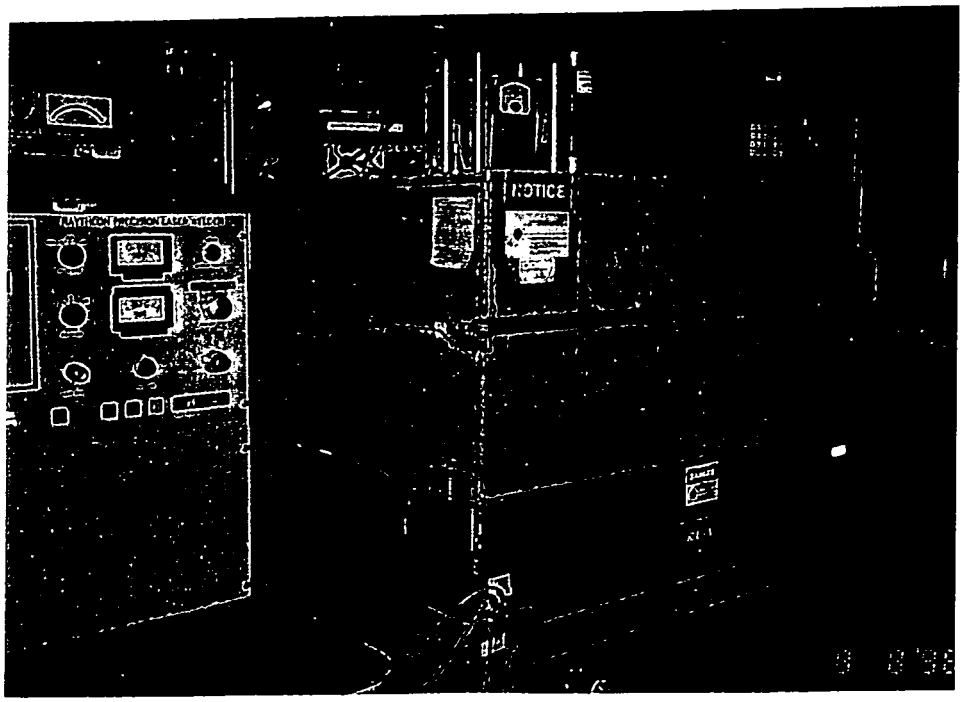

PHOTO 52:

LASER WELDER IN
ROOM 206

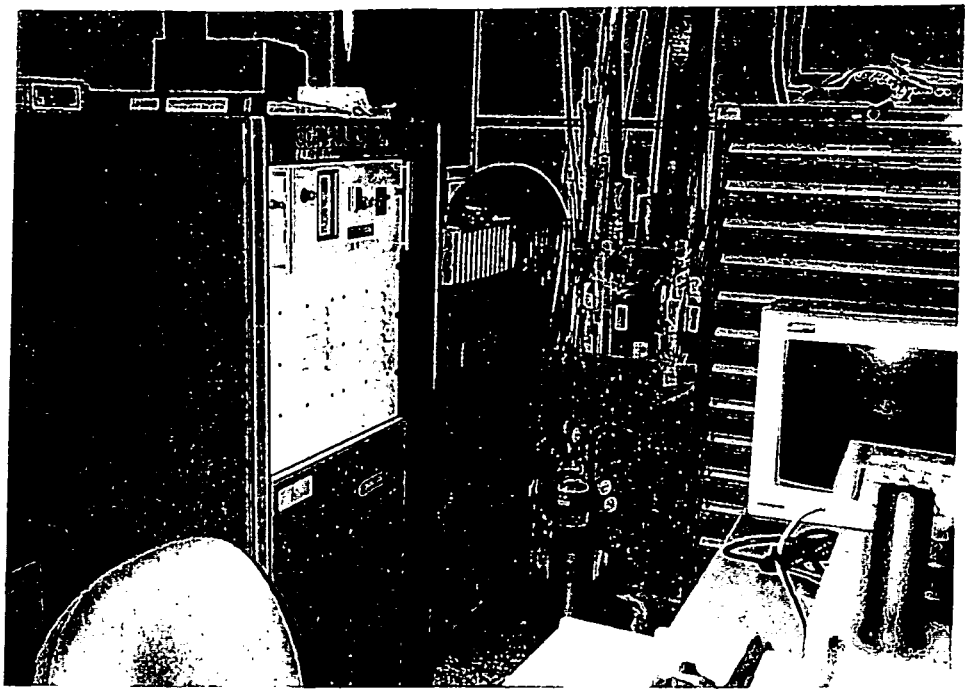

PHOTO 53:

LASER WELDER IN
ROOM 206

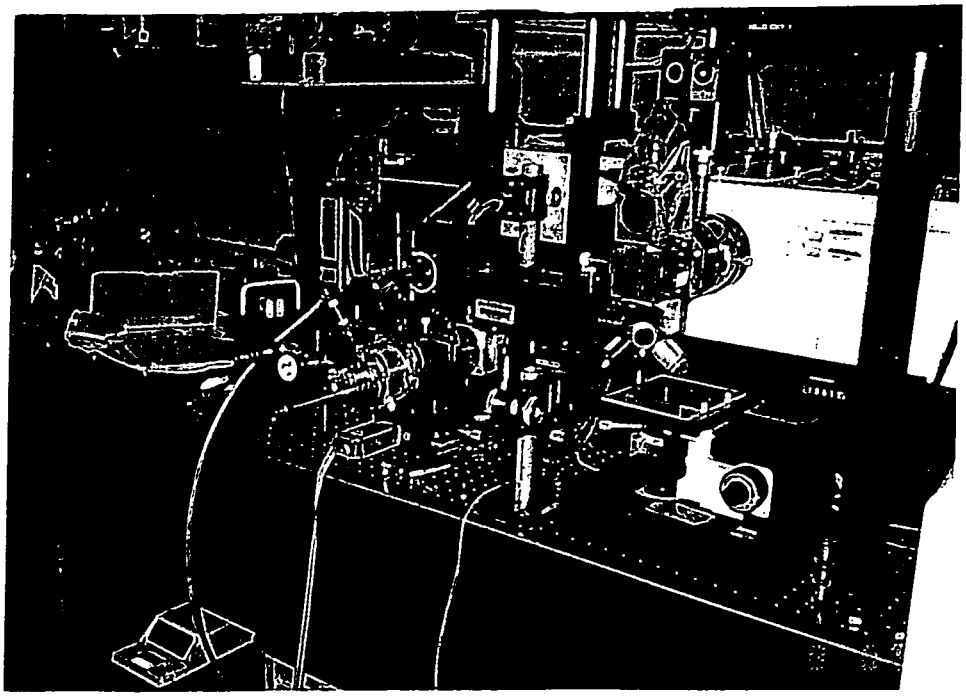

PHOTO 54:

LASER WELDER DEV. LAB
ROOM 231

PHOTO 55:

SPECTROSCOPY EQUIPMENT
ROOM 231

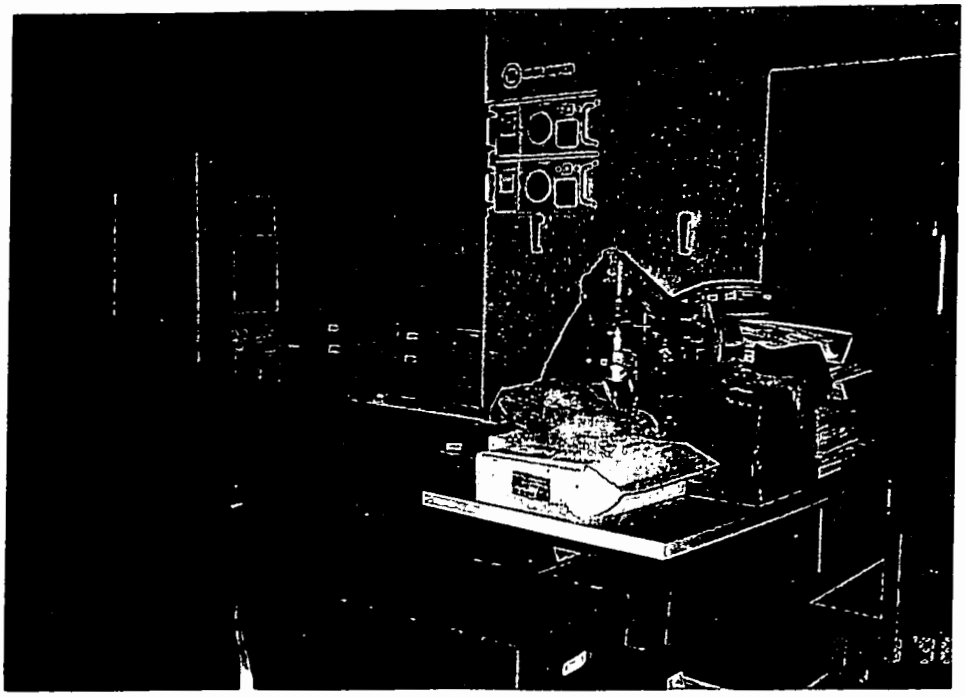

PHOTO 56:

30-FOOT ION SEPARATOR
ROOM 245

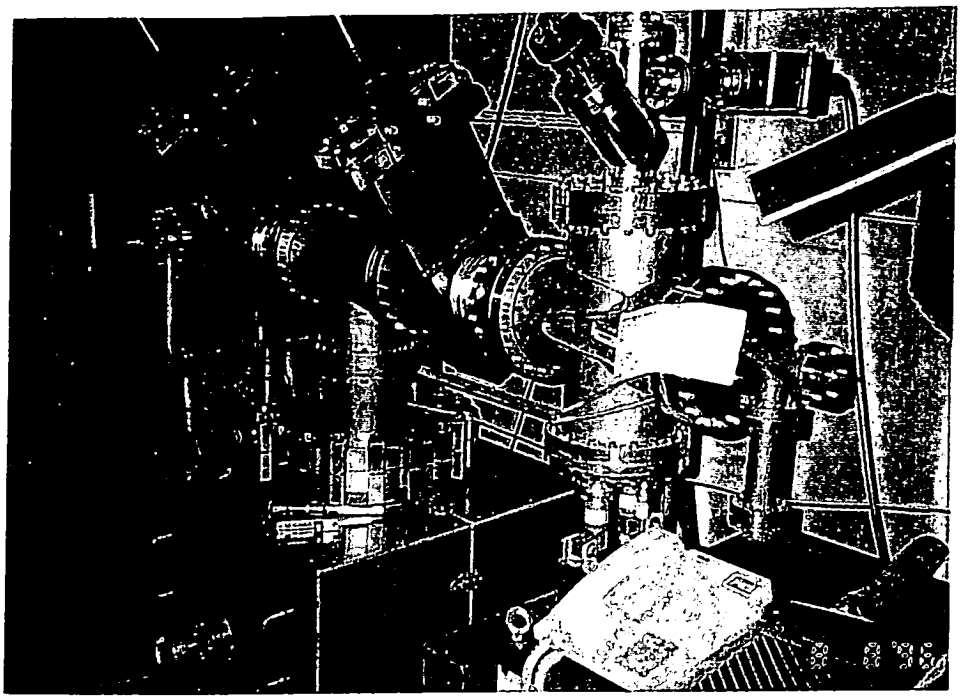

PHOTO 57:

SMALLER ION SEPARATOR
ROOM 245

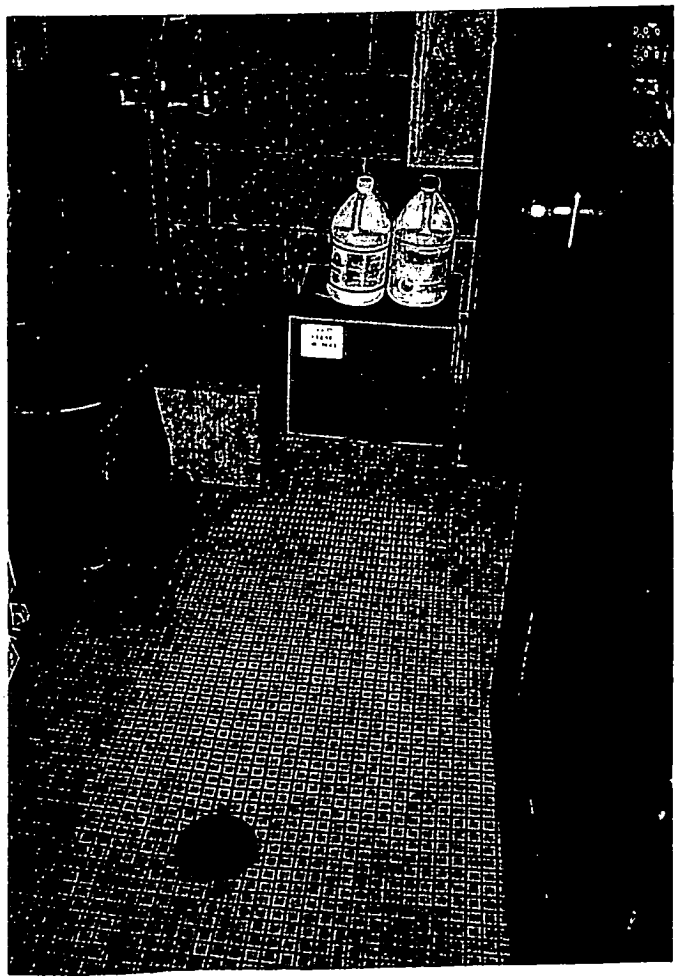

PHOTO 58:

JANITOR'S CLOSET
ROOM 254

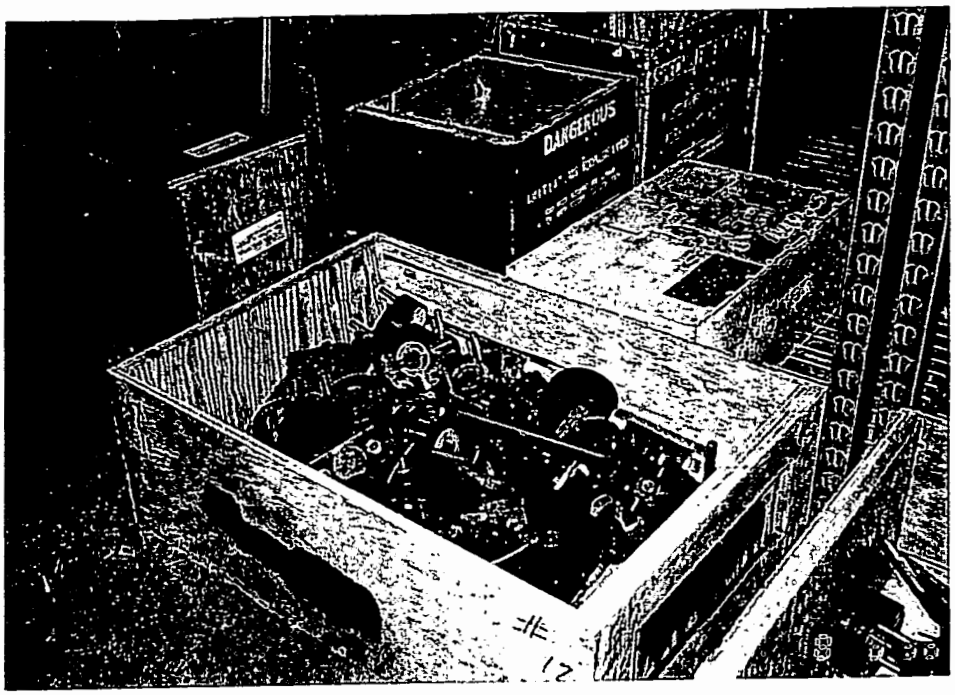

PHOTO 59:

METAL PARTS IN WAREHOUSE
WEST DOCK
BUILDING DS

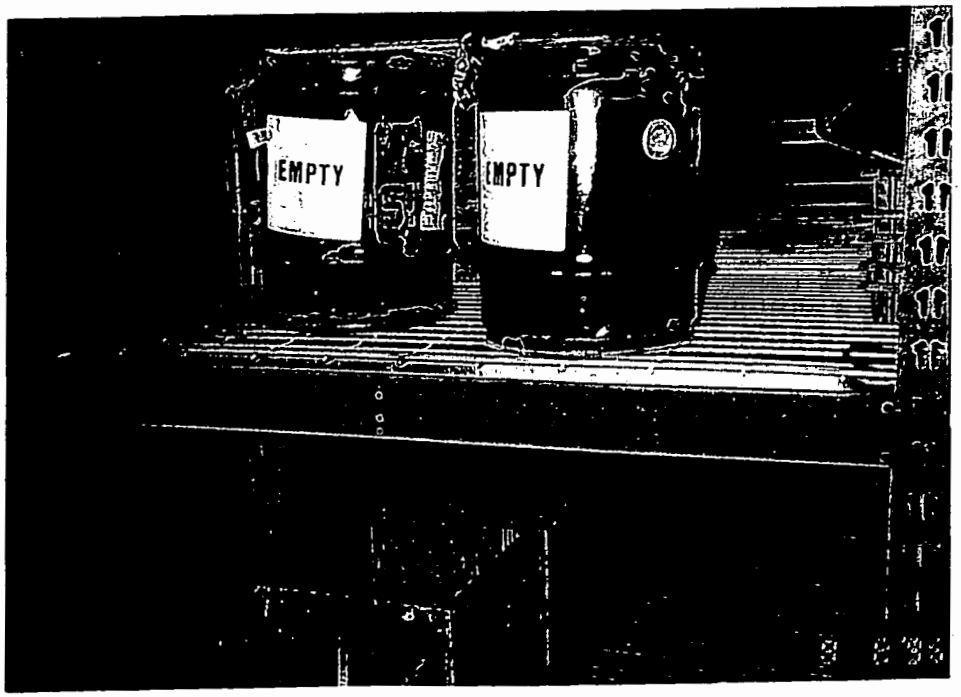

PHOTO 60:

EMPTY PYROTECHNIC WASTE
CANS IN WAREHOUSE
WEST DOCK, BUILDING DS

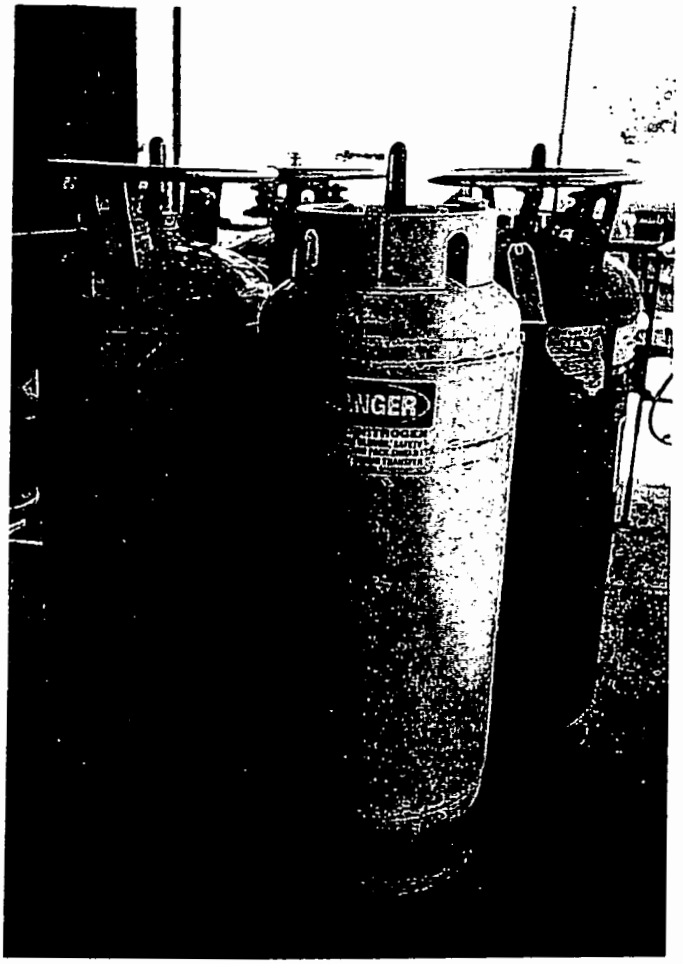

PHOTO 61:

NITROGEN DEWARS, WEST DOCK
BUILDING DS

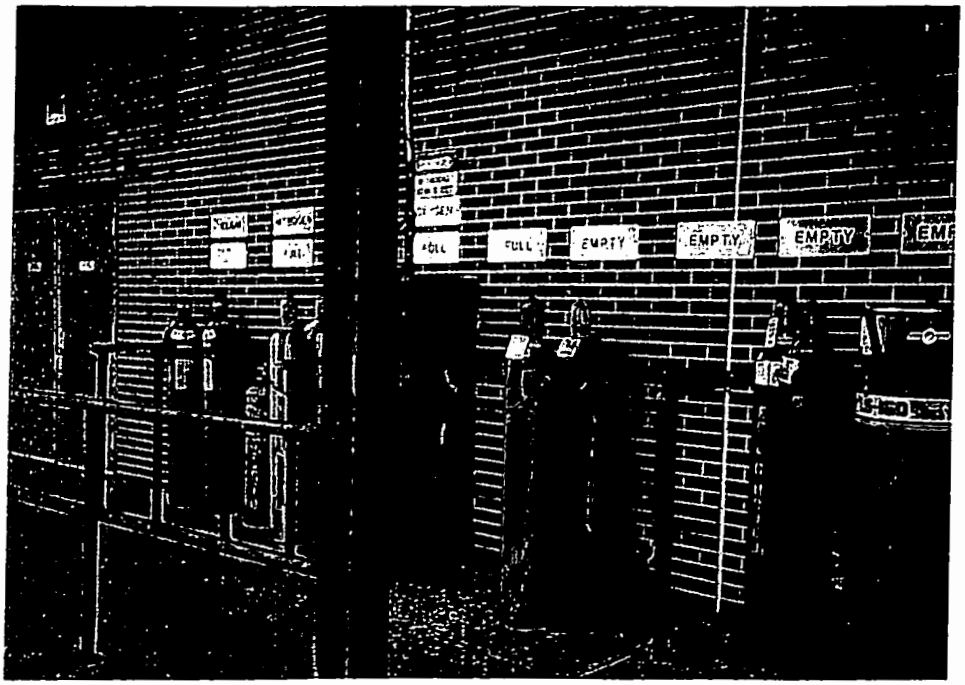

PHOTO 62:

CYLINDER STORAGE
WEST DOCK, BUILDING DS

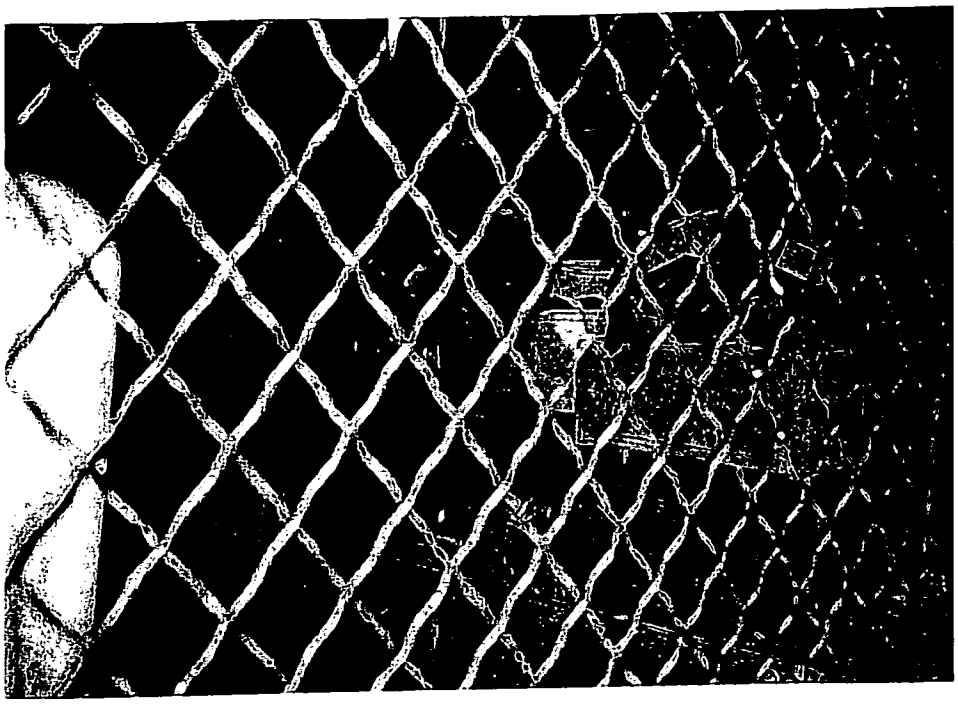

PHOTO 63:

VACUUM PUMP OIL IN TOOL CRIB
WEST DOCK, BUILDING DS

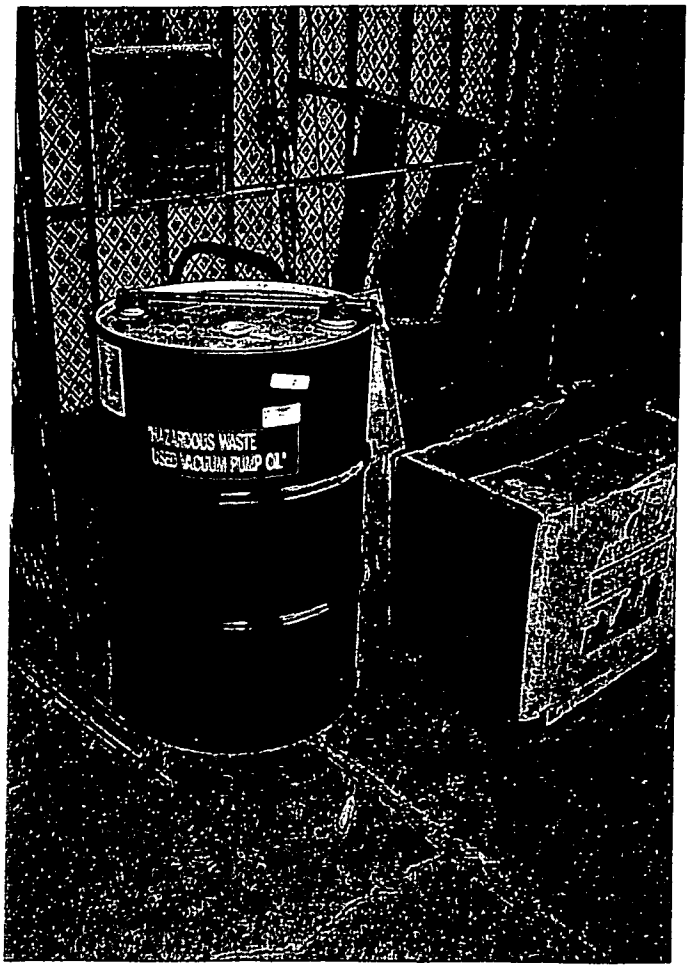

PHOTO 64:

VACUUM PUMP WASTE OIL DRUM
WEST DOCK, BUILDING DS

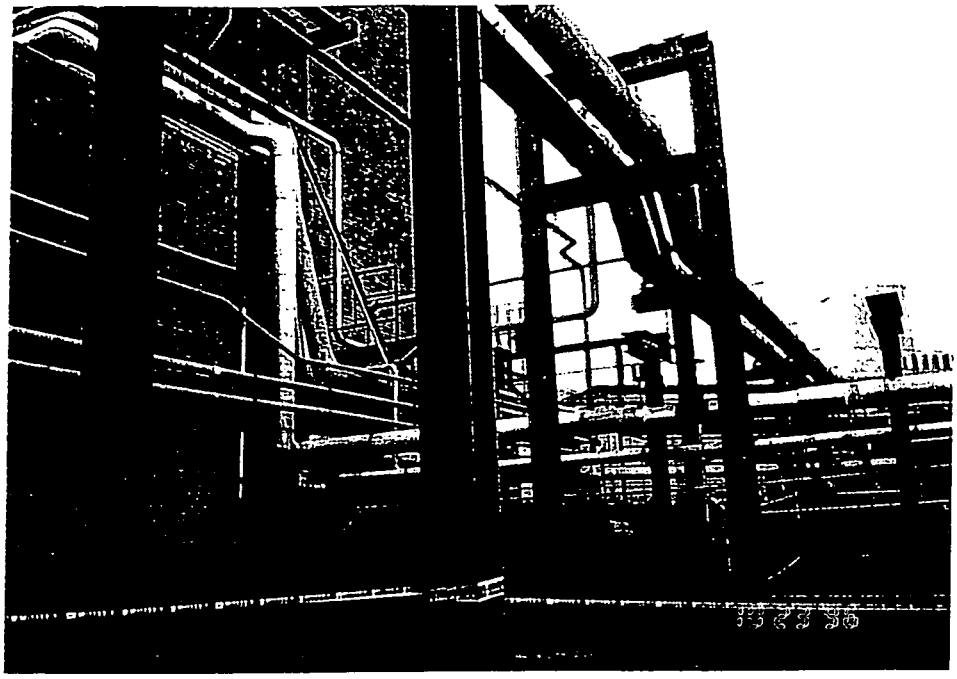

PHOTO 65:

STEAM AND CHILLER PIPES
AT EAST END OF BUILDING DS

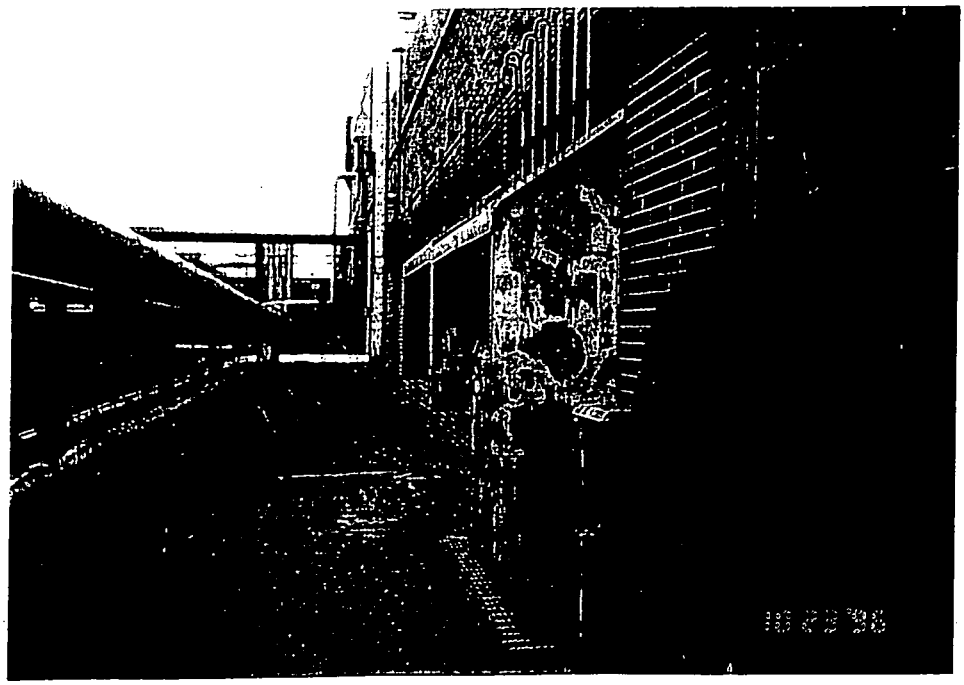

PHOTO 66:

SOLVENT LINES SUSPENDED ON SOUTH
WALL OF BUILDING DS

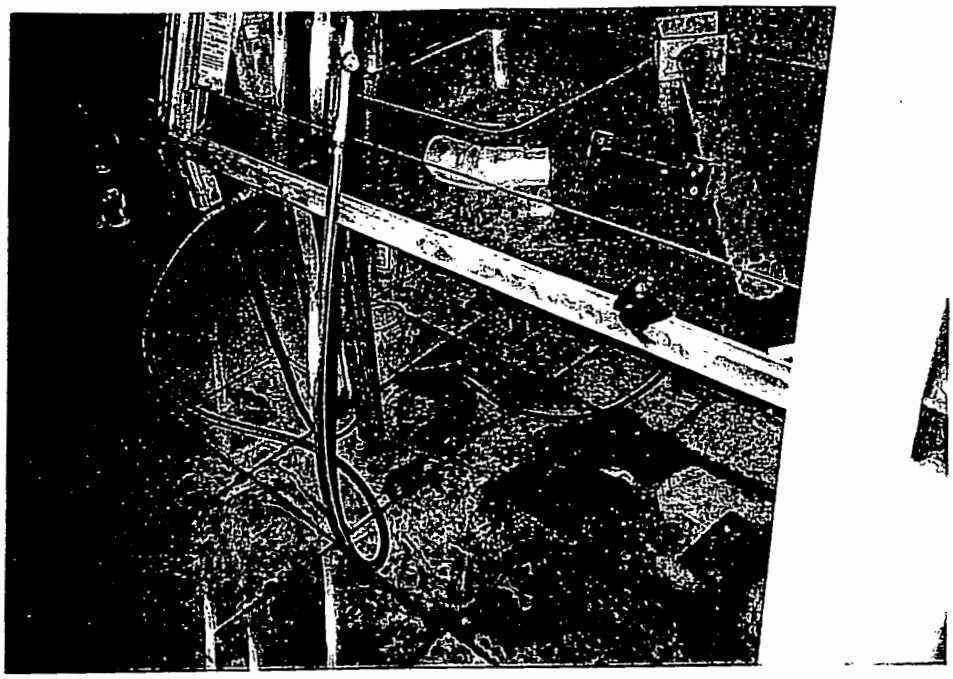

PHOTO 67:

STAINING UNDER SOLVENT
HOOD
ROOM 125

PHOTO 68:

STAINING UNDER TABLE
STAR CITY
ROOM 122

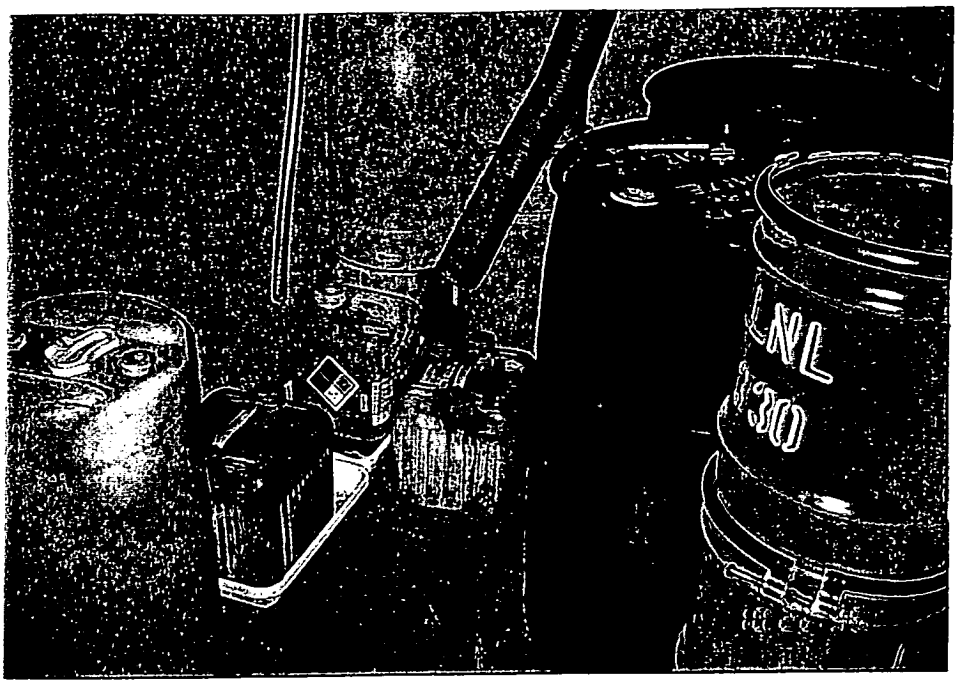

PHOTO 69:

CHEMICAL STORAGE
STAR CITY
ROOM 126A

PHOTO 70:

MANHOLE AND PEELING PAINT
IN ROOM 219

PHOTO 71:

SINK CABINET (LEFT) OVER
RAISED DAIS WITH METAL COVER
ROOM 208B

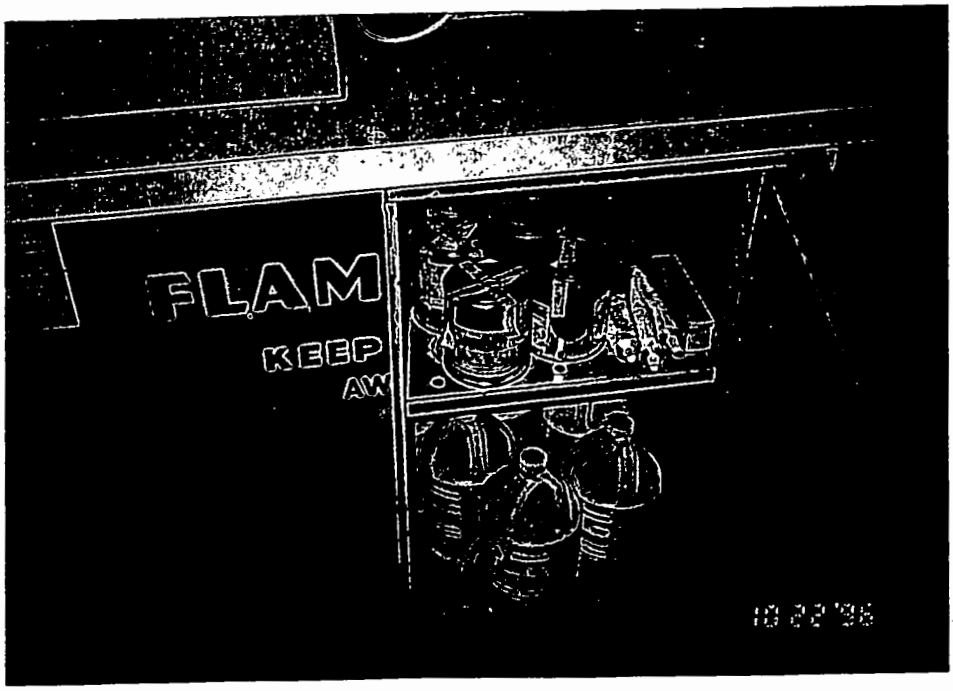

PHOTO 72:

FLAMMABLE CABINET
IN ROOM 118

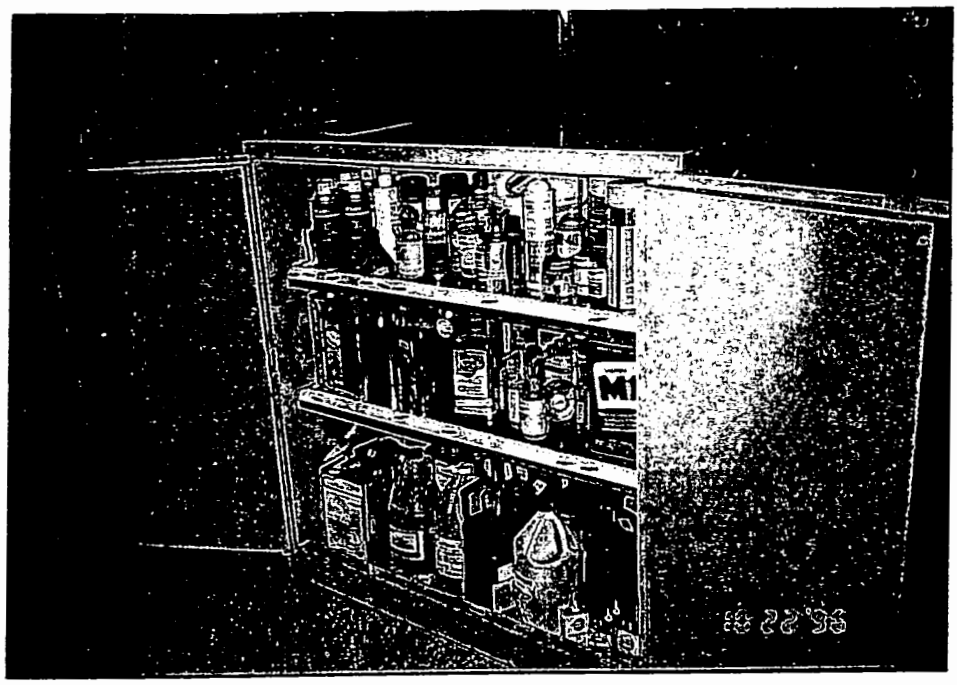

PHOTO 73:

FLAMMABLE CABINET
DIMENSION LAB
ROOM 103

PHOTO 74:

CHEMICAL STORAGE
ROOM 135B

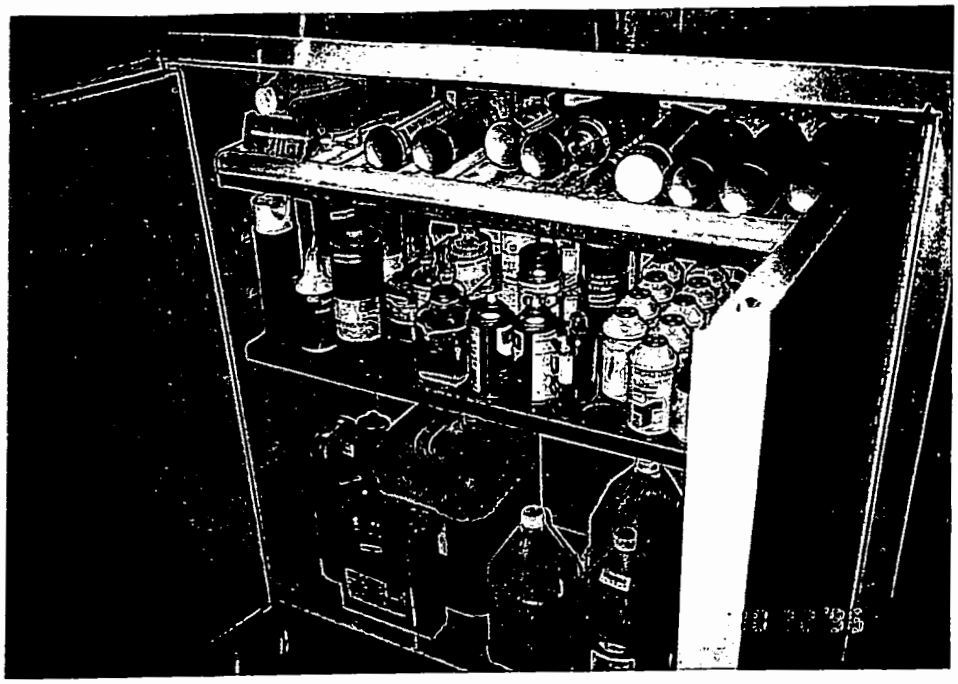

PHOTO 75:

FLAMMABLE LAB
ROOM 135

PHOTO 76:

EXAMPLE OF SIZE OF CHEMICALS
INCLUDING SOLVENT AND
MERCURY - ROOM 134

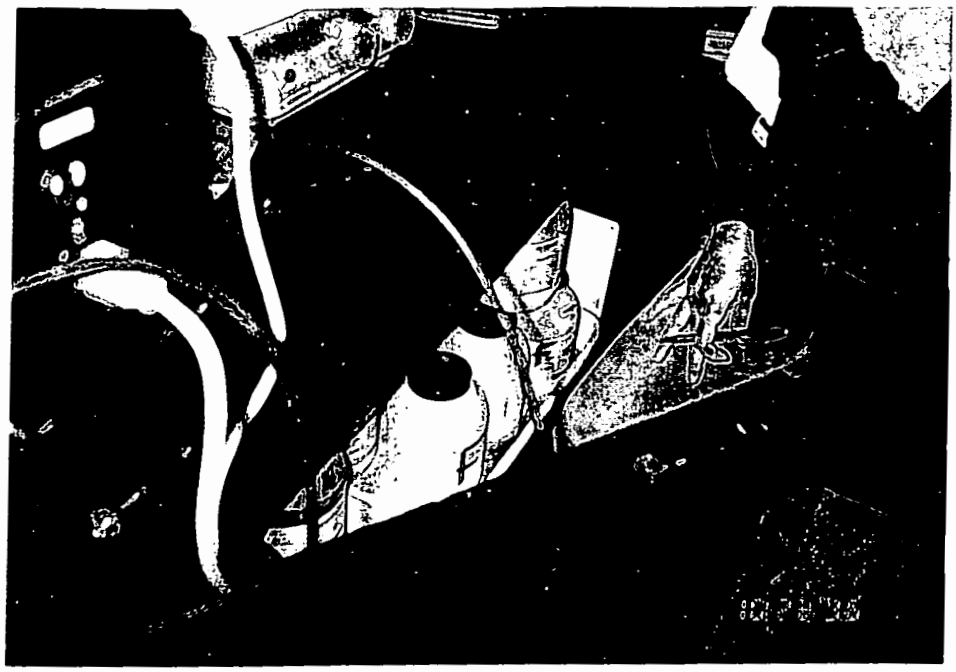

PHOTO 77:

FUME HOOD IN
ROOM 124

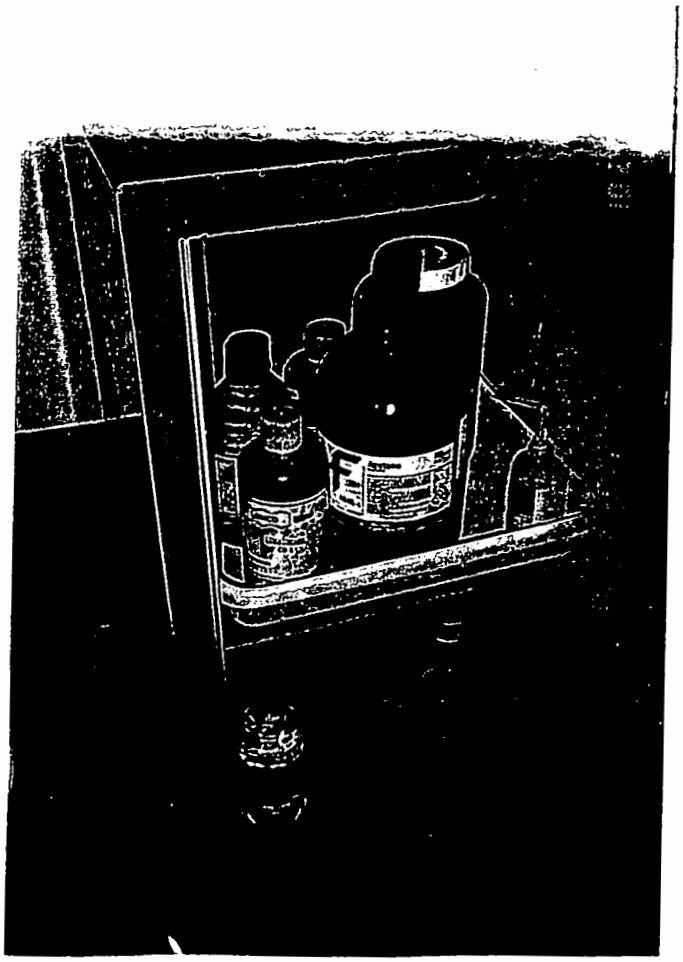

PHOTO 78:

FLAMMABLE CABINET
IN ROOM 122

EXHIBIT C

EDR REGULATORY DATABASE SEARCH

The EDR-Radius Map
with GeoCheck™

US Dept.-Energy Mound Facility
Mound Road
Miamisburg, OH 45343

Inquiry Number: 141429.1s

October 23, 1996

Environmental Data Resources, Inc

Creators of Toxicheck®

The Source For Environmental Risk Management Data

3530 Post Road
Southport, Connecticut 06490

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802

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EPA Waste Codes	A6
Government Records Searched / Data Currency Tracking Addendum	A7

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Disclaimer

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc. (EDR). The search met the specific requirements of ASTM Standard Practice for Environmental Site Assessments, E 1527-94, or custom distances requested by the user.

The address of the subject property for which the search was intended is:

MOUND ROAD
MIAMISBURG, OH 45343

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the subject property or within the ASTM E 1527-94 search radius around the subject property for the following Databases:

Delisted NPL:	NPL Deletions
RCRIS-TSD:	Resource Conservation and Recovery Information System
CERC-NFRAP:	Comprehensive Environmental Response, Compensation, and Liability Information System
CORRACTS:	Corrective Action Report
SWF/LF:	Licensed Solid Waste Facilities
RAATS:	RCRA Administrative Action Tracking System
RCRIS-SQG:	Resource Conservation and Recovery Information System
RCRIS-LQG:	Resource Conservation and Recovery Information System
HMIRS:	Hazardous Materials Information Reporting System
PADS:	PCB Activity Database System
ERNS:	Emergency Response Notification System
NPL Liens:	Federal Superfund Liens
TSCA:	Toxic Substances Control Act
MLTS:	Material Licensing Tracking System
RODS:	Records Of Decision
CONSENT:	Superfund (CERCLA) Consent Decrees
OH Spills:	Includes Reported Incidents, Spills or Releases to The Environment
Coal Gas:	Former Manufactured gas (Coal Gas) Sites.

Unmapped (orphan) sites are not considered in the foregoing analysis.

Search Results:

Search results for the subject property and the search radius, are listed below:

Subject Property:

The subject property was identified in the following government records. For more information on this property see page 9 of the attached EDR Radius Map report:

Site	Database(s)	EPA ID
US DOE MOUND PLANT MOUND RD MIAMISBURG, OH 45342	CERCLIS FINDS NPL TRIS LUST	OH6890008984

EXECUTIVE SUMMARY

Surrounding Properties:

Elevations have been determined from the USGS 1 degree Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. EDR's definition of a site with an elevation equal to the subject property includes a tolerance of -10 feet. Sites with an elevation equal to or higher than the subject property have been differentiated below from sites with an elevation lower than the subject property (by more than 10 feet). Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

SHWS: The State Hazardous Waste Sites records are the states' equivalent to CERCLIS. These sites may or may not already by listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. The data comes from the Ohio Environmental Protection Agency's Master Sites List.

A review of the State Haz. Waste list, as provided by EDR, and dated 12/31/1995 has revealed that there is 1 State Haz. Waste site within approximately 1 Mile of the subject property.

Lower Elevation	Address	Map ID	Page
MIAMISBURG WELL FIELD / UNK SO	302 S RIVERVIEW AVE	7	17

LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data comes from the Department of Commerce Division of State Fire Marshal's List of Reported Petroleum Underground Storage Tank Release Incidents.

A review of the LUST list, as provided by EDR, and dated 04/01/1996 has revealed that there are 5 LUST sites within approximately 0.5 Miles of the subject property.

Lower Elevation	Address	Map ID	Page
CG&R	901 S MAIN ST	A1	11
DJ CERAMICS	611 S MAIN ST	3	13
RICHARD CHURCH SR ESTATE	1009 S MAIN ST	4	14
TECHNICOTE INC	***222 MOUND AVE***	***5***	***15***
JACKS MOBILE	51 CENTER ST	6	16

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data comes from the Department of Commerce Division of State Fire Marshal's Facility File.

A review of the UST list, as provided by EDR, and dated 07/16/1996 has revealed that there is 1 UST site within approximately 0.25 Miles of the subject property.

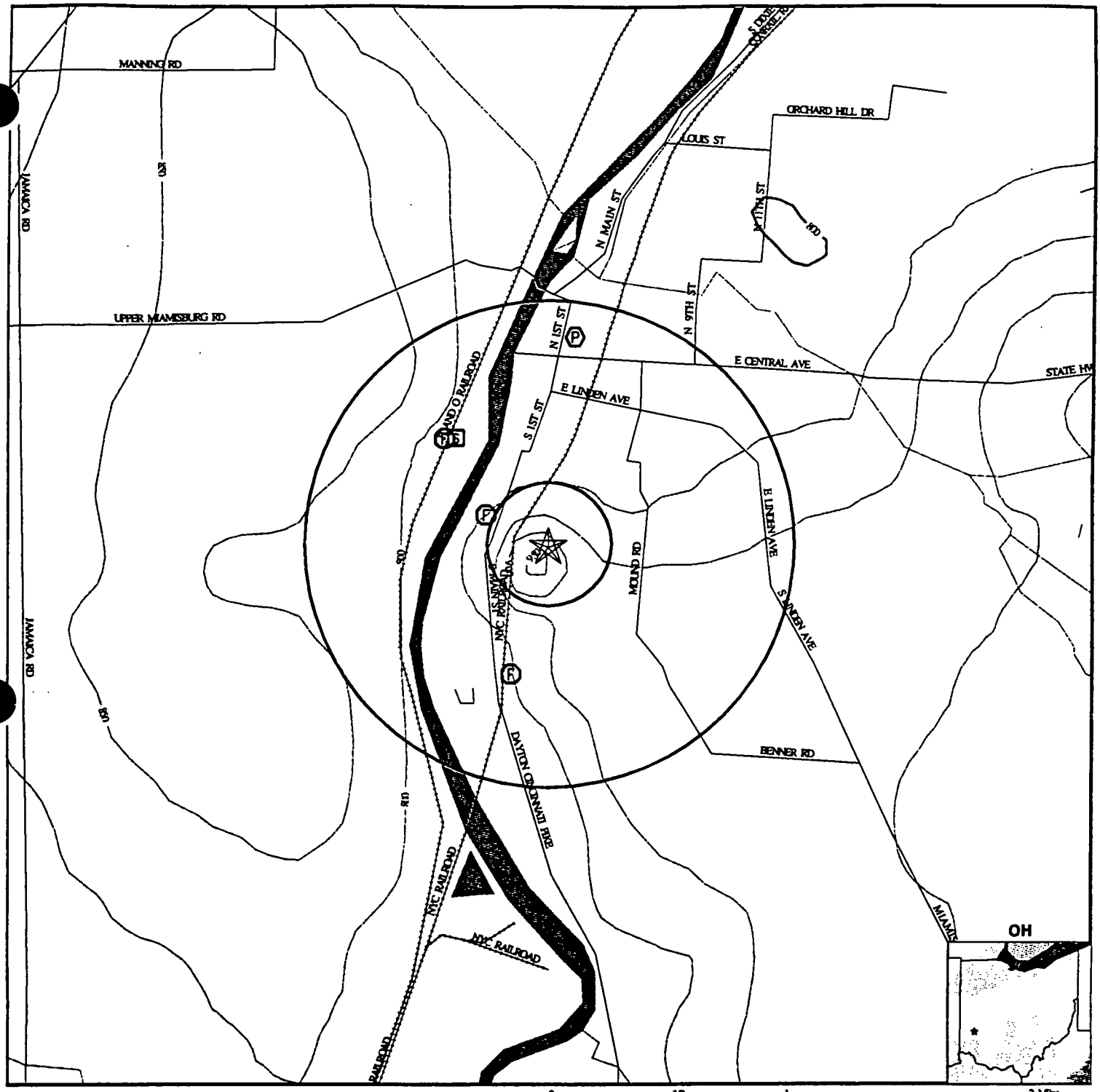
Lower Elevation	Address	Map ID	Page
C G & R	901 S MAIN ST	A2	12

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped:

Site Name	Database(s)
US DOE MOUND FACILITY	PADS,RCRIS-LQG,RCRIS-TSD CORRACTS,State Haz. Waste
MIAMI TWP SERVICE DEPT	LUST
US DEPT OF ENERGY	LUST
MOUND FACILITY	LUST
MOUND PLANT (DOE)	LUST
AT&T	LUST
MIAMI TOWNSHIP SERVICE DEPT	UST
U.S. DEPT OF ENERGY	UST
AT&T	UST
MOUND FLEXIBLE CIRCUITS CORPORATION	RCRIS-SQG
EG & G STAR CITY INC	RCRIS-SQG
MONARCH MARKING SYSTEMS INC	FINDS,RCRIS-LQG
MOUND PLANT MOUND RD.	ERNS
MOUND PLANT 1 MOUND AVE	ERNS
US DEPT OF ENERGY MOUND PLT	FINDS
US DOE MOUND PLT	FINDS

TOPOGRAPHIC MAP - 141429.1s - HOK/K Industrial



Source: US Geological Survey 1-Degree Digital Elevation Model
Compiled 09/15/92

- Major Roads
- Contour lines (25 foot interval unless otherwise shown)
- Waterways
- Earthquake epicenter, Richter 5 or greater.
- (F)(S) - Closest well according to (F)ederal or (S)tate database in quadrant.
- (P) - Closest public water supply well.

TARGET PROPERTY:	US Dept.-Energy Mound Facility	CUSTOMER:	HOK/K Industrial
ADDRESS:	Mound Road	CONTACT:	Nicolas Dionne
CITY/STATE/ZIP:	Miamisburg OH 45343	INQUIRY #:	141429.1s
LAT/LONG:	39.6308 / 84.2886	DATE:	October 23, 1996 5:20 pm

GEOCHECK VERSION 2.1
SUMMARY

GEOLOGIC AGE IDENTIFICATION†

Geologic Code:	O3
Era:	Paleozoic
System:	Ordovician
Series:	Upper Ordovician (Cincinnatian)

ROCK STRATIGRAPHIC UNIT†

Category:	Stratified Sequence

GROUNDWATER FLOW INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, including well data collected on nearby properties, regional groundwater flow information (from deep aquifers), or surface topography.‡

General Topographic Gradient: General North
General Hydrogeologic Gradient: No hydrogeologic data available.

USGS TOPOGRAPHIC MAP ASSOCIATED WITH THIS SITE

Target Property: 2439084-F3 MIAMISBURG, OH

FEDERAL DATABASE WELL INFORMATION

WELL QUADRANT	DISTANCE FROM TP	LITHOLOGY	DEPTH TO WATER TABLE
Northern	1/2 - 1 Mile	Colluvium	13 ft.
Southern	1/2 - 1 Mile	Outwash	Not Reported
Western	1/4 - 1/2 Mile	Not Reported	24 ft.

STATE DATABASE WELL INFORMATION

WELL QUADRANT	DISTANCE FROM TP
Northern	1/2 - 1 Mile
Southern	>2 Miles

PUBLIC WATER SUPPLY SYSTEM INFORMATION (EPA-FRDS)

Searched by Nearest Well.
NOTE: PWS System location is not always the same as well location.

PWS Name: MIAMI CRUISE-INN CONCESSION
MANAGER
BOX 103,STATE ROUTE 25
MIAMISBURG, OH 45342
Location Relative to TP: 1/2 - 1 Mile North
Well currently has or has had major violation(s): No

† Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

‡ U.S. EPA Ground Water Handbook, Vol I: Ground Water and Contamination, Office of Research and development EPA/625/6-90/016a,Chapter 4, page 78, September 1990.

GEOCHECK VERSION 2.1
SUMMARY

AREA RADON INFORMATION

MONTGOMERY COUNTY, OH

Number of sites tested: 35

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	2.966 pCi/L	77%	23%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	5.963 pCi/L	67%	27%	7%

OVERVIEW MAP - 141429.1s - HOK/K Industrial

★ - Indicates TARGET PROPERTY.

▲ - Indicates sites at elevations higher than or equal to the target property.

◆ - Indicates sites at elevations lower than the target property.

- Coal Gasification Sites (If requested)

- National Priority List Sites

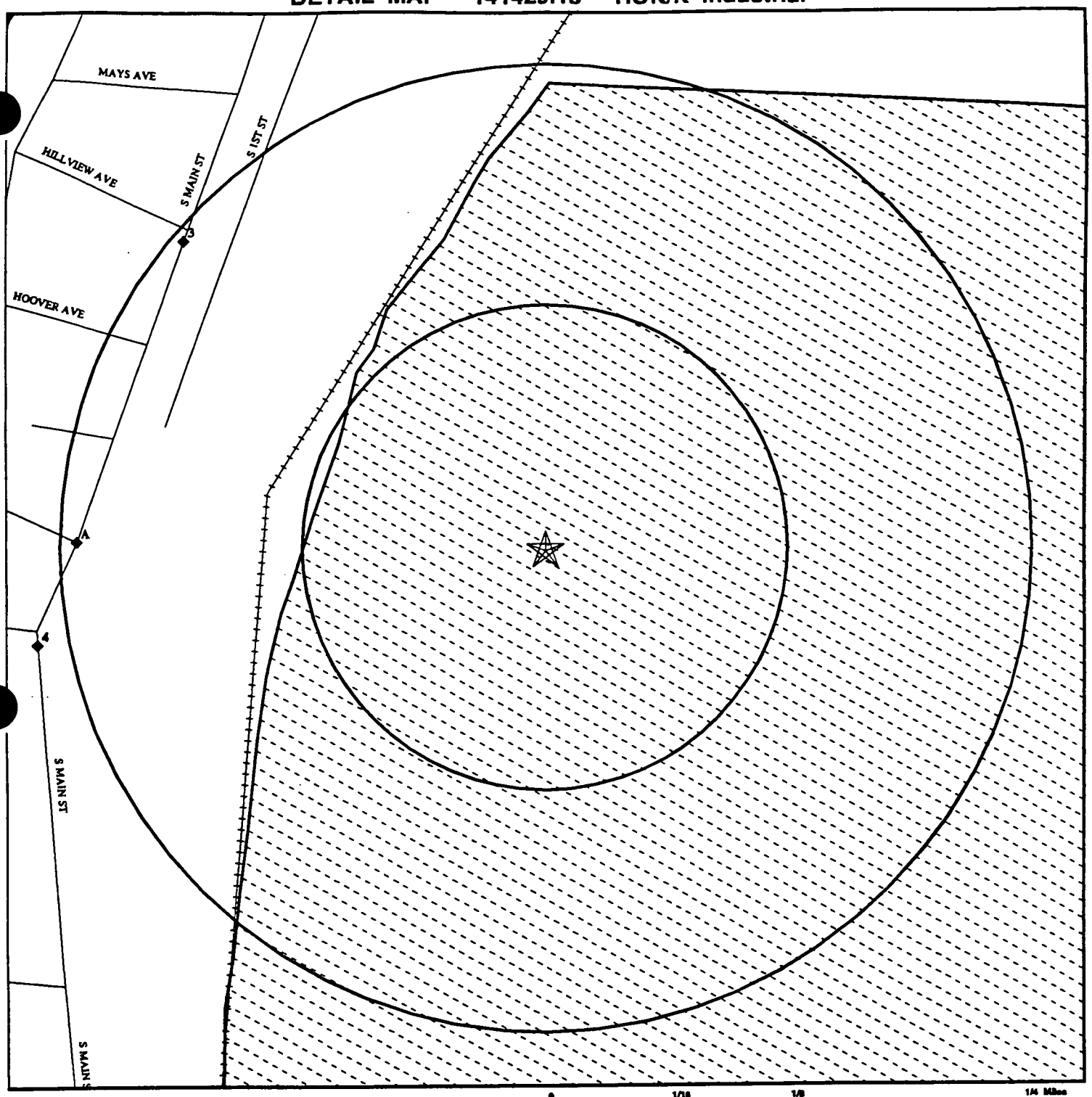
- Landfill Sites

- Power transmission lines (USGS DLG, 1993)

- Oil & Gas pipelines (USGS DLG, 1993)

TARGET PROPERTY:	US Dept.-Energy Mound Facility	CUSTOMER:	HOK/K Industrial
ADDRESS:	Mound Road	CONTACT:	Nicolas Dionne
CITY/STATE/ZIP:	Miamisburg OH 45343	INQUIRY #:	141429.1s
LAT/LONG:	39.6308 / 84.2886	DATE:	October 23, 1996 5:18 pm

DETAIL MAP - 141429.1s - HOK/K Industrial



★ - Indicates TARGET PROPERTY.

▲ - Indicates sites at elevations higher than or equal to the target property.

● - Indicates sites at elevations lower than the target property.

- Coal Gasification Sites (if requested)

- Sensitive Receptors

- National Priority List Sites

- Landfill Sites

- Power transmission lines (USGS DLG, 1993)

- Oil & Gas pipelines (USGS DLG, 1993)

TARGET PROPERTY:	US Dept.-Energy Mound Facility	CUSTOMER:	HOK/K Industrial
ADDRESS:	Mound Road	CONTACT:	Nicolas Dionne
CITY/STATE/ZIP:	Miamisburg OH 45343	INQUIRY #:	141429.1s
LAT/LONG:	39.6308 / 84.2886	DATE:	October 23, 1996 5:19 pm

MAP FINDINGS SUMMARY SHOWING ALL SITES

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
NPL	X	1.000	0	0	0	0	NR	0
Delisted NPL		TP	NR	NR	NR	NR	NR	0
RCRIS-TSD		1.000	0	0	0	0	NR	0
State Haz. Waste		1.000	0	0	0	1	NR	1
CERCLIS	X	0.500	0	0	0	NR	NR	0
CERC-NFRAP		TP	NR	NR	NR	NR	NR	0
CORRACTS		1.000	0	0	0	0	NR	0
State Landfill		0.500	0	0	0	NR	NR	0
LUST	X	0.500	0	2	3	NR	NR	5
UST		0.250	0	1	NR	NR	NR	1
RAATS		TP	NR	NR	NR	NR	NR	0
RCRIS Sm. Quan. Gen.		0.250	0	0	NR	NR	NR	0
RCRIS Lg. Quan. Gen.		0.250	0	0	NR	NR	NR	0
HMIRS		TP	NR	NR	NR	NR	NR	0
PADS		TP	NR	NR	NR	NR	NR	0
ERNS		TP	NR	NR	NR	NR	NR	0
FINDS	X	TP	NR	NR	NR	NR	NR	0
TRIS	X	TP	NR	NR	NR	NR	NR	0
NPL Liens		TP	NR	NR	NR	NR	NR	0
TSCA		TP	NR	NR	NR	NR	NR	0
MLTS		TP	NR	NR	NR	NR	NR	0
ROD		1.000	0	0	0	0	NR	0
CONSENT		1.000	0	0	0	0	NR	0
OH Spills		TP	NR	NR	NR	NR	NR	0
Coal Gas		1.000	0	0	0	0	NR	0

TP = Target Property

NR = Not Requested at this Search Distance

* Sites may be listed in more than one database

MAP FINDINGS SUMMARY SHOWING
ONLY SITES HIGHER THAN OR THE SAME ELEVATION AS TP

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
NPL	X	1.000	0	0	0	0	NR	0
Delisted NPL		TP	NR	NR	NR	NR	NR	0
RCRIS-TSD		1.000	0	0	0	0	NR	0
State Haz. Waste		1.000	0	0	0	0	NR	0
CERCLIS	X	0.500	0	0	0	NR	NR	0
CERC-NFRAP		TP	NR	NR	NR	NR	NR	0
CORRACTS		1.000	0	0	0	0	NR	0
State Landfill		0.500	0	0	0	NR	NR	0
LUST	X	0.500	0	0	0	NR	NR	0
UST		0.250	0	0	NR	NR	NR	0
RAATS		TP	NR	NR	NR	NR	NR	0
RCRIS Sm. Quan. Gen.		0.250	0	0	NR	NR	NR	0
RCRIS Lg. Quan. Gen.		0.250	0	0	NR	NR	NR	0
HMIRS		TP	NR	NR	NR	NR	NR	0
PADS		TP	NR	NR	NR	NR	NR	0
ERNS		TP	NR	NR	NR	NR	NR	0
FINDS	X	TP	NR	NR	NR	NR	NR	0
TRIS	X	TP	NR	NR	NR	NR	NR	0
NPL Liens		TP	NR	NR	NR	NR	NR	0
TSCA		TP	NR	NR	NR	NR	NR	0
MLTS		TP	NR	NR	NR	NR	NR	0
ROD		1.000	0	0	0	0	NR	0
CONSENT		1.000	0	0	0	0	NR	0
OH Spills		TP	NR	NR	NR	NR	NR	0
Coal Gas		1.000	0	0	0	0	NR	0

TP = Target Property

NR = Not Requested at this Search Distance

* Sites may be listed in more than one database

Map ID
Direction
Distance
Elevation | Site | Database(s) | EDR ID Number / EPA ID Number

Coal Gas Site Search: No site was found in a search of Real Property Scan's ENVIROHAZ database.

NPL **US DOE MOUND PLANT** **CERCLIS** *1000190772*
Region **MOUND RD** **FINDS** **OH6890008984**
Target Property **MIAMISBURG, OH 45342** **NPL**
TRIS
LUST

CERCLIS Classification Data:

Site Incident Category:	Not reported	Federal Facility:	YES
Ownership Status:	FEDERALLY OWNED	NPL Status:	CURRENTLY ON THE FINAL NPL
EPA Notes:	Not reported		

CERCLIS Assessment History:

Assessment:	DISCOVERY	Completed:	11/01/1980
Assessment:	PRELIMINARY ASSESSMENT	Completed:	03/25/1986
Assessment:	SCREENING SITE INSPECTION	Completed:	07/14/1989
Assessment:	HAZARD RANKING DETERMINED	Completed:	07/14/1989
Assessment:	PROPOSAL TO NPL	Completed:	07/14/1989
Assessment:	FINAL LISTING ON NPL	Completed:	11/24/1989
Assessment:	TECHNICAL ASSISTANCE	Completed:	Not reported
Assessment:	TECHNICAL ASSISTANCE	Completed:	Not reported
Assessment:	REMOVAL ACTION	Completed:	Not reported
Assessment:	COMBINED RI/FS	Completed:	06/12/1995
Assessment:	REMEDIAL ACTION	Completed:	Not reported
Assessment:	REMEDIAL DESIGN	Completed:	Not reported
Assessment:	RECORD OF DECISION	Completed:	06/12/1995
Assessment:	COMBINED RI/FS	Completed:	Not reported
Assessment:	RECORD OF DECISION	Completed:	Not reported
Assessment:	COMBINED RI/FS	Completed:	Not reported
Assessment:	RECORD OF DECISION	Completed:	Not reported
Assessment:	COMBINED RI/FS	Completed:	Not reported
Assessment:	RECORD OF DECISION	Completed:	Not reported
Assessment:	COMBINED RI/FS	Completed:	Not reported
Assessment:	RECORD OF DECISION	Completed:	Not reported
Assessment:	COMBINED RI/FS	Completed:	Not reported
Assessment:	RECORD OF DECISION	Completed:	Not reported

CERCLIS Site Status:
This site is currently under investigation by the government to assess the extent of further action

CERCLIS Alias Name(s):
US DOE MOUND FACIL
MOUND PLANT (USDOE)

US DOE MOUND PLANT (Continued) **1000190772**

NPL:

ID:	05OH073
Date Listed:	11/21/89 (FINAL)
EPA/ID:	Not reported
Haz. Rank Score:	34.61
Status:	LISTED ON NPL
Rank:	Not reported
Group:	15
Ownership:	Federal
Ownership:	Govt. Owned, Contract. Oper.
Permit:	NPDES
Permit:	Air
Permit:	RCRA Interim Status
Permit:	Radioactive
Site Activities:	Landfill, Comm./Indus.
Site Activities:	Spill
Site Activities:	Tank, below ground
Site Condition:	Contam. Drinking Water
Waste Type:	Metals
Waste Type:	Radioactive Substances

Contaminant:	Media Affected:
CALCIUM CYANIDE	Not reported
COPPER CYANIDE	Not reported
PLUTONIUM AND COMPOUNDS, NOS (PU	Not reported
URANIUM AND COMPOUNDS, NOS (U)	Not reported
PLUTONIUM 238	Surface Water

Distance to nearest Population:	Not reported
Population within a 1 Mile Radius:	Not reported
Population within a 2 Mile Radius:	Not reported
Population within a 4 Mile Radius:	Not reported
Vertical Distance to Aquifer:	21 Feet to 75 Feet
Ground Water Use:	Used as Drinking Water, Alternative Source not Available
Distance to nearest Surface Water:	Not reported

Other Pertinent Environmental Activity Identified at Site:
facility with active water discharge permit.
facility which is monitored or permitted for air emissions under the Clean Air Act.
civil judicial and administrative enforcement case against facility.
federal facility that has submitted specific environmental project budget plans.
facility is a PCB generator, storer, transporter or permitted disposer.

US DOE MOUND PLANT (Continued) 1000190772

LUST:

Facility ID:	570630	Incident ID:	579108400
Report No:	5791084	Facility Track:	0
Facility Tel:	513-865-4020	Responsibility:	-0-
Owner:	US DEPT OF ENERGY -0- -0-, OH -0- -0-		
Operator:	-0- -0- -0-, OH -0- -0-		
Inspector:	-0-	Revised Date:	07/16/91
Fiscal Track:	F900	Coordinator:	Central Office Corrective Actions
Facility Status:	Initial Corrective Action Program Report		
Classification:	Known suspected or confirmed source and responsible person is voluntarily, or under an informal enforcement action, proceeding with investigation of corrective actions.		
Trust Fund:	Incident eligible for LTF oversight and/or spending - a suspected or confirmed release of petroleum from a regulated UST.		
Emerg Respnse:	2	Response By:	-0-
Vacant:	-, -0-	County Num:	57
Authorized By:	HODNETT	Authorize Date:	07/12/91
Remarks:	0		
Summary:	-0-		
Added Date:	12/18/89	Entry By:	UNGER
Response Srch:	-0-	Priority:	2

Facility ID:	-0-	Incident ID:	579108402
Report No:	5791084	Facility Track:	2
Facility Tel:	-0-	Responsibility:	-0-
Owner:	-0- -0- -0-, OH -0- -0-		
Operator:	-0- -0- -0-, OH -0- -0-		
Inspector:	-0-	Revised Date:	11/15/94
Fiscal Track:	F900	Coordinator:	Central Office Closure
Facility Status:	Reported		
Classification:	Known suspected or confirmed source and responsible person is voluntarily, or under an informal enforcement action, proceeding with investigation of corrective actions.		
Trust Fund:	Other hazardous substance or hazardous material related incident.		
Emerg Respnse:	2	Response By:	-0-
Vacant:	-, -0-	County Num:	57
Authorized By:	MCCLURE	Authorize Date:	11/14/94
Remarks:	-0-		
Summary:	-0-		
Added Date:	12/28/92	Entry By:	UNGER
Response Srch:	-0-	Priority:	2

A1
West
1/8-1/4
Lower

CG&R
901 S MAIN ST
MIAMISBURG, OH 45342

LUST **S101565590**
N/A

CG&R (Continued) **S101565590**

LUST:

Facility ID:	572444	Incident ID:	574126900
Report No:	5741269	Facility Track:	0
Facility Tel:	-0-	Responsibility:	-0-
Owner:	-0- -0- -0-, OH -0- -0-		
Operator:	-0- -0- -0-, OH -0- -0-		
Inspector:	-0-	Revised Date:	12/19/95
Fiscal Track:	FY94	Coordinator:	Central Office Closure
Facility Status:	No Further Action		
Classification:	Known suspected or confirmed source and responsible person is voluntarily, or under an informal enforcement action, proceeding with investigation of corrective actions.		
Trust Fund:	Closure of an underground storage tank.		
Emerg Respnse:	2	Response By:	-0-
Vacant:	-, -0-	County Num:	57
Authorized By:	MCCLURE	Authorize Date:	12/18/95
Remarks:	-0-		
Summary:	CLOS RPT RECD		
Added Date:	07/26/94	Entry By:	UNGER
Response Srch:	-0-	Priority:	2

A2 **C G & R** **UST** **U001964188**
West **901 S MAIN ST** **N/A**
1/8-1/4 **MIAMISBURG, OH 45342**
Lower

UST:

Facility ID:	0-572444	Tank ID:	1
Capacity:	2,000	Tank Status:	Remv
Tank Age:	32	Material:	Bare Steel
Product:	Gasoline		
Owner:	JAMES PECOCK 404 COURTLAND LAKELURE, NC 28746 County: Pennsylvania		
Piping Material:	Bare Steel	Facility Contact:	Not reported
Piping Type:	Not Marked	Telephone:	Not reported
Remed. Des. Tanks:	Not reported		
Remed. Des. Piping:	Not reported		

C G & R (Continued) U001964188

Facility ID:	0-572444	Tank ID:	2
Capacity:	3,000	Tank Status:	Remv
Tank Age:	32	Material:	Bare Steel
Product:	Gasoline		
Owner:	JAMES PECOCK 404 COURTLAND LAKELURE, NC 28746 County: Pennsylvania		
Piping Material:	Bare Steel	Facility Contact:	Not reported
Piping Type:	Not Marked	Telephone:	Not reported
Remed. Des. Tanks:	Not reported		
Remed. Des. Piping:	Not reported		

Facility ID:	0-572444	Tank ID:	3
Capacity:	3,000	Tank Status:	Remv
Tank Age:	32	Material:	Bare Steel
Product:	Gasoline		
Owner:	JAMES PECOCK 404 COURTLAND LAKELURE, NC 28746 County: Pennsylvania		
Piping Material:	Bare Steel	Facility Contact:	Not reported
Piping Type:	Not Marked	Telephone:	Not reported
Remed. Des. Tanks:	Not reported		
Remed. Des. Piping:	Not reported		

Facility ID:	0-572444	Tank ID:	4
Capacity:	550	Tank Status:	Remv
Tank Age:	32	Material:	Bare Steel
Product:	Used Oil		
Owner:	JAMES PECOCK 404 COURTLAND LAKELURE, NC 28746 County: Pennsylvania		
Piping Material:	Bare Steel	Facility Contact:	Not reported
Piping Type:	Not Marked	Telephone:	Not reported
Remed. Des. Tanks:	Not reported		
Remed. Des. Piping:	Not reported		

3
NW
1/8-1/4
Lower

DJ CERAMICS
611 S MAIN ST
MIAMISBURG, OH 45342

LUST S101424591
N/A

DJ CERAMICS (Continued) **S101424591**

LUST:

Facility ID:	-0-	Incident ID:	575048600
Report No:	5750486	Facility Track:	0
Facility Tel:	-0-	Responsibility:	-0-
Owner:	-0-		
	-0-		
	-0-, OH -0-		
	-0-		
Operator:	-0-		
	-0-		
	-0-, OH -0-		
	-0-		
Inspector:	-0-	Revised Date:	-0-
Fiscal Track:	FY95	Coordinator:	Central Office Closure
Facility Status:	Reported		
Classification:	Known suspected or confirmed source and responsible person is voluntarily, or under an informal enforcement action, proceeding with investigation of corrective actions.		
Trust Fund:	Closure of an underground storage tank.		
Emerg Respnse:	2	Response By:	-0-
Vacant:	-, -0-	County Num:	57
Authorized By:	GILL	Authorize Date:	04/20/95
Remarks:	-0-		
Summary:	-0-		
Added Date:	04/20/95	Entry By:	UNGER
Response Srch:	-0-	Priority:	2

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4 West 1/4-1/2 Lower **RICHARD CHURCH SR ESTATE** **LUST** **S101565323**
1009 S MAIN ST **N/A**
MIAMISBURG, OH 45342

LUST:

Facility ID:	571192	Incident ID:	570118000
Report No:	5701180	Facility Track:	0
Facility Tel:	-0-	Responsibility:	-0-
Owner:	Not reported		
	-0-		
	-0-, OH -0-		
	-0-		
Operator:	-0-		
	-0-		
	-0-, OH -0-		
	-0-		
Inspector:	-0-	Revised Date:	04/21/92
Fiscal Track:	F900	Coordinator:	Central Office Closure
Facility Status:	No Further Action		
Classification:	Known suspected or confirmed source and responsible person is voluntarily, or under an informal enforcement action, proceeding with investigation of corrective actions.		
Trust Fund:	Closure of an underground storage tank.		
Emerg Respnse:	2	Response By:	-0-
Vacant:	1, -0-	County Num:	57
Authorized By:	GILL	Authorize Date:	04/17/92
Remarks:	0		
Summary:	CLOS RPT RECD		
Added Date:	05/24/90	Entry By:	UNGER
Response Srch:	-0-	Priority:	2

Map ID / Direction / Distance / Elevation	Site	Database(s)	EDR ID Number / EPA ID Number
5 North 1/4-1/2 Lower	**TECHNICOTE INC** **222 MOUND AVE** **MIAMISBURG, OH 45342**	**RCRIS-SQG** **UST** **LUST**	**1000243045** **OHD980896468**

RCRIS:
Owner: TECHNICOTE
(312) 555-1212

Contact: TOM BLOSSER
(513) 859-4448

Waste	Quantity	Info Source
D001	.00000 (N)	Notification

(P) = Pounds , (K) = Kilograms , (M) = Metric Tons , (T) = Tons , (N) = Not Reported

There are 1 compliance/violation record(s) reported at this site:

Evaluation	Date	Violations
COMPLIANCE EVALUATION INSPECTION (CEI)	14-JAN-88	YES

LUST:

Facility ID:	570319	Incident ID:	573000600
Report No:	5730006	Facility Track:	0
Facility Tel:	-0-	Responsibility:	-0-
Owner:	-0- -0- -0-, OH -0- -0-		
Operator:	-0- -0- -0-, OH -0- -0-		
Inspector:	-0-	Revised Date:	-0-
Fiscal Track:	FY93	Coordinator:	Central Office Closure
Facility Status:	Reported		
Classification:	Known suspected or confirmed source and responsible person is voluntarily, or under an informal enforcement action, proceeding with investigation of corrective actions.		
Trust Fund:	Closure of an underground storage tank.		
Emerg Respnse:	2	Response By:	-0-
Vacant:	-, -0-	County Num:	57
Authorized By:	GILL	Authorize Date:	01/11/93
Remarks:	-0-		
Summary:	-0-		
Added Date:	01/11/93	Entry By:	UNGER
Response Srch:	-0-	Priority:	2

Map ID / Direction / Distance / Elevation	Site	Database(s)	EDR ID Number / EPA ID Number

TECHNICOTE INC (Continued) — **1000243045**

UST:

Facility ID:	0-570319	Tank ID:	1
Capacity:	8,000	Tank Status:	Remv
Tank Age:	Unk	Material:	Bare Steel
Product:	HAZ-69742-89-8		
Owner:	TECHNICOTE, INC. 222 MOUND AVE MIAMISBURG, OH 45342 County: Montgomery		
Piping Material:	Bare Steel	Facility Contact:	MILES D. TREECE
Piping Type:	Suction -- Valve	Telephone:	(513) 859-4448
Remed. Des. Tanks:	Not reported		
Remed. Des. Piping:	Not reported		

Facility ID:	0-570319	Tank ID:	2
Capacity:	8,000	Tank Status:	Remv
Tank Age:	Unk	Material:	Bare Steel
Product:	Not reported		
Owner:	TECHNICOTE, INC. 222 MOUND AVE MIAMISBURG, OH 45342 County: Montgomery		
Piping Material:	Bare Steel	Facility Contact:	MILES D. TREECE
Piping Type:	Suction -- Valve	Telephone:	(513) 859-4448
Remed. Des. Tanks:	Not reported		
Remed. Des. Piping:	Not reported		

Facility ID:	0-570319	Tank ID:	3
Capacity:	500	Tank Status:	Remv
Tank Age:	Unk	Material:	Bare Steel
Product:	Not reported		
Owner:	TECHNICOTE, INC. 222 MOUND AVE MIAMISBURG, OH 45342 County: Montgomery		
Piping Material:	Bare Steel	Facility Contact:	MILES D. TREECE
Piping Type:	Suction -- Valve	Telephone:	(513) 859-4448
Remed. Des. Tanks:	Not reported		
Remed. Des. Piping:	Not reported		

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6 NNW 1/4-1/2 Lower — **JACKS MOBILE**, **51 CENTER ST**, **GERMANTOWN, OH -0-** — **LUST** — **S101565406**, **N/A**

Map ID Direction Distance Elevation	Site	Database(s)	EDR ID Number EPA ID Number

JACKS MOBILE (Continued) **S101565406**

LUST:

Facility ID:	570757	Incident ID:	571148402
Report No:	5711484	Facility Track:	2
Facility Tel:	-0-	Responsibility:	-0-
Owner:	-0-		
	-0-		
	-0-, OH -0-		
	-0-		
Operator:	-0-		
	-0-		
	-0-, OH -0-		
	-0-		
Inspector:	-0-	Revised Date:	12/02/94
Fiscal Track:	FY91	Coordinator:	Central Office Corrective Actions
Facility Status:	No Further Action		
Classification:	Known suspected or confirmed source and responsible person is voluntarily, or under an informal enforcement action, proceeding with investigation of corrective actions.		
Trust Fund:	Incident eligible for LTF oversight and/or spending - a suspected or confirmed release of petroleum from a regulated UST.		
Emerg Respnse:	2	Response By:	-0-
Vacant:	-, -0-	County Num:	57
Authorized By:	ORD	Authorize Date:	11/29/94
Remarks:	-0-		
Summary:	-0-		
Added Date:	-0-	Entry By:	UNGER
Response Srch:	-0-	Priority:	2

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7 NW 1/2-1 Lower **MIAMISBURG WELL FIELD / UNK SOURCE** **SHWS** **S100037719**
302 S RIVERVIEW AVE **N/A**
MIAMISBURG, OH 45342

SHWS:

Facility ID:	557-1359	EPA ID:	NOT ASSIGNED
Facility Type:	None		

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)	Facility ID
MIAMISBURG	9011149	MOUND PLANT MOUND RD.			ERNS	
MIAMISBURG	9002897	MOUND PLANT 1 MOUND AVE			ERNS	
MIAMISBURG	S100763612	MIAMI TWP SERVICE DEPT	8580 MIAMISBURG SPRINGBORO RD	45342	LUST	579313
MIAMISBURG	U000894728	MIAMI TOWNSHIP SERVICE DEPT	8580 MIAMISBURG-SPRINGBORO RD	45342	UST	0-579313
MIAMISBURG	U001431645	U.S. DEPT OF ENERGY	MOUND AVE	45343	UST	0-570630
MIAMISBURG	S101565646	US DEPT OF ENERGY	120 MOUND AVE (94 CLOSURE)	45343	LUST	570630
MIAMISBURG	S100648052	MOUND FACILITY	MOUND RD (MAIN HILL AREA BY POWE	45343	LUST	-0-
MIAMISBURG	S100648051	MOUND PLANT (DOE)	MOUND AVE (BLDG 34)	45343	LUST	-0-
MIAMISBURG	1000962299	US DEPT OF ENERGY MOUND PLT	MOUND AVE	45343	FINDS	
MIAMISBURG	1000792602	US DOE MOUND PLT	MOUND RD	45343	FINDS	
MIAMISBURG	1001090583	MOUND FLEXIBLE CIRCUITS CORPORATION	720 MOUND RD BLDG 4241	45342	RCRIS-SQG	
MIAMISBURG	1000842207	US DOE MOUND FACILITY	MOUND RD	45343	PADS, RCRIS-LQG, RCRIS-TSD, CORRACTS, SHWS	
MIAMISBURG	1001029422	EG & G STAR CITY INC	1 MOUND RD	45343	RCRIS-SQG	
MIAMISBURG	1000154644	MONARCH MARKING SYSTEMS INC	ST RTE 725 AND BYERS RD	45342	FINDS, RCRIS-LQG	
NEW CASTLE	S100645642	AT&T	SR 36A	45343	LUST	167059
NEW CASTLE	U001635336	AT&T	US RT 36	45343	UST	0-167059

Site	Database(s)	EDR ID Number EPA ID Number
MOUND PLANT MOUND RD. **MIAMISBURG, OH**	**ERNS**	**9011149** **N/A**
MOUND PLANT 1 MOUND AVE **MIAMISBURG, OH**	**ERNS**	**9002897** **N/A**
MIAMI TWP SERVICE DEPT **8580 MIAMISBURG SPRINGBORO RD** **MIAMISBURG, OH 45342**	**LUST**	**S100763612** **N/A**

LUST:

Facility ID:	579313	Incident ID:	573055000
Report No:	5730550	Facility Track:	0
Facility Tel:	-0-	Responsibility:	-0-
Owner:	-0- -0- -0-, OH -0- -0-		
Operator:	-0- -0- -0-, OH -0- -0-		
Inspector:	-0-	Revised Date:	07/22/93
Fiscal Track:	FY93	Coordinator:	Central Office Closure
Facility Status:	No Further Action		
Classification:	Known suspected or confirmed source and responsible person is voluntarily, or under an informal enforcement action, proceeding with investigation of corrective actions.		
Trust Fund:	Closure of an underground storage tank.		
Emerg Respnse:	2	Response By:	-0-
Vacant:	-, -0-	County Num:	57
Authorized By:	GILL	Authorize Date:	07/07/93
Remarks:	-0-		
Summary:	-0-		
Added Date:	04/12/93	Entry By:	UNGER
Response Srch:	-0-	Priority:	2

Site	Database(s)	EDR ID Number EPA ID Number

MIAMI TWP SERVICE DEPT (Continued) S100763612

Facility ID:	579313	Incident ID:	573055001
Report No:	5730550	Facility Track:	1
Facility Tel:	-0-	Responsibility:	-0-
Owner:	-0- -0- -0-, OH -0- -0-		
Operator:	-0- -0- -0-, OH -0- -0-		
Inspector:	-0-	Revised Date:	03/22/94
Fiscal Track:	FY93	Coordinator:	Central Office Closure
Facility Status:	No Further Action		
Classification:	Known suspected or confirmed source and responsible person is voluntarily, or under an informal enforcement action, proceeding with investigation of corrective actions.		
Trust Fund:	Closure of an underground storage tank.		
Emerg Respnse:	2	Response By:	-0-
Vacant:	-, -0-	County Num:	57
Authorized By:	GILL	Authorize Date:	03/18/94
Remarks:	-0-		
Summary:	-0-		
Added Date:	12/15/93	Entry By:	UNGER
Response Srch:	-0-	Priority:	2

MIAMI TOWNSHIP SERVICE DEPT UST U000894728
8580 MIAMISBURG-SPRINGBORO RD N/A
MIAMISBURG, OH 45342

UST:

Facility ID:	0-579313	Tank ID:	1
Capacity:	1,000	Tank Status:	Remv
Tank Age:	20	Material:	Bare Steel
Product:	Gasoline		
Owner:	MIAMI TOWNSHIP TRUSTEES 2700 LYONS RD MIAMISBURG, OH 45342 County: Montgomery		
Piping Material:	Galvanized Steel	Facility Contact:	HAROLD W. MEIER
Piping Type:	Suction -- No Valve	Telephone:	Not reported
Remed. Des. Tanks:	Not reported		
Remed. Des. Piping:	Not reported		

Facility ID:	0-579313	Tank ID:	2
Capacity:	1,000	Tank Status:	Remv
Tank Age:	20	Material:	Bare Steel
Product:	Diesel		
Owner:	MIAMI TOWNSHIP TRUSTEES 2700 LYONS RD MIAMISBURG, OH 45342 County: Montgomery		
Piping Material:	Galvanized Steel	Facility Contact:	HAROLD W. MEIER
Piping Type:	Suction -- No Valve	Telephone:	Not reported
Remed. Des. Tanks:	Not reported		
Remed. Des. Piping:	Not reported		

Site	Database(s)	EDR ID Number EPA ID Number

MIAMI TOWNSHIP SERVICE DEPT (Continued) — U000894728

Facility ID:	0-579313	Tank ID:	3
Capacity:	1,000	Tank Status:	Remv
Tank Age:	20	Material:	Bare Steel
Product:	Used Oil		
Owner:	MIAMI TOWNSHIP TRUSTEES 2700 LYONS RD MIAMISBURG, OH 45342 County: Montgomery		
Piping Material:	Galvanized Steel	Facility Contact:	HAROLD W. MEIER
Piping Type:	Gravity Fed	Telephone:	Not reported
Remed. Des. Tanks:	Tightness Testing		
Remed. Des. Piping:	Line Tightness		

U.S. DEPT OF ENERGY — UST — U001431645
MOUND AVE — N/A
MIAMISBURG, OH 45343

UST:

Facility ID:	0-570630	Tank ID:	1
Capacity:	550	Tank Status:	Remv
Tank Age:	Unk	Material:	Unknown
Product:	Diesel		
Owner:	U.S. DEPT. OF ENERGY PO BOX 66 MIAMISBURG, OH 45343 County: Montgomery		
Piping Material:	Unknown	Facility Contact:	JAMES A. MORLEY
Piping Type:	Not reported	Telephone:	Not reported
Remed. Des. Tanks:	Not reported		
Remed. Des. Piping:	Not reported		

Facility ID:	0-570630	Tank ID:	2
Capacity:	Unknown	Tank Status:	Curr
Tank Age:	Unk	Material:	Unknown
Product:	UNK		
Owner:	U.S. DEPT. OF ENERGY PO BOX 66 MIAMISBURG, OH 45343 County: Montgomery		
Piping Material:	Unknown	Facility Contact:	JAMES A. MORLEY
Piping Type:	Not reported	Telephone:	Not reported
Remed. Des. Tanks:	Not reported		
Remed. Des. Piping:	Not reported		

Facility ID:	0-570630	Tank ID:	3
Capacity:	Unknown	Tank Status:	Curr
Tank Age:	Unk	Material:	Unknown
Product:	UNK		
Owner:	U.S. DEPT. OF ENERGY PO BOX 66 MIAMISBURG, OH 45343 County: Montgomery		
Piping Material:	Unknown	Facility Contact:	JAMES A. MORLEY
Piping Type:	Not reported	Telephone:	Not reported
Remed. Des. Tanks:	Not reported		
Remed. Des. Piping:	Not reported		

Site	Database(s)	EDR ID Number EPA ID Number
US DEPT OF ENERGY **120 MOUND AVE (94 CLOSURE)** **MIAMISBURG, OH 45343**	**LUST**	**S101565646** **N/A**

LUST:

Facility ID:	570630	Incident ID:	579108404
Report No:	5791084	Facility Track:	4
Facility Tel:	-0-	Responsibility:	-0-
Owner:	-0- -0- -0-, OH -0- -0-		
Operator:	-0- -0- -0-, OH -0- -0-		
Inspector:	-0-	Revised Date:	08/29/95
Fiscal Track:	9000	Coordinator:	Central Office Closure
Facility Status:	No Further Action		
Classification:	Known suspected or confirmed source and responsible person is voluntarily, or under an informal enforcement action, proceeding with investigation of corrective actions.		
Trust Fund:	Closure of an underground storage tank.		
Emerg Respnse:	2	Response By:	-0-
Vacant:	-, -0-	County Num:	57
Authorized By:	HODNETT	Authorize Date:	08/29/95
Remarks:	-0-		
Summary:	CLOS RPT RECD		
Added Date:	-0-	Entry By:	UNGER
Response Srch:	-0-	Priority:	2

MOUND FACILITY **MOUND RD (MAIN HILL AREA BY POWE** **MIAMISBURG, OH 45343**	**LUST**	**S100648052** **N/A**

Site	Database(s)	EDR ID Number EPA ID Number

MOUND FACILITY (Continued) S100648052

LUST:

Facility ID:	-0-	Incident ID:	579108403
Report No:	5791084	Facility Track:	3
Facility Tel:	-0-	Responsibility:	-0-
Owner:	-0- -0- -0-, OH -0- -0-		
Operator:	-0- -0- -0-, OH -0- -0-		
Inspector:	-0-	Revised Date:	-0-
Fiscal Track:	F900	Coordinator:	Central Office Corrective Actions
Facility Status:	Reported		
Classification:	Unknown source and/or responsible person		
Trust Fund:	A suspected or confirmed release of petroleum from a UST not regulated by RCRA subtitle I.		
Emerg Respnse:	2	Response By:	-0-
Vacant:	-, -0-	County Num:	57
Authorized By:	HODNETT	Authorize Date:	09/28/93
Remarks:	-0-		
Summary:	-0-		
Added Date:	09/28/93	Entry By:	UNGER
Response Srch:	-0-	Priority:	2

MOUND PLANT (DOE) LUST S100648051
MOUND AVE (BLDG 34) N/A
MIAMISBURG, OH 45343

LUST:

Facility ID:	-0-	Incident ID:	579108401
Report No:	5791084	Facility Track:	1
Facility Tel:	-0-	Responsibility:	-0-
Owner:	-0- -0- -0-, OH -0- -0-		
Operator:	-0- -0- -0-, OH -0- -0-		
Inspector:	-0-	Revised Date:	11/16/94
Fiscal Track:	F900	Coordinator:	Central Office Closure
Facility Status:	No Further Action		
Classification:	Known suspected or confirmed source and responsible person is voluntarily, or under an informal enforcement action, proceeding with investigation of corrective actions.		
Trust Fund:	Closure of an underground storage tank.		
Emerg Respnse:	2	Response By:	-0-
Vacant:	-, -0-	County Num:	57
Authorized By:	MCCLURE	Authorize Date:	11/15/94
Remarks:	-0-		
Summary:	-0-		
Added Date:	-0-	Entry By:	UNGER
Response Srch:	-0-	Priority:	2

Site	Database(s)	EDR ID Number EPA ID Number
US DEPT OF ENERGY MOUND PLT **MOUND AVE** **MIAMISBURG, OH 45343**	**FINDS**	**1000962299** **OH0000323576**
US DOE MOUND PLT **MOUND RD** **MIAMISBURG, OH 45343**	**FINDS**	**1000792602** **OHD987039856**
MOUND FLEXIBLE CIRCUITS CORPORATION **720 MOUND RD BLDG 4241** **MIAMISBURG, OH 45342**	**RCRIS-SQG**	**1001090583** **OHR000011569**

RCRIS:
Owner: XOLOX HOLIDING CORPORATION
(219) 432-0661

Contact: Not reported

Waste	Quantity	Info Source	Waste	Quantity	Info Source
D000	.00000 (N)	Notification	D002	.00000 (N)	Notification
D008	.00000 (N)	Notification	F006	.00000 (N)	Notification

(P) = Pounds , (K) = Kilograms , (M) = Metric Tons , (T) = Tons , (N) = Not Reported

US DOE MOUND FACILITY **MOUND RD** **MIAMISBURG, OH 45343**	**PADS** **RCRIS-LQG** **RCRIS-TSD** **CORRACTS** **SHWS**	**1000842207** **OH6890008984**

RCRIS:
Owner: US DOE
(513) 865-3271

Contact: HARRY HILL
(513) 865-3271

Waste	Quantity	Info Source	Waste	Quantity	Info Source
D001	.00000 (N)	Notification	D002	.00000 (N)	Notification
D003	.00000 (N)	Notification	D004	.00000 (N)	Notification
F001	.00000 (N)	Notification	F003	.00000 (N)	Notification
F004	.00000 (N)	Notification	F005	.00000 (N)	Notification
F007	.00000 (N)	Notification	F009	.00000 (N)	Notification
K044	.00000 (N)	Notification	P018	.00000 (N)	Notification
P106	.00000 (N)	Notification	U009	.00000 (N)	Notification
U019	.00000 (N)	Notification	U021	.00000 (N)	Notification
U037	.00000 (N)	Notification	U044	.00000 (N)	Notification
U052	.00000 (N)	Notification	U056	.00000 (N)	Notification
U075	.00000 (N)	Notification	U080	.00000 (N)	Notification
U108	.00000 (N)	Notification	U121	.00000 (N)	Notification
U122	.00000 (N)	Notification	U134	.00000 (N)	Notification
U135	.00000 (N)	Notification	U138	.00000 (N)	Notification
U140	.00000 (N)	Notification	U144	.00000 (N)	Notification
U147	.00000 (N)	Notification	U151	.00000 (N)	Notification
U154	.00000 (N)	Notification	U158	.00000 (N)	Notification
U159	.00000 (N)	Notification	U160	.00000 (N)	Notification

Site	Database(s)	EDR ID Number EPA ID Number

US DOE MOUND FACILITY (Continued) 1000842207

U161	.00000 (N)	Notification	U167	.00000 (N)	Notification
U168	.00000 (N)	Notification	U188	.00000 (N)	Notification
U201	.00000 (N)	Notification	U213	.00000 (N)	Notification
U220	.00000 (N)	Notification	U223	.00000 (N)	Notification
U226	.00000 (N)	Notification	U238	.00000 (N)	Notification
U239	.00000 (N)	Notification	F001	18.14400 (N)	Part A
F003	2.04100 (N)	Part A	F004	.00900 (N)	Part A
F005	1.81400 (N)	Part A	F007	.45300 (N)	Part A
F009	.22600 (N)	Part A	K044	.01100 (N)	Part A
P018	.00000 (N)	Part A	P106	.00000 (N)	Part A
U009	.00400 (N)	Part A	U019	.03400 (N)	Part A
U021	.00000 (N)	Part A	U037	.00200 (N)	Part A
U044	.03100 (N)	Part A	U056	.02700 (N)	Part A
U075	.01100 (N)	Part A	U080	.01100 (N)	Part A
U108	.00400 (N)	Part A	U121	.05600 (N)	Part A
U122	.03100 (N)	Part A	U134	.02900 (N)	Part A
U135	.00400 (N)	Part A	U138	.00400 (N)	Part A
U140	.00400 (N)	Part A	U144	.00400 (N)	Part A
U147	.00400 (N)	Part A	U151	.00500 (N)	Part A
U158	.00000 (N)	Part A	U160	.00400 (N)	Part A
U161	.00200 (N)	Part A	U167	.00400 (N)	Part A
U168	.00400 (N)	Part A	U188	.01100 (N)	Part A
U201	.00400 (N)	Part A	U213	.00400 (N)	Part A
U223	.29400 (N)	Part A	U238	.04500 (N)	Part A
D001	.19200 (N)	Part A	D002	3.81000 (N)	Part A
D003	.04500 (N)	Part A	D004	.00400 (N)	Part A

(P) = Pounds , (K) = Kilograms , (M) = Metric Tons , (T) = Tons , (N) = Not Reported

There are 8 compliance/violation record(s) reported at this site:

Evaluation	Date	Violations
COMPLIANCE EVALUATION INSPECTION (CEI)	20-SEP-94	YES
COMPLIANCE EVALUATION INSPECTION (CEI)	23-JUN-93	YES
COMPLIANCE EVALUATION INSPECTION (CEI)	07-JUL-92	YES
COMPLIANCE EVALUATION INSPECTION (CEI)	29-JUL-91	YES
COMPLIANCE EVALUATION INSPECTION (CEI)	31-JUL-90	YES
COMPLIANCE EVALUATION INSPECTION (CEI)	13-SEP-89	YES
COMPLIANCE EVALUATION INSPECTION (CEI)	24-AUG-88	YES
OTHER EVALUATION	24-AUG-88	YES

SHWS:
Facility ID: 557-0864 EPA ID: OH6890008984
Facility Type: Active, On Federal National Priorities List

EG & G STAR CITY INC
1 MOUND RD
MIAMISBURG, OH 45343

RCRIS-SQG **1001029422**
OHR000004713

Site	Database(s)	EDR ID Number EPA ID Number

EG & G STAR CITY INC (Continued) 1001029422

RCRIS:
Owner: USDOE - AREA MGR
(513) 865-3252

Contact: Not reported

Waste	Quantity	Info Source	Waste	Quantity	Info Source
D000	.00000 (N)	Notification	D001	.00000 (N)	Notification
D002	.00000 (N)	Notification	D003	.00000 (N)	Notification
D007	.00000 (N)	Notification	F001	.00000 (N)	Notification
F002	.00000 (N)	Notification	F003	.00000 (N)	Notification
F005	.00000 (N)	Notification	U002	.00000 (N)	Notification
U108	.00000 (N)	Notification			

(P) = Pounds , (K) = Kilograms , (M) = Metric Tons , (T) = Tons , (N) = Not Reported

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MONARCH MARKING SYSTEMS INC FINDS 1000154644
ST RTE 725 AND BYERS RD RCRIS-LQG OHD044573053
MIAMISBURG, OH 45342

RCRIS:
Owner: PITNEY BOWES
(203) 356-5000

Contact: TOM DERBY
(513) 865-2123

Waste	Quantity	Info Source	Waste	Quantity	Info Source
D001	.00000 (N)	Notification	F001	.00000 (N)	Notification
F003	.00000 (N)	Notification	F005	.00000 (N)	Notification

(P) = Pounds , (K) = Kilograms , (M) = Metric Tons , (T) = Tons , (N) = Not Reported

There are 2 compliance/violation record(s) reported at this site:

Evaluation	Date	Violations
COMPLIANCE EVALUATION INSPECTION (CEI)	17-FEB-88	YES
OTHER EVALUATION	17-FEB-88	YES

AT&T LUST S100645642
SR 36A N/A
NEW CASTLE, OH 45343

Site	Database(s)	EDR ID Number EPA ID Number

AT&T (Continued) S100645642

LUST:

Facility ID:	167059	Incident ID:	163205800
Report No:	1632058	Facility Track:	0
Facility Tel:	-0-	Responsibility:	-0-
Owner:	-0- -0- -0-, OH -0- -0-		
Operator:	-0- -0- -0-, OH -0- -0-		
Inspector:	-0-	Revised Date:	03/17/94
Fiscal Track:	FY94	Coordinator:	Central Office Corrective Actions
Facility Status:	Initial Corrective Action Program Report		
Classification:	Known suspected or confirmed source and responsible person is voluntarily, or under an informal enforcement action, proceeding with investigation of corrective actions.		
Trust Fund:	Incident eligible for LTF oversight and/or spending - a suspected or confirmed release of petroleum from a regulated UST.		
Emerg Respnse:	2	Response By:	-0-
Vacant:	-, -0-	County Num:	16
Authorized By:	GILL	Authorize Date:	03/04/94
Remarks:	-0-		
Summary:	-0-		
Added Date:	10/19/93	Entry By:	UNGER
Response Srch:	-0-	Priority:	2

AT&T
US RT 36
NEW CASTLE, OH 45343

UST **U001635336**
N/A

UST:

Facility ID:	0-167059	Tank ID:	1
Capacity:	2,000	Tank Status:	Remv
Tank Age:	30	Material:	Cath. Steel
Product:	Diesel		
Owner:	AT&T 21 COLONIAL DR RM 116 PISCATAWAY, NJ 08854 County: Pennsylvania		
Piping Material:	Galvanized Steel	Facility Contact:	KEN G. SMITH
Piping Type:	Suction -- No Valve	Telephone:	(217) 788-2450
Remed. Des. Tanks:	Not reported		
Remed. Des. Piping:	Not reported		

GEOCHECK VERSION 2.1 ADDENDUM
FEDERAL DATABASE WELL INFORMATION

Well Closest to Target Property (Northern Quadrant)

BASIC WELL DATA

Site ID:	393813084174700	Distance from TP:	1/2 - 1 Mile
Site Type:	Single well, other than collector or Ranney type		
Year Constructed:	1990	County:	Montgomery
Altitude:	701.28 ft.	State:	Ohio
Well Depth:	91.00 ft.	Topographic Setting:	Not Reported
Depth to Water Table:	13.00 ft.	Prim. Use of Site:	Observation
Date Measured:	11141990	Prim. Use of Water:	Unused

LITHOLOGIC DATA

Geologic Age ID (Era/System/Series):	Cenozoic-Quaternary-Holocene
Principal Lithology of Unit:	Colluvium
Further Description:	TOPSOIL

WATER LEVEL VARIABILITY

Not Reported

GEOCHECK VERSION 2.1
FEDERAL DATABASE WELL INFORMATION

Well Closest to Target Property (Southern Quadrant)

BASIC WELL DATA

Site ID:	393724084172900	Distance from TP:	1/2 - 1 Mile
Site Type:	Single well, other than collector or Ranney type		
Year Constructed:	1964	County:	Montgomery
Altitude:	698.00 ft.	State:	Ohio
Well Depth:	226.00 ft.	Topographic Setting:	Valley flat
Depth to Water Table:	Not Reported	Prim. Use of Site:	Withdrawal of water
Date Measured:	Not Reported	Prim. Use of Water:	Industrial

LITHOLOGIC DATA

Geologic Age ID (Era/System/Series):	Cenozoic-Quaternary-Pleistocene
Principal Lithology of Unit:	Outwash
Further Description:	Not Reported

WATER LEVEL VARIABILITY

Not Reported

GEOCHECK VERSION 2.1
FEDERAL DATABASE WELL INFORMATION

Well Closest to Target Property (Western Quadrant)

BASIC WELL DATA

Site ID:	393757084173600	Distance from TP:	1/4 - 1/2 Mile
Site Type:	Single well, other than collector or Ranney type		
Year Constructed:	1955	County:	Montgomery
Altitude:	691.00 ft.	State:	Ohio
Well Depth:	95.00 ft.	Topographic Setting:	Valley flat
Depth to Water Table:	24.13 ft.	Prim. Use of Site:	Withdrawal of water
Date Measured:	12311975	Prim. Use of Water:	Public supply

LITHOLOGIC DATA

Not Reported

WATER LEVEL VARIABILITY

Not Reported

GEOCHECK VERSION 2.1
STATE DATABASE WELL INFORMATION

Water Well Information:

Well Within 1/2 - 1 Mile of Target Property (Northern Quadrant)

PWS ID:	5701212	Population Served:	18,500
Latitude:	0393813	Longitude:	0841744
Owner:	MIAMISBURG,CITY OF		
Source:	Ground		

Well Within >2 Miles of Target Property (Southern Quadrant)

PWS ID:	8301412	Population Served:	7,800
Latitude:	0393505	Longitude:	0841733
Owner:	SPRINGBORO,VLG.OF-CHAUTAUQUA		
Source:	Ground		

GEOCHECK VERSION 2.1
PUBLIC WATER SUPPLY SYSTEM INFORMATION

Searched by Nearest Well.

PWS SUMMARY:

PWS ID:	OH5736712	PWS Status:	Active	Distance from TP:	1/2 - 1 Mile
Date Initiated:	Not Reported	Date Deactivated:	Not Reported	Dir relative to TP:	North
PWS Name:	MIAMI CRUISE-INN CONCESSION MANAGER BOX 103,STATE ROUTE 25 MIAMISBURG, OH 45342				
Addressee / Facility Type:	Not Reported				
Facility Name:	Not Reported				
Facility Latitude:	39 38 34		Facility Longitude:	084 17 12	
City Served:	Not Reported:				
Treatment Class:	Treated		Population Served:	101 - 500 Persons	

Well currently has or has had major violation(s): No

EPA Waste Codes Addendum

Code	Description
D001	IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Elapsed ASTM days: Provides confirmation that this EDR report meets or exceeds the 90-day updating requirement of the ASTM standard.

FEDERAL ASTM RECORDS:

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System
Source: EPA/NTIS
Telephone: 703-603-8904
CERCLIS: CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 03/31/96
Date Made Active at EDR: 06/03/96
Database Release Frequency: Monthly
Date of Data Arrival at EDR: 04/23/96
Elapsed ASTM days: 41
Date of Last EDR Contact: 07/17/96

ERNS: Emergency Response Notification System
Source: EPA/NTIS
Telephone: 202-260-2342
ERNS: Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/31/95
Date Made Active at EDR: 02/19/96
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 01/26/96
Elapsed ASTM days: 24
Date of Last EDR Contact: 08/12/96

NPL: National Priority List
Source: EPA
Telephone: 703-603-8852
NPL: National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, it is EDR's policy to plot NPL sites greater than approximately 300 acres in size as areas (polygons). A polygon boundary is based upon EPA's defined Area of Impact (AOI) for the particular NPL site. The AOI may be the boundaries of the property, the boundaries as determined by the extent of plume migration, or other such boundaries as defined by EPA. Sites smaller in size are point-geocoded at the site's address.

Date of Government Version: 06/01/96
Date Made Active at EDR: 07/17/96
Database Release Frequency: Semi-Annually
Date of Data Arrival at EDR: 06/25/96
Elapsed ASTM days: 22
Date of Last EDR Contact: 06/19/96

RCRIS: Resource Conservation and Recovery Information System
Source: EPA/NTIS
Telephone: 703-308-7907
RCRIS: Resource Conservation and Recovery Information System. RCRIS includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA).

Date of Government Version: 07/01/96
Date Made Active at EDR: 10/09/96
Database Release Frequency: Semi-Annually
Date of Data Arrival at EDR: 08/07/96
Elapsed ASTM days: 63
Date of Last EDR Contact: 06/05/96

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

FEDERAL NON-ASTM RECORDS:

CONSENT: Superfund (CERCLA) Consent Decrees
Source: EPA Regional Offices
Telephone: Varies
Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: Varies
Database Release Frequency: Varies
Date of Last EDR Contact: Varies
Date of Next Scheduled EDR Contact: 09/01/95

CORRACTS: Corrective Action Report
Source: EPA
Telephone: 703-308-7907
CORRACTS: CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 04/10/95
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 09/27/96
Date of Next Scheduled EDR Contact: 12/16/96

FINDS: Facility Index System
Source: EPA/NTIS
Telephone: 800-908-2493
FINDS: Facility Index System. FINDS contains both facility information and "pointers" to other sources that contain more detail. These include: RCRIS, PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), FATES (FIFRA [Federal Insecticide Fungicide Rodenticide Act] and TSCA Enforcement System, FTTS [FIFRA/TSCA Tracking System]), CERCLIS, DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), FRDS (Federal Reporting Data System), SIA (Surface Impoundments), CICIS (TSCA Chemicals in Commerce Information System), PADS, RCRA-J (medical waste transporters/disposers), TRIS and TSCA.

Date of Government Version: 09/30/95
Database Release Frequency: Quarterly
Date of Last EDR Contact: 06/05/96
Date of Next Scheduled EDR Contact: 10/07/96

HMIRS: Hazardous Materials Information Reporting System
Source: U.S. Department of Transportation
Telephone: 202-366-4555
HMIRS: Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 12/31/95
Database Release Frequency: Annually
Date of Last EDR Contact: 07/29/96
Date of Next Scheduled EDR Contact: 10/28/96

MLTS: Material Licensing Tracking System
Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 02/13/96
Database Release Frequency: Quarterly
Date of Last EDR Contact: 07/15/96
Date of Next Scheduled EDR Contact: 10/14/96

NPL LIENS: Federal Superfund Liens
Source: EPA
Telephone: 205-564-4267
NPL LIENS: Federal Superfund Liens. Under the authority granted the USEPA by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner receives notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/91
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 09/10/96
Date of Next Scheduled EDR Contact: 11/25/96

PADS: PCB Activity Database System
Source: EPA
Telephone: 202-260-3992
PADS: PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 10/14/94
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 08/21/96
Date of Next Scheduled EDR Contact: 11/18/96

RAATS: RCRA Administrative Action Tracking System
Source: EPA
Telephone: 202-564-4104
RAATS: RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA.

Date of Government Version: 04/17/95
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 09/16/96
Date of Next Scheduled EDR Contact: 12/16/96

ROD: Records Of Decision
Source: NTIS
Telephone: 703-416-0703
Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 03/31/95
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 06/07/96
Date of Next Scheduled EDR Contact: 12/02/96

TRIS: Toxic Chemical Release Inventory System
Source: EPA/NTIS
Telephone: 202-260-2320
TRIS: Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/92
Database Release Frequency: Annually
Date of Last EDR Contact: 09/11/96
Date of Next Scheduled EDR Contact: 09/30/96

TSCA: Toxic Substances Control Act
Source: EPA/NTIS
Telephone: 202-260-1444
TSCA: Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site. USEPA has no current plan to update and/or re-issue this database.

Date of Government Version: 01/31/95
Database Release Frequency: Annually
Date of Last EDR Contact: 09/16/96
Date of Next Scheduled EDR Contact: 12/16/96

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

STATE OF OHIO ASTM RECORDS:

LUST: List of Reported Petroleum Underground Storage Tank Release Incidents
Source: Department of Commerce
Telephone: 614-752-7926
LUST: Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 04/01/96
Date Made Active at EDR: 06/06/96
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 04/25/96
Elapsed ASTM days: 42
Date of Last EDR Contact: 07/15/96

SHWS: Master Sites List
Source: Ohio Environmental Protection Agency
Telephone: 614-644-3143
SHWS: State Hazardous Waste Sites. State hazardous waste site records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. Available information varies by state.

Date of Government Version: 12/31/95
Date Made Active at EDR: 04/30/96
Database Release Frequency: Annually
Date of Data Arrival at EDR: 04/07/96
Elapsed ASTM days: 23
Date of Last EDR Contact: 09/16/96

SWF/LF: Licensed Solid Waste Facilities
Source: Ohio Environmental Protection Agency
Telephone: 614-644-2621
SWF/LF: Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Section 2004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 08/01/96
Date Made Active at EDR: 09/23/96
Database Release Frequency: Annually
Date of Data Arrival at EDR: 08/19/96
Elapsed ASTM days: 35
Date of Last EDR Contact: 07/31/96

UST: Facility File
Source: Department of Commerce
Telephone: 614-752-7926
UST: Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

Date of Government Version: 07/16/96
Date Made Active at EDR: 08/13/96
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 07/19/96
Elapsed ASTM days: 25
Date of Last EDR Contact: 07/16/96

STATE OF OHIO NON-ASTM RECORDS:

SPILLS: Includes Reported Incidents, Spills or Releases to The Environment
Source: Ohio EPA
Telephone: 614-644-2084
SPILLS: All reported incidents, spills or releases to the environment.

Date of Government Version: 12/31/93
Database Release Frequency: Quarterly
Date of Last EDR Contact: 09/19/96
Date of Next Scheduled EDR Contact: 12/16/96

Historical and Other Database(s)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

Former Manufactured Gas (Coal Gas) Sites: The existence and location of Coal Gas sites is provided exclusively to EDR by Real Property Scan, Inc. ©Copyright 1993 Real Property Scan, Inc. For a technical description of the types of hazards which may be found at such sites, contact your EDR customer service representative.

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The information contained in this report has predominantly been obtained from publicly available sources produced by entities other than Real Property Scan. While reasonable steps have been taken to insure the accuracy of this report, Real Property Scan does not guarantee the accuracy of this report. Any liability on the part of Real Property Scan is strictly limited to a refund of the amount paid. No claim is made for the actual existence of toxins at any site. This report does not constitute a legal opinion.

DELISTED NPL: Delisted NPL Sites
Source: EPA
Telephone: 703-603-8769
DELISTED NPL: The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

NFRAP: No Further Remedial Action Planned
Source: EPA/NTIS
Telephone: 703-416-0702
NFRAP: As of February 1995, CERCLIS sites designated "No Further Remedial Action Planned" (NFRAP) have been removed from CERCLIS. NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund action or NPL consideration. EPA has removed approximately 25,000 NFRAP sites to lift the unintended barriers to the redevelopment of these properties and has archived them as historical records so EPA does not needlessly repeat the investigations in the future. This policy change is part of the EPA's Brownfields Redevelopment Program to help cities, states, private investors and affected citizens to promote economic redevelopment of unproductive urban sites.

FRDS: Federal Reporting Data System
Source: EPA/Office of Drinking Water
Telephone: 202-260-2805
FRDS provides information regarding public water supplies and their compliance with monitoring requirements, maximum contaminant levels (MCL's), and other requirements of the Safe Drinking Water Act of 1986.

Area Radon Information: The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

Oil/Gas Pipelines/Electrical Transmission Lines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines and electrical transmission lines.

Sensitive Receptors: There are individuals who, due to their fragile immune systems, are deemed to be especially sensitive to environmental discharges. These typically include the elderly, the sick, and children. While the exact location of these sensitive receptors cannot be determined, EDR indicates those facilities, such as schools, hospitals, day care centers, and nursing homes, where sensitive receptors are likely to be located.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

USGS Water Wells: In November 1971 the United States Geological Survey (USGS) implemented a national water resource information tracking system. This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on more than 900,000 wells, springs, and other sources of groundwater.

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1994 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

Water Dams: National Inventory of Dams
Source: Federal Emergency Management Agency
Telephone: 202-646-2801
WATER DAMS: National computer database of more than 74,000 dams maintained by the Federal Emergency Management Agency.

Ohio Public Water Systems
Source: Ohio EPA, Division of Drinking and Groundwater
Telephone: 614-644-2752

The EDR-Radius Map
with GeoCheck™

US Department of Energy
Off Mound Rd.
Miamisburg, OH 45432

Inquiry Number: 100553.1s

December 13, 1995

Environmental Data Resources, Inc.

Creators of Toxicheck®

The Source For Environmental Risk Management Data

3530 Post Road
Southport, Connecticut 06490

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802

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Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Disclaimer

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No warranty of merchantability or of fitness for a particular purpose, expressed or implied, shall apply and EDR specifically disclaims the making of such warranties. In no event shall EDR be liable to anyone for special, incidental, consequential or exemplary damages.

EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc. (EDR). The search met the specific requirements of ASTM Standard Practice for Environmental Site Assessments, E 1527-94, or custom distances requested by the user.

The address of the subject property for which the search was intended is:

OFF MOUND RD.
MIAMISBURG, OH 45432

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the subject property or within the ASTM E 1527-94 search radius around the subject property for the following Databases:

Delisted NPL:	NPL Deletions
RCRIS-TSD:	Resource Conservation and Recovery Information System
CERC-NFRAP:	Comprehensive Environmental Response, Compensation, and Liability Information System
CORRACTS:	Corrective Action Report
State LF:	Licensed Solid Waste Facilities
RAATS:	RCRA Administrative Action Tracking System
HMIRS:	Hazardous Materials Information Reporting System
ERNS:	Emergency Response Notification System
NPL Liens:	Federal Superfund Liens
TSCA:	Toxic Substances Control Act
MLTS:	Material Licensing Tracking System
RODS:	Records Of Decision
CONSENT:	Superfund (CERCLA) Consent Decrees
OH Spills:	Not reported
Coal Gas:	Former Manufactured gas (Coal Gas) Sites

Unmapped (orphan) sites are not considered in the foregoing analysis.

Search Results:

Search results for the subject property and the search radius, are listed below:

Subject Property:

The subject property was not listed in any of the databases searched by EDR.

EXECUTIVE SUMMARY

Surrounding Properties:

Sites with an elevation equal to or higher than the subject property are in the left hand column; those with a lower elevation are in the right hand column. Page numbers refer to the EDR Radius Map report where detailed data on individual sites may be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

NPL: Also known as Superfund, the National Priority List database is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund program. The source of this database is the U.S. EPA.

A review of the NPL list, as provided by EDR, and dated 09/01/1995 has revealed that there is 1 NPL site within approximately 1.33 Miles of the subject property.

Equal/Higher Elevation	Page	Lower Elevation	Page
US DOE MOUND PLANT	***8***	***US DOE MOUND PLANT***	***8***

SHWS: The State Hazardous Waste Sites records are the states' equivalent to CERCLIS. These sites may or may not already by listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. The data comes from the Ohio Environmental Protection Agency's Master Sites List.

A review of the State Haz. Waste list, as provided by EDR, and dated 04/01/1995 has revealed that there is 1 State Haz. Waste site within approximately 1.33 Miles of the subject property.

Equal/Higher Elevation	Page	Lower Elevation	Page
		MIAMISBURG WELL FIELD / UNK SOURC	18

CERCLIS: The Comprehensive Environmental Response, Compensation and Liability Information System contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, persuant to Section 103 of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).
CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

A review of the CERCLIS list, as provided by EDR, and dated 08/31/1995 has revealed that there is 1 CERCLIS site within approximately 0.83 Miles of the subject property.

Equal/Higher Elevation	Page	Lower Elevation	Page
US DOE MOUND PLANT	***8***	***US DOE MOUND PLANT***	***8***

EXECUTIVE SUMMARY

LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data comes from the Department of Commerce Division of State Fire Marshal's List of Reported Petroleum Underground Storage Tank Release Incidents.

A review of the LUST list, as provided by EDR, and dated 11/01/1995 has revealed that there are 7 LUST sites within approximately 0.83 Miles of the subject property.

Equal/Higher Elevation	Page
US DOE MOUND PLANT	*8*

Lower Elevation	Page
US DOE MOUND PLANT	*8*
DJ CERAMICS	10
CG&R	11
RICHARD CHURCH SR ESTATE	13
TECHNICOTE INC	*14*
POINT STORE	17
MIAMISBURG WATER TREATMENT PLT	17

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data comes from the Department of Commerce Division of State Fire Marshal's Facility File.

A review of the UST list, as provided by EDR, and dated 09/01/1995 has revealed that there are 3 UST sites within approximately 0.58 Miles of the subject property.

Equal/Higher Elevation	Page

Lower Elevation	Page
CITY OF MIAMISBURG PUMP STATIO	12
TECHNICOTE INC	*14*
SHELL OIL CO. #23420931760	16

RCRIS: The Resource Conservation and Recovery Act database includes selected information on sites that generate, store, treat, or dispose of hazardous waste as defined by the Act. The source of this database is the U.S. EPA.

A review of the RCRIS-SQG list, as provided by EDR, and dated 05/31/1995 has revealed that there are 4 RCRIS-SQG sites within approximately 0.58 Miles of the subject property.

Equal/Higher Elevation	Page

Lower Elevation	Page
GMC DELCO PRODUCTS DIV	*12*
DAYTON PUBLIC SCHOOLS	*12*
TECHNICOTE INC	*14*
PLOCHER ANDREW SONS	*16*

EXECUTIVE SUMMARY

RCRIS: The Resource Conservation and Recovery Act database includes selected information on sites that generate, store, treat, or dispose of hazardous waste as defined by the Act. The source of this database is the U.S. EPA.

A review of the RCRIS-LQG list, as provided by EDR, and dated 05/31/1995 has revealed that there is 1 RCRIS-LQG site within approximately 0.58 Miles of the subject property.

Equal/Higher Elevation	Page	Lower Elevation	Page
		PRESTO ADHESIVE PAPER CO INC	*13*

PADS: The PCB Activity Database identifies generators, transporters, commercial storers and/or brokers and disposers of PCBs who are required to notify the United States Environmental Protection Agency of such activities. The source of this database is the U.S. EPA.

A review of the PADS list, as provided by EDR, and dated 10/14/1994 has revealed that there is 1 PADS site within approximately 0.33 Miles of the subject property.

Equal/Higher Elevation	Page	Lower Elevation	Page
US DOE MOUND PLANT	*8*	*US DOE MOUND PLANT*	*8*

FINDS: The Facility Index System contains both facility information and "pointers" to other sources of information that contain more detail. These include: RCRIS; Permit Compliance System (PCS); Aerometric Information Retrieval System (AIRS); FATES (FIFRA [Federal Insecticide Fungicide Rodenticide Act] and TSCA Enforcement System, FTTS [FIFRA/TSCA Tracking System]; CERCLIS; DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes); Federal Underground Injection Control (FURS); Federal Reporting Data System (FRDS); Surface Impoundments (SIA); TSCA Chemicals in Commerce Information System (CICS); PADS; RCRA-J (medical waste transporters/disposers); TRIS; and TSCA. The source of this database is the U.S. EPA/NTIS.

A review of the FINDS list, as provided by EDR, and dated 07/27/1994 has revealed that there are 3 FINDS sites within approximately 0.33 Miles of the subject property.

Equal/Higher Elevation	Page	Lower Elevation	Page
US DOE MOUND PLANT	*8*	*US DOE MOUND PLANT*	*8*
		GMC DELCO PRODUCTS DIV	*12*
		DAYTON PUBLIC SCHOOLS	*12*

TRIS: The Toxic Chemical Release Inventory System identifies facilities that release toxic chemicals to the air, water, and land in reportable quantities under SARA Title III, Section 313. The source of this database is the U.S. EPA.

A review of the TRIS list, as provided by EDR, and dated 12/31/1992 has revealed that there is 1 TRIS site within approximately 0.33 Miles of the subject property.

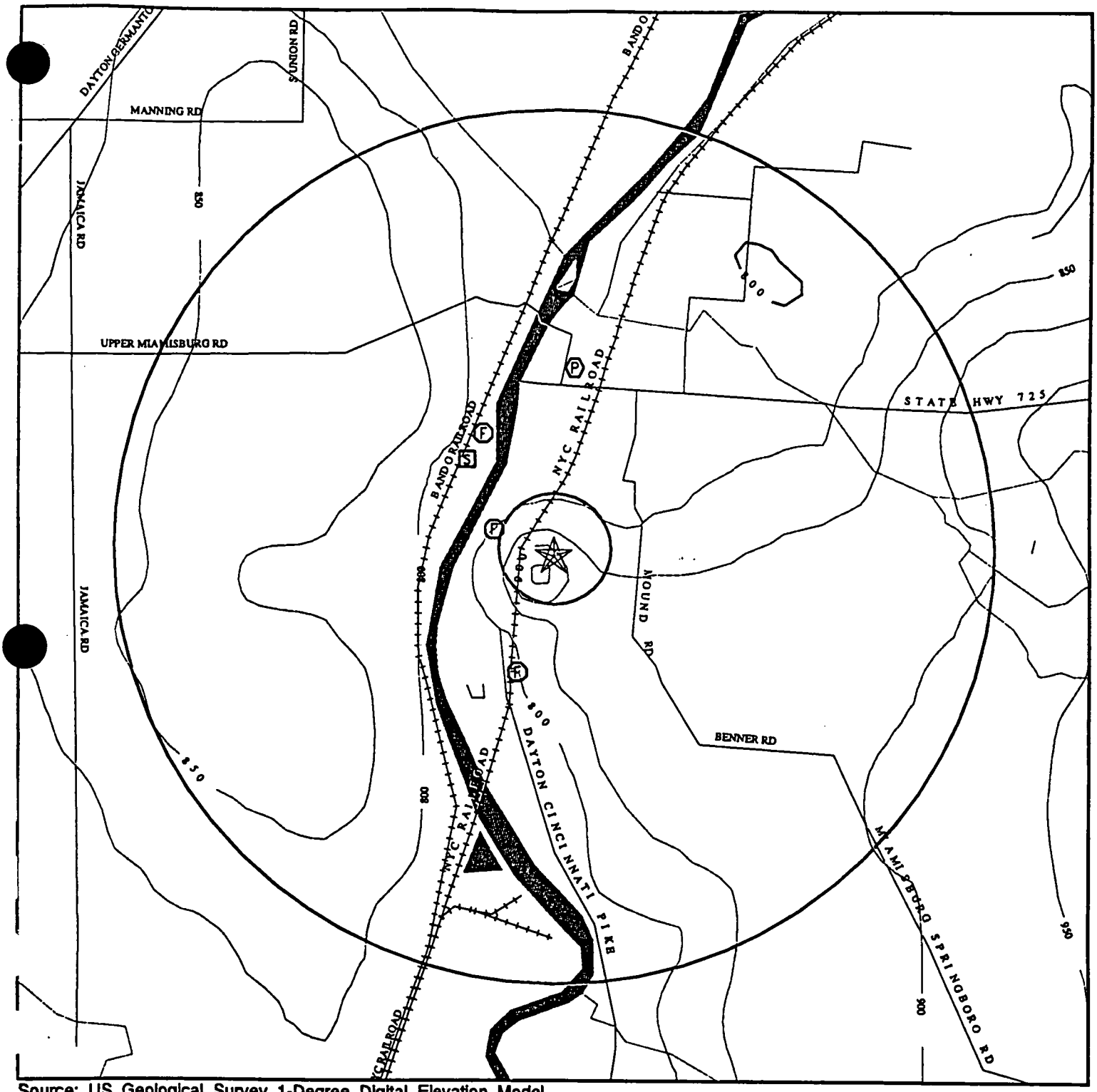
Equal/Higher Elevation	Page	Lower Elevation	Page
US DOE MOUND PLANT	*8*	*US DOE MOUND PLANT*	*8*

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped:

Site Name	Database(s)
PHILLIPS SAND & GRAVEL	FINDS,CERC-NFRAP,State Haz. Waste
US DOE MOUND FACILITY*	State Haz. Waste
DYES PENNZOIL	LUST
TOMS QUICK LUBE	LUST
KNOLLWOOD GARDEN CENTER	LUST
BOONE WATER SYSTEMS, INC.	UST,LUST
UNKNOWN	LUST
CATES SALES & SERVICE	UST
KNOLLWOOD MARATHON	UST
DYE'S KNOLLWOOD PENNZOIL	UST
TOM'S SUTO QUICK LUBE SERVIE I	UST
KNOLLWOOD FLORIST, INC.	UST
PENNZOIL	UST
GARY L. JESTICE	UST
WYLIE F. FAULKNER	UST
C G & R	UST
THE POINTE	UST
FRALEY FENCE	UST
CITY OF MIAMISBURG	UST
MONARCH MARKING SYS INC	UST
UES INC	RCRIS-SQG

TOPOGRAPHIC MAP - 100553.1s - HOK/K Industrial



Source: US Geological Survey 1-Degree Digital Elevation Model
Compiled 09/15/92

0 1/4 1/2 1 2
Miles

- Major Roads
- Contour lines (25 foot interval unless otherwise shown)
- Waterways
- Earthquake epicenter, Richter 5 or greater.
- (F)(S) - Closest well according to (F)ederal or (S)tate database in quadrant.
- (P) - Closest public water supply well.

TARGET PROPERTY:	US Department of Energy	CUSTOMER:	HOK/K Industrial
ADDRESS:	Off Mound Rd.	CONTACT:	Shelby R. Politte
CITY/STATE/ZIP:	Miamisburg OH 45432	INQUIRY #:	100553.1s
LAT/LONG:	39.6312 / 84.2884	DATE:	December 13, 1995

GEOCHECK VERSION 2.1
SUMMARY

GEOLOGIC AGE IDENTIFICATION†

Geologic Code:	O3
Era:	Paleozoic
System:	Ordovician
Series:	Upper Ordovician (Cincinnatian)

ROCK STRATIGRAPHIC UNIT†

Category:	Stratified Sequence

GROUNDWATER FLOW INFORMATION

General Topographic Gradient:	General North
General Hydrogeologic Gradient:	The hydrogeologic data for this report indicates that groundwater flow generally is to the South. However, because of the number and/or location of wells, the various depths of aquifers or other insufficient data, the direction of groundwater flow is uncertain.

Note: In a general way, the water table typically conforms to surface topography.‡

USGS TOPOGRAPHIC MAP ASSOCIATED WITH THIS SITE

Target Property:	2439084-F3 MIAMISBURG, OH

FEDERAL DATABASE WELL INFORMATION

WELL QUADRANT	DISTANCE FROM TP	LITHOLOGY	DEPTH TO WATER TABLE
North	1/2 - 1 Mile	Sand and silt	12 ft.
South	1/2 - 1 Mile	Outwash	Not Reported
West	1/4 - 1/2 Mile	Not Reported	24 ft.

STATE DATABASE WELL INFORMATION

WELL QUADRANT	DISTANCE FROM TP
Northern	1/2 - 1 Mile
Southern	>2 Miles

PUBLIC WATER SUPPLY SYSTEM INFORMATION (EPA-FRDS)

Searched by Nearest Well.

Location Relative to TP:	1/2 - 1 Mile North
PWS Name:	MOUND PLANT MANAGER, MAINTENANCE EG&G PO BOX 3000 MIAMISBURG, OH 45343

Well currently has or has had major violation(s): No

AREA RADON INFORMATION

MONTGOMERY COUNTY, OH

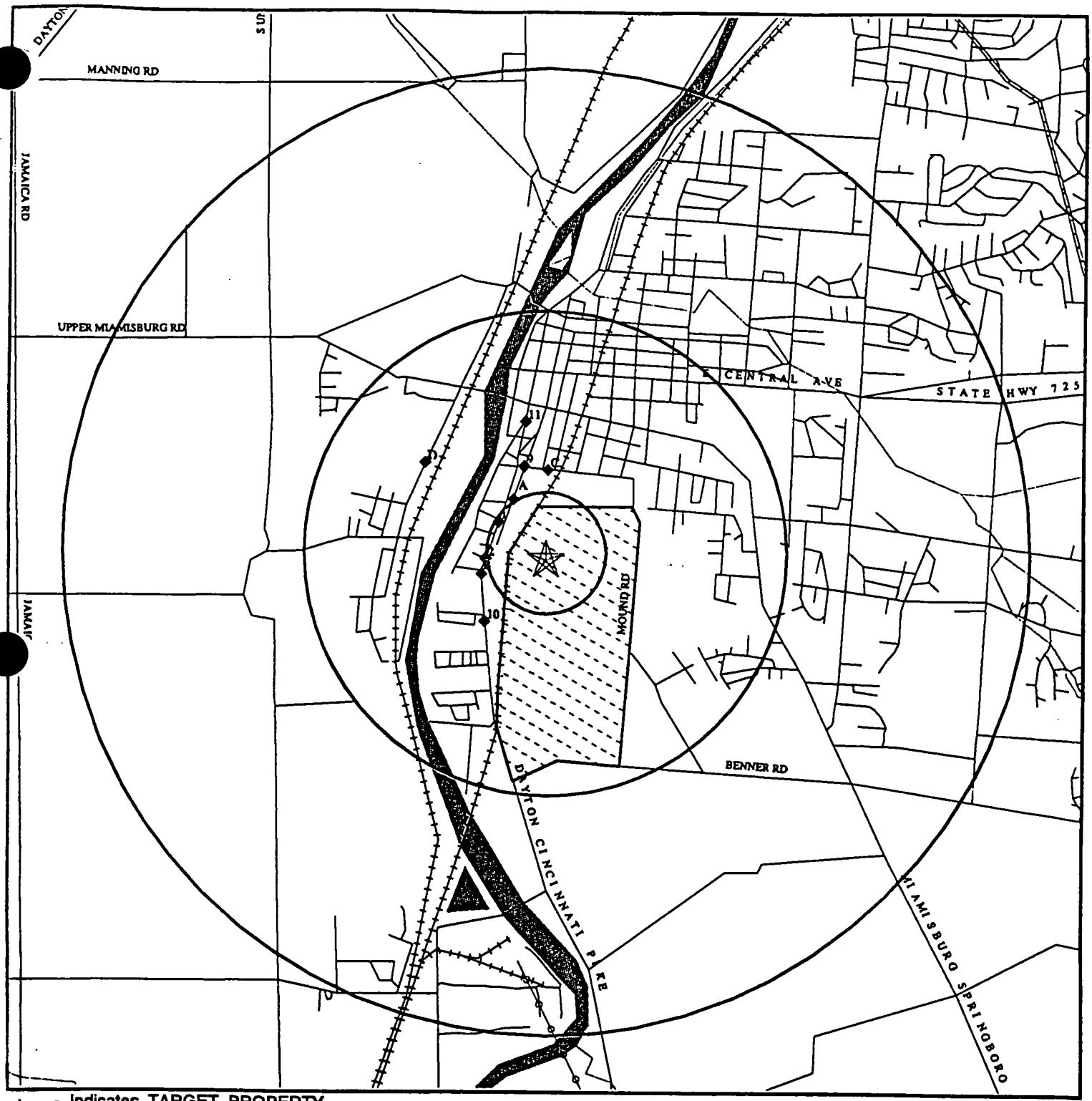
Number of sites tested: 35

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	2.966 pCi/L	77%	23%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	5.963 pCi/L	67%	27%	7%

† Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

‡ U.S. EPA Ground Water Handbook, Vol I: Ground Water and Contamination, Office of Research and development EPA/625/6-90/016a,Chapter 4, page 78, September 1990.

OVERVIEW MAP - 100553.1s - HOK/K Industrial



★ - Indicates TARGET PROPERTY.

▲ - Indicates sites at elevations higher than or equal to the target property.

◆ - Indicates sites at elevations lower than the target property.

- Coal Gasification Sites (if requested)

- National Priority List Sites

0 1/4 1/2 1 2

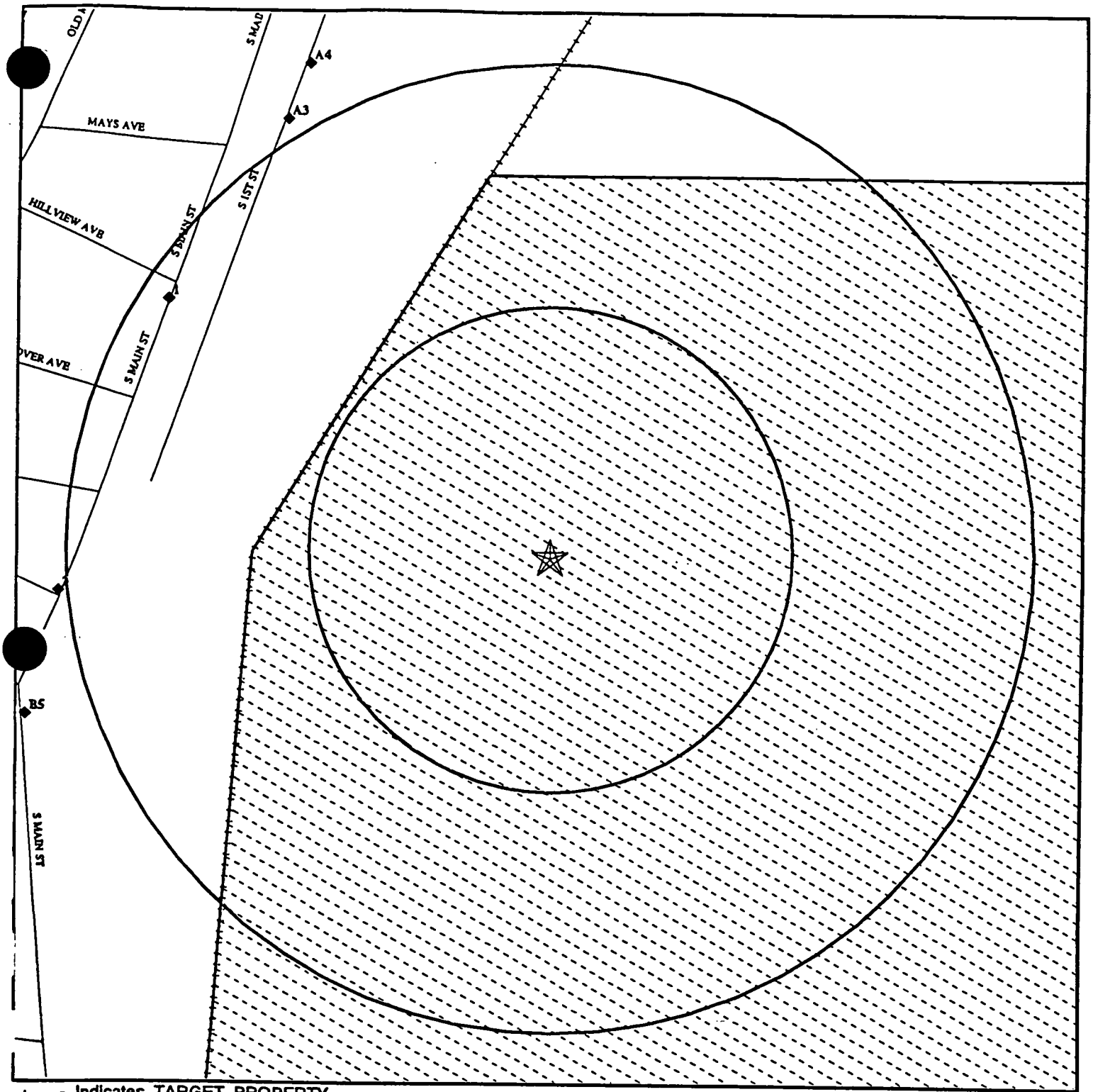
Miles

- Power transmission lines (USGS DLG, 1993)

- Oil & Gas pipelines (USGS DLG, 1993)

TARGET PROPERTY:	US Department of Energy	CUSTOMER:	HOK/K Industrial
ADDRESS:	Off Mound Rd.	CONTACT:	Shelby R. Pollitte
CITY/STATE/ZIP:	Miamisburg OH 45432	INQUIRY #:	100553.1s
LAT/LONG:	39.6312 / 84.2884	DATE:	December 13, 1995

DETAIL MAP - 100553.1s - HOK/K Industrial



★ - Indicates TARGET PROPERTY.

▲ - Indicates sites at elevations higher than or equal to the target property.

◆ - Indicates sites at elevations lower than the target property.

- Coal Gasification Sites (if requested)

- Sensitive Receptors

- National Priority List Sites

0 1/8 1/4

Miles

- Power transmission lines (USGS DLG, 1993)

- Oil & Gas pipelines (USGS DLG, 1993)

TARGET PROPERTY:	US Department of Energy	CUSTOMER:	HOK/K Industrial
ADDRESS:	Off Mound Rd.	CONTACT:	Shelby R. Pollitte
CITY/STATE/ZIP:	Miamisburg OH 45432	INQUIRY #:	100553.1s
LAT/LONG:	39.6312 / 84.2884	DATE:	December 13, 1995

MAP FINDINGS SUMMARY SHOWING ALL SITES

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
NPL		1.330	1	0	0	0	0	1
Delisted NPL		0.330	0	0	0	NR	NR	0
RCRIS-TSD		1.330	0	0	0	0	0	0
State Haz. Waste		1.330	0	0	0	1	0	1
CERCLIS		0.830	1	0	0	0	NR	1
CERC-NFRAP		0.330	0	0	0	NR	NR	0
CORRACTS		1.330	0	0	0	0	0	0
State Landfill		0.830	0	0	0	0	NR	0
LUST		0.830	1	1	3	2	NR	7
UST		0.580	0	0	3	0	NR	3
RAATS		0.330	0	0	0	NR	NR	0
RCRIS Sm. Quan. Gen.		0.580	0	0	4	0	NR	4
RCRIS Lg. Quan. Gen.		0.580	0	0	1	0	NR	1
HMIRS		0.330	0	0	0	NR	NR	0
PADS		0.330	1	0	0	NR	NR	1
ERNS		0.330	0	0	0	NR	NR	0
FINDS		0.330	1	0	4	NR	NR	5
TRIS		0.330	1	0	0	NR	NR	1
NPL Liens		0.330	0	0	0	NR	NR	0
TSCA		0.330	0	0	0	NR	NR	0
MLTS		1.330	0	0	0	0	0	0
ROD		1.330	0	0	0	0	0	0
CONSENT		1.330	0	0	0	0	0	0
OH Spills		0.330	0	0	0	NR	NR	0
Coal Gas		1.000	0	0	0	0	NR	0

TP = Target Property

NR = Not Requested at this Search Distance

* Sites may be listed in more than one database

MAP FINDINGS SUMMARY SHOWING ONLY SITES HIGHER THAN OR THE SAME ELEVATION AS TP

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
NPL		1.330	0	0	0	0	0	0
Delisted NPL		0.330	0	0	0	NR	NR	0
RCRIS-TSD		1.330	0	0	0	0	0	0
State Haz. Waste		1.330	0	0	0	0	0	0
CERCLIS		0.830	0	0	0	0	NR	0
CERC-NFRAP		0.330	0	0	0	NR	NR	0
CORRACTS		1.330	0	0	0	0	0	0
State Landfill		0.830	0	0	0	0	NR	0
LUST		0.830	0	0	0	0	NR	0
UST		0.580	0	0	0	0	NR	0
RAATS		0.330	0	0	0	NR	NR	0
RCRIS Sm. Quan. Gen.		0.580	0	0	0	0	NR	0
RCRIS Lg. Quan. Gen.		0.580	0	0	0	0	NR	0
HMIRS		0.330	0	0	0	NR	NR	0
PADS		0.330	0	0	0	NR	NR	0
ERNS		0.330	0	0	0	NR	NR	0
FINDS		0.330	0	0	0	NR	NR	0
TRIS		0.330	0	0	0	NR	NR	0
NPL Liens		0.330	0	0	0	NR	NR	0
TSCA		0.330	0	0	0	NR	NR	0
MLTS		1.330	0	0	0	0	0	0
ROD		1.330	0	0	0	0	0	0
CONSENT		1.330	0	0	0	0	0	0
OH Spills		0.330	0	0	0	NR	NR	0
Coal Gas		1.000	0	0	0	0	NR	0

TP = Target Property

NR = Not Requested at this Search Distance

* Sites may be listed in more than one database

Map ID / Direction / Distance / Elevation	Site	Database(s)	EDR ID Number / EPA ID Number

Coal Gas Site Search: No site was found in a search of Real Property Scan's ENVIROHAZ database.

NPL
Region

US DOE MOUND PLANT
MOUND RD
MIAMISBURG, OH 45342

Database(s)	EDR ID Number / EPA ID Number
PADS	1000190772
CERCLIS	OH6890008984
FINDS	
NPL	
TRIS	
LUST	

CERCLIS Classification Data:

Site Incident Category:	Not reported	Federal Facility:	YES
Ownership Status:	FEDERALLY OWNED	NPL Status:	CURRENTLY ON THE FINAL NPL
EPA Notes:	Not reported		

CERCLIS Assessment History:

Assessment:	DISCOVERY	Completed:	11/01/1980
Assessment:	PRELIMINARY ASSESSMENT	Completed:	03/25/1986
Assessment:	SCREENING SITE INSPECTION	Completed:	07/14/1989
Assessment:	HAZARD RANKING DETERMINED	Completed:	07/14/1989
Assessment:	PROPOSAL TO NPL	Completed:	07/14/1989
Assessment:	FINAL LISTING ON NPL	Completed:	11/24/1989
Assessment:	TECHNICAL ASSISTANCE	Completed:	Not reported
Assessment:	TECHNICAL ASSISTANCE	Completed:	Not reported
Assessment:	REMOVAL ACTION	Completed:	Not reported
Assessment:	COMBINED RI/FS	Completed:	06/12/1995
Assessment:	REMEDIAL ACTION	Completed:	Not reported
Assessment:	REMEDIAL DESIGN	Completed:	Not reported
Assessment:	RECORD OF DECISION	Completed:	06/12/1995
Assessment:	COMBINED RI/FS	Completed:	Not reported
Assessment:	RECORD OF DECISION	Completed:	Not reported
Assessment:	COMBINED RI/FS	Completed:	Not reported
Assessment:	RECORD OF DECISION	Completed:	Not reported
Assessment:	COMBINED RI/FS	Completed:	Not reported
Assessment:	RECORD OF DECISION	Completed:	Not reported
Assessment:	COMBINED RI/FS	Completed:	Not reported
Assessment:	RECORD OF DECISION	Completed:	Not reported
Assessment:	COMBINED RI/FS	Completed:	Not reported
Assessment:	RECORD OF DECISION	Completed:	Not reported

CERCLIS Site Status:
This site is currently under investigation by the government to assess the extent of further action

CERCLIS Alias Name(s):
US DOE MOUND FACIL
MOUND PLANT (USDOE)

US DOE MOUND PLANT (Continued) 1000190772

NPL:

ID:	05OH073
Date Listed:	11/21/89 (FINAL)
EPA/ID:	Not reported
Haz. Rank Score:	34.61
Status:	LISTED ON NPL
Rank:	Not reported
Group:	15
Ownership:	Federal
Ownership:	Govt. Owned, Contract. Oper.
Permit:	NPDES
Permit:	Air
Permit:	RCRA Interim Status
Permit:	Radioactive
Site Activities:	Landfill, Comm./Indus.
Site Activities:	Spill
Site Activities:	Tank, below ground
Site Condition:	Contam. Drinking Water
Waste Type:	Metals
Waste Type:	Radioactive Substances

Contaminant:	Media Affected:
CALCIUM CYANIDE	Not reported
COPPER CYANIDE	Not reported
PLUTONIUM AND COMPOUNDS, NOS (PU	Not reported
URANIUM AND COMPOUNDS, NOS (U)	Not reported
PLUTONIUM 238	Surface Water

Distance to nearest Population:	Not reported
Population within a 1 Mile Radius:	Not reported
Population within a 2 Mile Radius:	Not reported
Population within a 4 Mile Radius:	Not reported
Vertical Distance to Aquifer:	21 Feet to 75 Feet
Ground Water Use:	Used as Drinking Water, Alternative Source not Available
Distance to nearest Surface Water:	Not reported

Other Pertinent Environmental Activity Identified at Site:
facility has active water discharge permits
facility has an emission permit under the Clean Air Act
civil judicial and administrative enforcement cases against facility
facility is a PCB generator, storer, transporter or permitted disposer

Map ID / Direction / Distance / Elevation	Site	Database(s)	EDR ID Number / EPA ID Number

US DOE MOUND PLANT (Continued) 1000190772

LUST:

Facility ID:	570630	Incident ID:	579108400
Report No:	5791084	Facility Track:	0
Facility Tel:	513-865-4020	Responsibility:	-0-
Owner:	US DEPT OF ENERGY -0- -0-, OH -0- -0-		
Operator:	-0- -0- -0-, OH -0- -0-		
Inspector:	-0-	Revised Date:	07/16/91
Fiscal Track:	F900	Coordinator:	Central Office Corrective Actions
Facility Status:	Initial Corrective Action Program Report		
Classification:	Known suspected or confirmed source and responsible person is voluntarily, or under an informal enforcement action, proceeding with investigation of corrective actions.		
Trust Fund:	Incident eligible for LTF oversight and/or spending - a suspected or confirmed release of petroleum from a regulated UST.		
Emerg Respnse:	2	Response By:	-0-
Vacant:	-, -0-	County Num:	57
Authorized By:	HODNETT	Authorize Date:	07/12/91
Remarks:	0		
Summary:	-0-		
Added Date:	12/18/89	Entry By:	UNGER
Response Srch:	-0-	Priority:	2

1 WNW 1/8-1/4 Lower — DJ CERAMICS, 611 S MAIN ST, MIAMISBURG, OH 45342 — LUST — S101424591 N/A

DJ CERAMICS (Continued) S101424591

LUST:

Facility ID:	-0-	Incident ID:	575048600
Report No:	5750486	Facility Track:	0
Facility Tel:	-0-	Responsibility:	-0-
Owner:	-0-		
	-0-		
	-0-, OH -0-		
	-0-		
Operator:	-0-		
	-0-		
	-0-, OH -0-		
	-0-		
Inspector:	-0-	Revised Date:	-0-
Fiscal Track:	FY95	Coordinator:	Central Office Closure
Facility Status:	Reported		
Classification:	Known suspected or confirmed source and responsible person is voluntarily, or under an informal enforcement action, proceeding with investigation of corrective actions.		
Trust Fund:	Closure of an underground storage tank.		
Emerg Respnse:	2	Response By:	-0-
Vacant:	-, -0-	County Num:	57
Authorized By:	GILL	Authorize Date:	04/20/95
Remarks:	-0-		
Summary:	-0-		
Added Date:	04/20/95	Entry By:	UNGER
Response Srch:	-0-	Priority:	2

---

2 West 1/4-1/2 Lower
CG&R
901 S MAIN ST
MIAMISBURG, OH 45342
LUST S101565590 N/A

LUST:

Facility ID:	572444	Incident ID:	574126900
Report No:	5741269	Facility Track:	0
Facility Tel:	-0-	Responsibility:	-0-
Owner:	-0-		
	-0-		
	-0-, OH -0-		
	-0-		
Operator:	-0-		
	-0-		
	-0-, OH -0-		
	-0-		
Inspector:	-0-	Revised Date:	-0-
Fiscal Track:	FY94	Coordinator:	Central Office Closure
Facility Status:	Reported		
Classification:	Known suspected or confirmed source and responsible person is voluntarily, or under an informal enforcement action, proceeding with investigation of corrective actions.		
Trust Fund:	Closure of an underground storage tank.		
Emerg Respnse:	2	Response By:	-0-
Vacant:	-, -0-	County Num:	57
Authorized By:	GILL	Authorize Date:	07/26/94
Remarks:	-0-		
Summary:	CLOS RPT RECD		
Added Date:	07/26/94	Entry By:	UNGER
Response Srch:	-0-	Priority:	2

Map ID Direction Distance Elevation	Site	Database(s)	EDR ID Number EPA ID Number
A3 NNW 1/4-1/2 Lower	GMC DELCO PRODUCTS DIV 329 EAST FIRST STREET DAYTON, OH 45402	RCRIS-SQG FINDS	1000110283 OHD000817593

RCRIS:
Owner: NAME NOT REPORTED
(312) 555-1212

Contact: KARENANN BERNER
(513) 258-7621

Waste	Quantity	Info Source	Waste	Quantity	Info Source
D000	.00000 (N)	Notification	D001	.00000 (N)	Notification
D002	.00000 (N)	Notification	D003	.00000 (N)	Notification
F001	.00000 (N)	Notification	F002	.00000 (N)	Notification
F003	.00000 (N)	Notification	F005	.00000 (N)	Notification
F006	.00000 (N)	Notification	F007	.00000 (N)	Notification
F008	.00000 (N)	Notification	F009	.00000 (N)	Notification
F010	.00000 (N)	Notification	F011	.00000 (N)	Notification
F012	.00000 (N)	Notification	P029	.00000 (N)	Notification
P030	.00000 (N)	Notification	P074	.00000 (N)	Notification
P098	.00000 (N)	Notification	P104	.00000 (N)	Notification
P106	.00000 (N)	Notification	P121	.00000 (N)	Notification
U159	.00000 (N)	Notification	U160	.00000 (N)	Notification
U188	.00000 (N)	Notification	U210	.00000 (N)	Notification
U220	.00000 (N)	Notification	U226	.00000 (N)	Notification
U239	.00000 (N)	Notification			

(P) = Pounds , (K) = Kilograms , (M) = Metric Tons , (T) = Tons , (N) = Not Reported

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A4 NNW 1/4-1/2 Lower	DAYTON PUBLIC SCHOOLS 348 W FIRST ST DAYTON, OH 45402	RCRIS-SQG FINDS	1000558707 OHD100060912

RCRIS:
Owner: DAYTON PUBLIC SCHOOLS
(513) 461-3000

Contact: PETER WEIMER
(513) 439-0863

Waste	Quantity	Info Source	Waste	Quantity	Info Source
D000	.00000 (N)	Notification	D001	.00000 (N)	Notification
D002	.00000 (N)	Notification	D003	.00000 (N)	Notification
F001	.00000 (N)	Notification	F002	.00000 (N)	Notification
F003	.00000 (N)	Notification	F004	.00000 (N)	Notification
F005	.00000 (N)	Notification			

(P) = Pounds , (K) = Kilograms , (M) = Metric Tons , (T) = Tons , (N) = Not Reported

Other Pertinent Environmental Activity Identified at Site:
facility is involved with pesticide/toxic substances production

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B5 WSW 1/4-1/2 Lower	CITY OF MIAMISBURG PUMP STATIO 1021 S MAIN ST MIAMISBURG, OH 45342	UST	U000694613 N/A

Map ID / Direction / Distance / Elevation	Site	Database(s)	EDR ID Number / EPA ID Number

CITY OF MIAMISBURG PUMP STATIO (Continued) — U000694613

UST:

Facility ID:	0-576024	Tank ID:	1
Capacity:	1,000	Tank Status:	Curr
Tank Age:	7	Owner Name:	CITY OF MIAMISBURG
Product:	Diesel	Owner Address:	PO BOX 570
Material:	Fiberglass	City, State, Zip:	MIAMISBURG, OH 45343
Piping Material:	Copper	Facility Contact:	JESSE MULLINS
Piping Type:	Suction -- No Valve	Telephone:	Not reported
Remed. Des. Tanks:	Not reported		
Remed. Des. Piping:	Not reported		

B6 / WSW / 1/4-1/2 / Lower — RICHARD CHURCH SR ESTATE, 1009 S MAIN ST, MIAMISBURG, OH 45342 — LUST — S101565323, N/A

LUST:

Facility ID:	571192	Incident ID:	570118000
Report No:	5701180	Facility Track:	0
Facility Tel:	-0-	Responsibility:	-0-
Owner:	Not reported -0- -0-, OH -0- -0-		
Operator:	-0- -0- -0-, OH -0- -0-		
Inspector:	-0-	Revised Date:	04/21/92
Fiscal Track:	F900	Coordinator:	Central Office Closure
Facility Status:	No Further Action		
Classification:	Known suspected or confirmed source and responsible person is voluntarily, or under an informal enforcement action, proceeding with investigation of corrective actions.		
Trust Fund:	Closure of an underground storage tank.		
Emerg Respnse:	2	Response By:	-0-
Vacant:	1, -0-	County Num:	57
Authorized By:	GILL	Authorize Date:	04/17/92
Remarks:	0		
Summary:	CLOS RPT RECD		
Added Date:	05/24/90	Entry By:	UNGER
Response Srch:	-0-	Priority:	2

C7 / North / 1/4-1/2 / Lower — PRESTO ADHESIVE PAPER CO INC, 222 MOUND AVE, MIAMISBURG, OH 45342 — FINDS, RCRIS-LQG — 1000389064, OHD004243614

Map ID Direction Distance Elevation	Site	Database(s)	EDR ID Number EPA ID Number

PRESTO ADHESIVE PAPER CO INC (Continued) 1000389064

RCRIS:
Owner: PITNEY BOWES
(312) 555-1212

Contact: ALAN GORSKI
(513) 865-2600

Waste	Quantity	Info Source	Waste	Quantity	Info Source
D001	.00000 (N)	Notification	D003	.00000 (N)	Notification
F005	.00000 (N)	Notification	U002	.00000 (N)	Notification
U112	.00000 (N)	Notification	U140	.00000 (N)	Notification
U159	.00000 (N)	Notification	U220	.00000 (N)	Notification
U239	.00000 (N)	Notification			

(P) = Pounds , (K) = Kilograms , (M) = Metric Tons , (T) = Tons , (N) = Not Reported

Other Pertinent Environmental Activity Identified at Site:
facility has an emission permit under the Clean Air Act

C8 North 1/4-1/2 Lower — TECHNICOTE INC, 222 MOUND AVE, MIAMISBURG, OH 45342 — RCRIS-SQG, UST, LUST — 1000243045, OHD980896468

RCRIS:
Owner: TECHNICOTE
(312) 555-1212

Contact: TOM BLOSSER
(513) 859-4448

Waste	Quantity	Info Source
D001	.00000 (N)	Notification

(P) = Pounds , (K) = Kilograms , (M) = Metric Tons , (T) = Tons , (N) = Not Reported

There are 1 compliance/violation record(s) reported at this site:

Evaluation	Date	Violations
COMPLIANCE EVALUATION INSPECTION (CEI)	14-JAN-88	YES

TECHNICOTE INC (Continued) 1000243045

LUST:

Facility ID:	570319	Incident ID:	573000600
Report No:	5730006	Facility Track:	0
Facility Tel:	-0-	Responsibility:	-0-
Owner:	-0-		
	-0-		
	-0-, OH -0-		
	-0-		
Operator:	-0-		
	-0-		
	-0-, OH -0-		
	-0-		
Inspector:	-0-	Revised Date:	-0-
Fiscal Track:	FY93	Coordinator:	Central Office Closure
Facility Status:	Reported		
Classification:	Known suspected or confirmed source and responsible person is voluntarily, or under an informal enforcement action, proceeding with investigation of corrective actions.		
Trust Fund:	Closure of an underground storage tank.		
Emerg Respnse:	2	Response By:	-0-
Vacant:	-, -0-	County Num:	57
Authorized By:	GILL	Authorize Date:	01/11/93
Remarks:	-0-		
Summary:	-0-		
Added Date:	01/11/93	Entry By:	UNGER
Response Srch:	-0-	Priority:	2

UST:

Facility ID:	0-570319	Tank ID:	1
Capacity:	8,000	Tank Status:	Remv
Tank Age:	Unk	Owner Name:	TECHNICOTE, INC.
Product:	HAZ-69742-89-8	Owner Address:	222 MOUND AVE
Material:	Bare Steel	City, State, Zip:	MIAMISBURG, OH 45342
Piping Material:	Bare Steel	Facility Contact:	MILES D. TREECE
Piping Type:	Suction -- Valve	Telephone:	(513) 859-4448
Remed. Des. Tanks:	Not reported		
Remed. Des. Piping:	Not reported		

Facility ID:	0-570319	Tank ID:	2
Capacity:	8,000	Tank Status:	Remv
Tank Age:	Unk	Owner Name:	TECHNICOTE, INC.
Product:	Not reported	Owner Address:	222 MOUND AVE
Material:	Bare Steel	City, State, Zip:	MIAMISBURG, OH 45342
Piping Material:	Bare Steel	Facility Contact:	MILES D. TREECE
Piping Type:	Suction -- Valve	Telephone:	(513) 859-4448
Remed. Des. Tanks:	Not reported		
Remed. Des. Piping:	Not reported		

Map ID / Direction / Distance / Elevation	Site	Database(s)	EDR ID Number / EPA ID Number

TECHNICOTE INC (Continued) 1000243045

Facility ID:	0-570319	Tank ID:	3
Capacity:	500	Tank Status:	Remv
Tank Age:	Unk	Owner Name:	TECHNICOTE, INC.
Product:	Not reported	Owner Address:	222 MOUND AVE
Material:	Bare Steel	City, State, Zip:	MIAMISBURG, OH 45342
Piping Material:	Bare Steel	Facility Contact:	MILES D. TREECE
Piping Type:	Suction -- Valve	Telephone:	(513) 859-4448
Remed. Des. Tanks:	Not reported		
Remed. Des. Piping:	Not reported		

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9 NNW 1/4-1/2 Lower — PLOCHER ANDREW SONS, 418 E FIRST ST, DAYTON, OH 45402 — RCRIS-SQG, FINDS — 1000170454, OHD004243937

RCRIS:
Owner: PLOCHER ANDREW SONS
(312) 555-1212
Contact: CHUCK KRAFT
(513) 228-6128

Waste	Quantity	Info Source	Waste	Quantity	Info Source
D001	.00000 (N)	Notification	F003	.00000 (N)	Notification
F005	.00000 (N)	Notification			

(P) = Pounds , (K) = Kilograms , (M) = Metric Tons , (T) = Tons , (N) = Not Reported

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10 SW 1/4-1/2 Lower — SHELL OIL CO. #23420931760, 1224 S MAIN ST, DAYTON, OH 45409 — UST — U000894456, N/A

UST:

Facility ID:	0-570157	Tank ID:	1
Capacity:	8,000	Tank Status:	Curr
Tank Age:	25	Owner Name:	SHELL OIL CO.
Product:	Gasoline	Owner Address:	7777 WASHINGTON VILLAGE DR
Material:	Fiberglass	City, State, Zip:	DAYTON, OH 45459
Piping Material:	Fiberglass	Facility Contact:	MIKE HORVATH
Piping Type:	Pressure	Telephone:	Not reported
Remed. Des. Tanks:	Not reported		
Remed. Des. Piping:	Not reported		

Facility ID:	0-570157	Tank ID:	2
Capacity:	10,000	Tank Status:	Curr
Tank Age:	25	Owner Name:	SHELL OIL CO.
Product:	Gasoline	Owner Address:	7777 WASHINGTON VILLAGE DR
Material:	Fiberglass	City, State, Zip:	DAYTON, OH 45459
Piping Material:	Fiberglass	Facility Contact:	MIKE HORVATH
Piping Type:	Pressure	Telephone:	Not reported
Remed. Des. Tanks:	Not reported		
Remed. Des. Piping:	Not reported		

SHELL OIL CO. #23420931760 (Continued) U000894456

Facility ID:	0-570157	Tank ID:	3
Capacity:	10,000	Tank Status:	Curr
Tank Age:	24	Owner Name:	SHELL OIL CO.
Product:	Gasoline	Owner Address:	7777 WASHINGTON VILLAGE DR
Material:	Fiberglass	City, State, Zip:	DAYTON, OH 45459
Piping Material:	Fiberglass	Facility Contact:	MIKE HORVATH
Piping Type:	Pressure	Telephone:	Not reported
Remed. Des. Tanks:	Not reported		
Remed. Des. Piping:	Not reported		

Facility ID:	0-570157	Tank ID:	4
Capacity:	1,000	Tank Status:	Curr
Tank Age:	22	Owner Name:	SHELL OIL CO.
Product:	Used Oil	Owner Address:	7777 WASHINGTON VILLAGE DR
Material:	Bare Steel	City, State, Zip:	DAYTON, OH 45459
Piping Material:	Bare Steel	Facility Contact:	MIKE HORVATH
Piping Type:	Pressure	Telephone:	Not reported
Remed. Des. Tanks:	Not reported		
Remed. Des. Piping:	Not reported		

11
North
1/2-1
Lower

POINT STORE
155 S MAIN ST
MIAMISBURG, OH 45342

LUST S100648047
N/A

LUST:

Facility ID:	570738	Incident ID:	573182400
Report No:	5731824	Facility Track:	0
Facility Tel:	-0-	Responsibility:	-0-
Owner:	-0-		
	-0-		
	-0-, OH -0-		
	-0-		
Operator:	-0-		
	-0-		
	-0-, OH -0-		
	-0-		
Inspector:	-0-	Revised Date:	-0-
Fiscal Track:	FY93	Coordinator:	Central Office Closure
Facility Status:	Reported		
Classification:	Known suspected or confirmed source and responsible person is voluntarily, or under an informal enforcement action, proceeding with investigation of corrective actions.		
Trust Fund:	Closure of an underground storage tank.		
Emerg Respnse:	2	Response By:	-0-
Vacant:	-, -0-	County Num:	57
Authorized By:	GILL	Authorize Date:	09/07/93
Remarks:	-0-		
Summary:	-0-		
Added Date:	09/23/93	Entry By:	UNGER
Response Srch:	-0-	Priority:	2

D12
NW
1/2-1
Lower

MIAMISBURG WATER TREATMENT PLT
302 S RIVERVIEW
MIAMISBURG, OH 45342

LUST S101565457
N/A

Map ID / Direction / Distance / Elevation	Site	Database(s)	EDR ID Number / EPA ID Number

MIAMISBURG WATER TREATMENT PLT (Continued) S101565457

LUST:

Facility ID:	570747	Incident ID:	572089900
Report No:	5720899	Facility Track:	0
Facility Tel:	-0-	Responsibility:	-0-
Owner:	-0-		
	-0-		
	-0-, OH -0-		
	-0-		
Operator:	-0-		
	-0-		
	-0-, OH -0-		
	-0-		
Inspector:	-0-	Revised Date:	05/14/92
Fiscal Track:	FY92	Coordinator:	Central Office Closure
Facility Status:	No Further Action		
Classification:	Known suspected or confirmed source and responsible person is voluntarily, or under an informal enforcement action, proceeding with investigation of corrective actions.		
Trust Fund:	Closure of an underground storage tank.		
Emerg Respnse:	2	Response By:	-0-
Vacant:	1, -0-	County Num:	57
Authorized By:	GILL	Authorize Date:	05/13/92
Remarks:	-0-		
Summary:	CLOS RPT RECD		
Added Date:	04/23/92	Entry By:	UNGER
Response Srch:	-0-	Priority:	2

D13 NW 1/2-1 Lower — MIAMISBURG WELL FIELD / UNK SOURCE; 302 S RIVERVIEW AVE; MIAMISBURG, OH 45342 — SHWS — S100037719 / N/A

SHWS:

Facility ID:	557-1359	EPA ID:	NOT ASSIGNED	Prelim. Assessment Date:	Not reported
Priority:	HIGH - There is evidence or it is suspected that hazardous waste has been managed and there is evidence of a release of hazardous waste which which may present a substantial threat to public health or safety.				
Problem:	GW ORGANICS				

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)	Facility ID
BEAVERCREEK	U001964051	CATES SALES & SERVICE	3310 DAYTON XENIA RD	45432	UST	0-292261
BEAVERCREEK	S101562515	DYES PENNZOIL	3851 DAYTON XENIA RD	45432	LUST	-0-
BEAVERCREEK	S101562533	TOMS QUICK LUBE	3815 DAYTON XENIA RD	45432	LUST	-0-
BEAVERCREEK	S101562553	KNOLLWOOD GARDEN CENTER	3766 DAYTON XENIA RD	45432	LUST	-0-
BEAVERCREEK	U000892037	KNOLLWOOD MARATHON	3844 DAYTON-XENIA RD	45432	UST	0-290099
BEAVERCREEK	U000696152	DYE'S KNOLLWOOD PENNZOIL	3851 DAYTON-XENIA RD	45432	UST	0-294274
DAYTON	U001431511	BOONE WATER SYSTEMS, INC.	1519 S CENTRAL DR	45432	UST, LUST	290587
DAYTON	U000892071	TOM'S SUTO QUICK LUBE SERVIE I	3815 DAYTON XENIA RD	45432	UST	0-293719
DAYTON	U000894584	KNOLLWOOD FLORIST, INC.	3766 DAYTON XENIA RD	45432	UST	0-570895
DAYTON	1000990750	UES INC	4401 DAYTON-XENIA RD	45432	RCRIS-SQG	
DAYTON	1000289261	PHILLIPS SAND & GRAVEL	NORTH FAIRFIELD RD	45432	FINDS, CERC-NFRAP, SHWS	
MIAMISBURG	S100031602	UNKNOWN	ADJ 150 RIVERVIEW AVE	45342	LUST	-0-
MIAMISBURG	U002223400	PENNZOIL	8681 DAYTON CINCINNATI PIKE	45342	UST	0-572210
MIAMISBURG	U000894692	GARY L. JESTICE	72 N MAIN ST	45342	UST	0-577617
MIAMISBURG	U000894676	WYLIE F. FAULKNER	110 N MAIN ST	45342	UST	0-576514
MIAMISBURG	U001964188	C G & R	901 S MAIN ST	45342	UST	0-572444
MIAMISBURG	U001431648	THE POINTE	155 S MAIN ST	45342	UST	0-570738
MIAMISBURG	U001431608	FRALEY FENCE	311 N MAIN ST	45342	UST	0-570049
MIAMISBURG	U000894675	CITY OF MIAMISBURG	600 N MAIN ST	45342	UST	0-576023
MIAMISBURG	S100779275	US DOE MOUND FACILITY*	MOUND RD	45342	SHWS	
MIAMISBURG	U001431691	MONARCH MARKING SYS INC	ST RT 725 AND BYERS RD	45432	UST	0-574851

GEOCHECK VERSION 2.1 ADDENDUM
FEDERAL DATABASE WELL INFORMATION

Well Closest to Target Property (North Quadrant)

BASIC WELL DATA

Site ID:	393819084173900	Distance from TP:	1/2 - 1 Mile
Site Type:	Single well, other than collector or Ranney type		
Year Constructed:	1990	County:	Montgomery
Altitude:	692.17 ft.	State:	Ohio
Well Depth:	44.00 ft.	Topographic Setting:	Not Reported
Depth to Water Table:	11.50 ft.	Prim. Use of Site:	Observation
Date Measured:	11271990	Prim. Use of Water:	Unused

LITHOLOGIC DATA

Geologic Age ID (Era/System/Series):	Cenozoic-Quaternary-Pleistocene
Principal Lithology of Unit:	Sand and silt
Further Description:	SILT/SAND BROWN

WATER LEVEL VARIABILITY

Not Reported

GEOCHECK VERSION 2.1
FEDERAL DATABASE WELL INFORMATION

Well Closest to Target Property (South Quadrant)

BASIC WELL DATA

Site ID:	393724084172900	Distance from TP:	1/2 - 1 Mile
Site Type:	Single well, other than collector or Ranney type		
Year Constructed:	1964	County:	Montgomery
Altitude:	698.00 ft.	State:	Ohio
Well Depth:	226.00 ft.	Topographic Setting:	Valley flat
Depth to Water Table:	Not Reported	Prim. Use of Site:	Withdrawal of water
Date Measured:	Not Reported	Prim. Use of Water:	Industrial

LITHOLOGIC DATA

Geologic Age ID (Era/System/Series):	Cenozoic-Quaternary-Pleistocene
Principal Lithology of Unit:	Outwash
Further Description:	Not Reported

WATER LEVEL VARIABILITY

Not Reported

GEOCHECK VERSION 2.1
FEDERAL DATABASE WELL INFORMATION

Well Closest to Target Property (West Quadrant)

BASIC WELL DATA

Site ID:	393757084173600	Distance from TP:	1/4 - 1/2 Mile
Site Type:	Single well, other than collector or Ranney type		
Year Constructed:	1955	County:	Montgomery
Altitude:	691.00 ft.	State:	Ohio
Well Depth:	95.00 ft.	Topographic Setting:	Valley flat
Depth to Water Table:	24.13 ft.	Prim. Use of Site:	Withdrawal of water
Date Measured:	12311975	Prim. Use of Water:	Public supply

LITHOLOGIC DATA

Not Reported

WATER LEVEL VARIABILITY

Not Reported

GEOCHECK VERSION 2.1
STATE DATABASE WELL INFORMATION

Water Well Information:

Well Within 1/2 - 1 Mile of Target Property (Northern Quadrant)

PWS ID:	5701212	Population Served:	18,500
Latitude:	0393813	Longitude:	0841744
Owner:	MIAMISBURG,CITY OF		
Source:	Ground		

Well Within >2 Miles of Target Property (Southern Quadrant)

PWS ID:	8301412	Population Served:	7,800
Latitude:	0393505	Longitude:	0841733
Owner:	SPRINGBORO,VLG.OF-CHAUTAUQUA		
Source:	Ground		

GEOCHECK VERSION 2.1
PUBLIC WATER SUPPLY SYSTEM INFORMATION

Searched by Nearest Well.

PWS SUMMARY:

PWS ID:	OH5744912	PWS Status:	Active	Distance from TP:	1/2 - 1 Mile
Date Initiated:	Not Reported	Date Deactivated:	Not Reported	Dir relative to TP:	North
PWS Name:	MOUND PLANT MANAGER, MAINTENANCE EG&G PO BOX 3000 MIAMISBURG, OH 45343				
Addressee / Facility Type:	Not Reported				
Facility Name:	Not Reported				
Facility Latitude:	39 38 34		Facility Longitude:	084 17 12	
City Served:	Not Reported:				
Treatment Class:	Treated		Population Served:	1,001 - 2,500 Persons	

Well currently has or has had major violation(s): No

EPA Waste Codes Addendum

Code	Description
D000	NOT DEFINED
D001	IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.
D002	A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.
D003	A MATERIAL IS CONSIDERED TO BE A REACTIVE HAZARDOUS WASTE IF IT IS NORMALLY UNSTABLE, REACTS VIOLENTLY WITH WATER, GENERATES TOXIC GASES WHEN EXPOSED TO WATER OR CORROSIVE MATERIALS, OR IF IT IS CAPABLE OF DETONATION OR EXPLOSION WHEN EXPOSED TO HEAT OR A FLAME. ONE EXAMPLE OF SUCH WASTE WOULD BY WASTE GUNPOWDER.
F001	THE FOLLOWING SPENT HALOGENATED SOLVENTS USED IN DEGREASING: TETRACHLOROETHYLENE, TRICHLOROETHYLENE, METHYLENE CHLORIDE, 1,1,1-TRICHLOROETHANE, CARBON TETRACHLORIDE, AND CHLORINATED FLUOROCARBONS; ALL SPENT SOLVENT MIXTURES/BLENDS USED IN DEGREASING CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.
F002	THE FOLLOWING SPENT HALOGENATED SOLVENTS: TETRACHLOROETHYLENE, METHYLENE CHLORIDE, TRICHLOROETHYLENE, 1,1,1-TRICHLOROETHANE, CHLOROBENZENE, 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE, ORTHO-DICHLOROBENZENE, TRICHLOROFLUOROMETHANE, AND 1,1,2-TRICHLOROETHANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE LISTED IN F001, F004, OR F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.
F003	THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.
F004	THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: CRESOLS AND CRESYLIC ACID, AND

EPA Waste Codes Addendum

Code	Description
	NITROBENZENE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.
F005	THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.
F006	WASTEWATER TREATMENT SLUDGES FROM ELECTROPLATING OPERATIONS EXCEPT FROM THE FOLLOWING PROCESSES: (1) SULFURIC ACID ANODIZING OF ALUMINUM; (2) TIN PLATING ON CARBON STEEL; (3) ZINC PLATING (SEGREGATED BASIS) ON CARBON STEEL; (4) ALUMINUM OR ZINC-ALUMINUM PLATING ON CARBON STEEL; (5) CLEANING/STRIPPING ASSOCIATED WITH TIN, ZINC AND ALUMINUM PLATING ON CARBON STEEL; AND (6) CHEMICAL ETCHING AND MILLING OF ALUMINUM.
F007	SPENT CYANIDE PLATING BATH SOLUTIONS FROM ELECTROPLATING OPERATIONS
F008	PLATING BATH RESIDUES FROM THE BOTTOM OF PLATING BATHS FROM ELECTROPLATING OPERATIONS WHERE CYANIDES ARE USED IN THE PROCESS.
F009	SPENT STRIPPING AND CLEANING BATH SOLUTIONS FROM ELECTROPLATING OPERATIONS WHERE CYANIDES ARE USED IN THE PROCESS.
F010	QUENCHING BATH RESIDUES FROM OIL BATHS FROM METAL HEAT TREATING OPERATIONS WHERE CYANIDES ARE USED IN THE PROCESS.
F011	SPENT CYANIDE SOLUTIONS FROM SALT BATH POT CLEANING FROM METAL HEAT TREATING OPERATIONS.
F012	QUENCHING WASTE WATER TREATMENT SLUDGES FROM METAL HEAT TREATING OPERATIONS WHERE CYANIDES ARE USED IN THE PROCESS.
P029	COPPER CYANIDE
P029	COPPER CYANIDE CU(CN)
P030	CYANIDES (SOLUBLE CYANIDE SALTS), NOT OTHERWISE SPECIFIED
P074	NICKEL CYANIDE
P074	NICKEL CYNAIDE NI(CN)2
P098	POTASSIUM CYANIDE
P098	POTASSIUM CYANIDE K(CN)
P104	SILVER CYANIDE
P104	SILVER CYANIDE AG(CN)

EPA Waste Codes Addendum

Code	Description
P106	SODIUM CYANIDE
P106	SODIUM CYANIDE NA(CN)
P121	ZINC CYANIDE
P121	ZINC CYANIDE ZN(CN)2
U002	ACETONE (I)
U002	2-PROPANONE (I)
U112	ACETIC ACID ETHYL ESTER (I)
U112	ETHYL ACETATE (I)
U140	ISOBUTYL ALCOHOL (I,T)
U140	1-PROPANOL, 2-METHYL- (I,T)
U159	2-BUTANONE (I,T)
U159	METHYL ETHYL KETONE (MEK) (I,T)
U160	2-BUTANONE, PEROXIDE (R,T)
U160	METHYL ETHYL KETONE PEROXIDE (R,T)
U188	PHENOL
U210	ETHENE, TETRACHLORO-
U210	TETRACHLOROETHYLENE
U220	BENZENE, METHYL-
U220	TOLUENE
U226	ETHANE, 1,1,1-TRICHLORO-
U226	METHYL CHLOROFORM
U239	BENZENE, DIMETHYL- (I,T)
U239	XYLENE (I)

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Elapsed ASTM days: Provides confirmation that this EDR report meets or exceeds the 90-day updating requirement of the ASTM standard.

FEDERAL ASTM RECORDS:

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System
Source: EPA/NTIS
Telephone: 703-416-0702
CERCLIS: CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 08/31/95 — Date of Data Arrival at EDR: 11/02/95
Date Made Active at EDR: 12/04/95 — Elapsed ASTM days: 32

ERNS: Emergency Response Notification System
Source: EPA
Telephone: 202-260-2342
ERNS: Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/31/94 — Date of Data Arrival at EDR: 04/11/95
Date Made Active at EDR: 05/25/95 — Elapsed ASTM days: 44

NPL: National Priority List
Source: EPA
Telephone: 703-603-8852
NPL: National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, it is EDR's policy to plot NPL sites greater than approximately 500 acres in size as areas (polygons). Sites smaller in size are point-geocoded at the site's address.

Date of Government Version: 09/01/95 — Date of Data Arrival at EDR: 10/17/95
Date Made Active at EDR: 10/25/95 — Elapsed ASTM days: 8

RCRIS: Resource Conservation and Recovery Information System
Source: EPA/NTIS
Telephone: 703-308-7907
RCRIS: Resource Conservation and Recovery Information System. RCRIS includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA).

Date of Government Version: 05/31/95 — Date of Data Arrival at EDR: 06/28/95
Date Made Active at EDR: 08/22/95 — Elapsed ASTM days: 55

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

FEDERAL NON-ASTM RECORDS:

CONSENT: Superfund (CERCLA) Consent Decrees
Source: EPA Regional Offices
Telephone: Varies
Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: Varies — Date of Next Scheduled Update: 09/01/95

CORRACTS: Corrective Action Report
Source: EPA
Telephone: 703-308-7907
CORRACTS: CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 04/10/95 — Date of Next Scheduled Update: 12/18/95

FINDS: Facility Index System
Source: EPA/NTIS
Telephone: 800-908-2493
FINDS: Facility Index System. FINDS contains both facility information and "pointers" to other sources that contain more detail. These include: RCRIS, PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), FATES (FIFRA [Federal Insecticide Fungicide Rodenticide Act] and TSCA Enforcement System, FTTS [FIFRA/TSCA Tracking System]), CERCLIS, DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), FRDS (Federal Reporting Data System), SIA (Surface Impoundments), CICIS (TSCA Chemicals in Commerce Information System), PADS, RCRA-J (medical waste transporters/disposers), TRIS and TSCA.

Date of Government Version: 07/27/94 — Date of Next Scheduled Update: 01/08/96

HMIRS: Hazardous Materials Information Reporting System
Source: U.S. Department of Transportation
Telephone: 202-366-4555
HMIRS: Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 12/31/94 — Date of Next Scheduled Update: 04/30/96

MLTS: Material Licensing Tracking System
Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 08/01/95 — Date of Next Scheduled Update: 01/15/96

NPL LIENS: Federal Superfund Liens
Source: EPA
Telephone: 202-260-8969
NPL LIENS: Federal Superfund Liens. Under the authority granted the USEPA by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner receives notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/91 — Date of Next Scheduled Update: 02/26/96

PADS: PCB Activity Database System
Source: EPA
Telephone: 202-260-3992
PADS: PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 10/14/94 — Date of Next Scheduled Update: 02/19/96

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

RAATS: RCRA Administrative Action Tracking System
Source: EPA
Telephone: 202-564-4104
RAATS: RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA.

Date of Government Version: 04/17/95 Date of Next Scheduled Update: 12/18/95

ROD: Records Of Decision
Source: NTIS
Telephone: 703-416-0703
Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 03/31/95 Date of Next Scheduled Update: 03/04/96

TRIS: Toxic Chemical Release Inventory System
Source: EPA/NTIS
Telephone: 202-260-2320
TRIS: Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/92 Date of Next Scheduled Update: 04/12/96

TSCA: Toxic Substances Control Act
Source: EPA/NTIS
Telephone: 202-260-1444
TSCA: Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site. USEPA has no current plan to update and/or re-issue this database.

Date of Government Version: 01/31/95 Date of Next Scheduled Update: 03/18/96

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

STATE OF OHIO ASTM RECORDS:

LUST: List of Reported Petroleum Underground Storage Tank Release Incidents
Source: Department of Commerce
Telephone: 614-752-7926
LUST: Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 11/01/95
Date Made Active at EDR: 12/05/95
Date of Data Arrival at EDR: 11/06/95
Elapsed ASTM days: 29

SHWS: Master Sites List
Source: Ohio Environmental Protection Agency
Telephone: 614-644-3143
SHWS: State Hazardous Waste Sites. State hazardous waste site records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. Available information varies by state.

Date of Government Version: 04/01/95
Date Made Active at EDR: 05/16/95
Date of Data Arrival at EDR: 04/24/95
Elapsed ASTM days: 22

SWF/LS: Licensed Solid Waste Facilities
Source: Ohio Environmental Protection Agency
Telephone: 614-644-2621
SWF/LS: Solid Waste Facilities/Landfill Sites. SWF/LS type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Section 2004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 04/22/95
Date Made Active at EDR: 07/27/95
Date of Data Arrival at EDR: 06/26/95
Elapsed ASTM days: 31

UST: Facility File
Source: Department of Commerce
Telephone: 614-752-7926
UST: Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

Date of Government Version: 09/01/95
Date Made Active at EDR: 10/10/95
Date of Data Arrival at EDR: 09/18/95
Elapsed ASTM days: 22

STATE OF OHIO NON-ASTM RECORDS:

SPILLS: Inclused Reported Incidents, Spills or Releases to The Environment
Source: Ohio EPA
Telephone: 614-644-2084
SPILLS: All reported incidents, spills or releases to the environment.

Date of Government Version: 12/31/93
Date of Next Scheduled Update: 12/18/95

Historical and Other Database(s)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Former Manufactured Gas (Coal Gas) Sites: The existence and location of Coal Gas sites is provided exclusively to EDR by Real Property Scan, Inc. ©Copyright 1993 Real Property Scan, Inc. For a technical description of the types of hazards which may be found at such sites, contact your EDR customer service representative.

Disclaimer Provided by Real Property Scan, Inc.

The information contained in this report has predominantly been obtained from publicly available sources produced by entities other than Real Property Scan. While reasonable steps have been taken to insure the accuracy of this report, Real Property Scan does not guarantee the accuracy of this report. Any liability on the part of Real Property Scan is strictly limited to a refund of the amount paid. No claim is made for the actual existence of toxins at any site. This report does not constitute a legal opinion.

DELISTED NPL: Delisted NPL Sites
Source: EPA
Telephone: 703-603-8769
DELISTED NPL: The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

NFRAP: No Further Remedial Action Planned
Source: EPA/NTIS
Telephone: 703-416-0702
NFRAP: As of February 1995, CERCLIS sites designated "No Further Remedial Action Planned" (NFRAP) have been removed from CERCLIS. NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund action or NPL consideration. EPA has removed approximately 25,000 NFRAP sites to lift the unintended barriers to the redevelopment of these properties and has archived them as historical records so EPA does not needlessly repeat the investigations in the future. This policy change is part of the EPA's Brownfields Redevelopment Program to help cities, states, private investors and affected citizens to promote economic redevelopment of unproductive urban sites.

FRDS: Federal Reporting Data System
Source: EPA/Office of Drinking Water
Telephone: 202-260-2805
FRDS provides information regarding public water supplies and their compliance with monitoring requirements, maximum contaminant levels (MCL's), and other requirements of the Safe Drinking Water Act of 1986.

Area Radon Information: The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

Oil/Gas Pipelines/Electrical Transmission Lines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines and electrical transmission lines.

Sensitive Receptors: There are individuals who, due to their fragile immune systems, are deemed to be especially sensitive to environmental discharges. These typically include the elderly, the sick, and children. While the exact location of these sensitive receptors cannot be determined, EDR indicates those facilities, such as schools, hospitals, day care centers, and nursing homes, where sensitive receptors are likely to be located.

USGS Water Wells: In November 1971 the United States Geological Survey (USGS) implemented a national water resource information tracking system. This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on more than 900,000 wells, springs, and other sources of groundwater.

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1994 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

Water Dams: National Inventory of Dams
Source: Federal Emergency Management Agency
Telephone: 202-646-2801
WATER DAMS: National computer database of more than 74,000 dams maintained by the Federal Emergency Management Agency.

Ohio Public Water Systems
Source: Ohio EPA, Division of Drinking & Groundwater

EXHIBIT D

COMPREHENSIVE TABULATION OF POTENTIAL RELEASE SITES

Table A.1. Comprehensive Tabulation of Potential Release Sites

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes[a]	Results	Ref
1	Miami-Erie canal (north pond)	C-5	Historical	Plutonium-238, tritium	1, 8, 5	Plutonium-238	S, SW	10	13	Table B.9	18, 1
2	Miami-Erie canal (south pond)	C-5	Waters of the U.S.						3, 13	Tables B.6, B.7, B.8, B.9, and B.11	15 19
3	Miami-Erie canal (north canal)	D-4 E-4 F-4 G-4	Waters of the U.S.					19	2, 3, 4, 5, 6, 13, 16	Tables B.6, B.7, B.8, B.9, and B.10	16
4	Miami-Erie canal (runoff hollow)	G-4	Tributary Drainage			Tritium			13	Table B.9	18, 1
5	Miami-Erie canal (south canal)	I-4 J-4 K-4 L-4	Waters of the U.S.						2, 3, 4, 5, 6, 13, 16	Tables B.9 and B.10	16
6	Miami-Erie canal (overflow creek)	M-4 N-4	Waters of the U.S.						13	Table B.9	16
7	Plant Sanitary Pipeline	H-5 I-3 I-4	In service	Plutonium-238		Suspected	S	4	16	see item 88	20
8	Site Sanitary Landfill	I-5	Historical	Contaminants listed under Historic Landfill	4, 5, 18	None Suspected			No Data		
9	Area 18, Site Sanitary Landfill Cover	I-5	In service	Plutonium-238 Thorium	1, 18				2, 3, 4, 5, 6, 10, 11, 14, 16	Table B.1 (Table IV.7 in Ref. 6) Tables B.6, B.7, B.8 and B.9	6, 24
10	Historic Landfill	I-4 I-5	Historical	Administrative and laboratory trash	1, 4, 5, 18	Suspected VOCs	GW, S	4, 18	14	Table B.9 (Table IV.7 in Ref. 6)	6
				Beryllium, Mercury, Nickel carbonyl, Trichloroethene, carbon tetrachloride, Lithium hydride, Benzene, Alcohol, Acetone, Polychlorinated biphenyl oils, Waste antifreeze, Waste oil, Paints, Solvents, Photo-processing solutions, Plating solutions					2, 3, 4, 5, 6	Tables B.6, B.7, B.8 and B.9	24
				Sediment from plant drainage ditch					3		
				Bioassay samples							
				Scintillation "cocktails"							

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes[a]	Results	Ref
11	Area 2, Thorium and Polonium-Contaminated Wastes (AKA Crusted Drums)	I-4 I-5	Historical	Polonium-210, thorium-contaminated drums, Polonium-210 contaminated sand and debris Thorium sludge constituents, Plutonium-238	1, 4, 5, 18	Thorium and daughters	S	1, 4	14 2, 3, 4, 5, 6 10, 11, 14, 16	Table B.1 (Table III.1 in Ref. 6) Tables B.6, B.7, B.8 and B.9	6 24
12	Area B Drum Storage Area	I-5	Historical	Chemical wastes	4	None Suspected			2, 3, 4, 5, 6 10, 11, 14, 16	Tables B.6, B.7, B.8 and B.9	24
13	Trash Incinerator	J-5	Historical	Solid Waste	4	None Suspected			No Data		
14	Area C, Waste Storage Area (AKA Drum Staging Area and Chemical Waste Storage Area)	H-6	Historical	VOCs	4, 5, 7	Suspected, not confirmed	S	7	3, 4, 5, 6 14	Tables B.6, B.7, B.8, and B.9 RSS[c] Location S0518 (Appendix E in Ref. 6)	7 6
15	Area C, Lithium Burn Area (AKA Lithium Carbonate Disposal)	H-5	Historical	Lithium Hydride	4	Possible lithium residues, not confirmed	S	4, 7	2, 3, 4, 5, 6, 7, 8, 9, 10 14	Tables B.6, B.7, B.8, and B.9 RSS[c] Locations S0552 and S0553 (Appendix E in Ref. 6)	7 6
16	Area C, Past Hazardous Waste Storage Area (AKA old Building 72) see related site 345	H-6	Historical	Potential contaminants listed under Hazardous Waste Storage Area	4, 5, 18	Minor, historically remediated	S	18	4	Table B.6	18
17	Oil Burn Structure	H-5	Inactive	Aviation fuel, benzene, toluene, ethyl benzene, xylenes	5, 7, 18	Confirmed EPH, dioxin/furans		7, 18	2, 3, 4, 5, 6, 7, 8, 9, 10	Tables B.6, B.7, B.8, and B.9	7
18	Building 34, Fire Fighting Training Facility Pits	H-5	Inactive	Diesel Fuel	5, 7, 18	Confirmed EPH		7, 18	3, 4, 5, 6, 7, 8, 9, 10 14	Tables B.6, B.7, B.8, and B.9 RSS Location S0556 (Appendix E in Ref. 6)	7 6
19	Building 34, Historical Firefighting Training Pit	H-5	Histrorical	Diesel Fuel		Suspected Confirmed dioxin/furan	S, SW S	10 7	2, 3, 4, 5, 6, 7, 8, 9	Tables B.6, B.7, B.8, and B.9	7

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes[a]	Results	Ref
20	Building 34 Aviation Fuel Storage Tank (Tank 219)	H-5	Historical	Aviation fuel	3, 5, 18	Tank removed, VOC residuals		7, 18, 22	3, 4, 5, 6, 8	Tables B.6, B.7, and B.8	7, 22
21	Building 1 Leach Pit (Area I)	G-6	Surplus	Wastewater from explosives processes Organic solvents (primarily acetone)	1, 4, 5, 18	Suspected, not confirmed		7, 18	3, 4, 5, 6 14	Tables B.6, B.7, B.8, and B.9 RSS[c] Location S0504 (Appendix E in Ref. 6)	7 6
22	Building 1 Explosives Wastewater Settling Basin (Tank 200)	G-6	Surplus	Wastewater from explosives processes Organic solvents	3, 4, 5, 18	Suspected		7, 18	No Data		4
23	Building 43 Explosives Wastewater Settling Basin (Tank 201)	G-6	Surplus	Explosives production process wastes	3, 11	Suspected		7, 18	No Data		
24	Building 43 Solvent Storage Tank (Tank 221)	G-6	Never used Removed	None suspected (never used)	3	Suspected		7, 18	No Data		
25	Building 27 Leach Pit (Area I)	H-6	Surplus	Wastewater from explosives processes Organic solvents (primarily acetone)	1, 4, 5, 18	Suspected, not confirmed		7, 18	3, 4, 5, 6, 12	Tables B.6, B.7,and B.8	4, 7
26	Building 27 Concrete Flume (Tank 217)	G-6	Surplus	Wastewater from explosives processes Organic solvents (primarily acetone)	3, 5, 18	Suspected, not confirmed		7, 18	3, 4, 5, 6, 12	Tables B.6, B.7, and B.8	4, 7
27	Building 27 Settling Sump (Tank 218)	G-6	Surplus	Wastewater from explosives processes Organic solvents (primarily acetone)	3, 4, 5, 18	Suspected, not confirmed		7, 18	3, 4, 5, 6, 12	Tables B.6, B.7, and B.8	4, 7
28	Building 27 Solvent/Drum Storage Area	G-6	Surplus	Wastewater from explosives processes Organic solvents (acetone and ethanol)	4, 5, 18	Suspected, not confirmed		7, 18	3, 4, 5, 6, 12	Tables B.6, B.7, and B.8	7
29	Building 27 Filtration System	G-6	Inactive	Wastewater from explosives processes Organic solvents		Not Suspected		7, 18	No Data		

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes[a]	Results	Ref
30	Building 27 Diesel Fuel Storage Tank (Tank 123) (AKA Building 27 Propane Tank)	G-6	Inactive	Tank is actually above ground	3				Not Applicable		
31	Underground Sanitary Sewer Line G5	H-5	In service	Organic solvents	5, 18			7, 18	3, 4, 5, 6, 10, 11, 12, 14, 16	Tables B.6, B.7, and B.8	7
32	Underground Sanitary Sewer Line G12	F-8 G-8		Plating solutions, Laboratory chemicals							
33	Underground Sanitary Sewer Line G14 EAST	H-5 H-6				Suspected, not confirmed	S	2, 7	3, 4, 5, 6, 10, 11, 12, 14, 16	Tables B.6, B.7, B.8, and B.9	7
34	Underground Sanitary Sewer Line G14 WEST	H-5 H-6		Nitric acid, Hydrochloric acid							
35	Underground Sanitary Sewer Lines G19 & G14	G-5		Methylene chloride							
36	Underground Sanitary Sewer Line G15	E-9		Strong acids and bases							
37	Building 51 Waste Solvent Storage Tank (Tank 220)	F-8	Historical	Organic solvents, Paints, Waste oils	3, 4, 5, 18	Tank Removed 1991, VOC residuals	S	4, 23	3, 4, 5, 6, 8	Tables B.6, B.7 and B.8	7, 23
38	Building 51 Waste Incinerator	F-8	Historical	Contaminants listed under Bldg. 51 Waste Solvent Storage Tank (Tank 220)	4, 5		A	4	No Data		
39	Building 51 Waste Incinerator Scrubber	F-8	Historical	Combustion products from Bldg. 51 Waste Incinerator	4, 5	Water released to plant drainage ditch	SW	4	No Data		
40	Building 66 Lot	F-8	Grounds	Plutonium-238 from unknown source	6	Plutonium-238	S	6	13	Table B.1 RSS[c] Location S0323 (Appendix E in Ref. 6)	6

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes[a]	Results	Ref
41	Area 3, Thorium Drum Storage and Redrumming Area	G-5 H-5	Grounds	Thorium-232 and daughters	1, 4, 5, 6, 18	Thorium dust	S	4, 6	14, 16 1	Table B.1 (Table V.2 in Ref. 6) SGS[b], Table B.5 Locations 5221 and 5222	6 12
42	Area A, Construction Soils from T Building	H-5	Grounds	Construction soil from T Bldg.	1	None Suspected			No Data		
43	Wastewater Treatment plant Building 57 Grit Chamber (Tank 101)	H-5	In service	Sanitary wastewaters	3, 4, 5						
44	Building 57 Grit Conveyor					None Suspected	S	4	No Data on soils		
45	Building 57 Comminuter (Tank 102)			Water softener backwashes discharged to storm sewer							
46	Building 57 Equalization Basin (Tank 103)			Plutonium-238 and other radionuclides		Treated effluent	SW	4	Water analyses submitted		
47	Building 57 Equalization Basin (Tank 104)					released to Great			monthly to OEPA in		
48	Building 57 Equalization Basin (Tank 105)					Miami River via			accordance with permit		
49	Building 57 Equalization Basin (Tank 106)					closed pipeline					
50	Building 57 Aeration Basin (Tank 107)					NPDES permitted					
51	Building 57 Aeration Basin (Tank 108)					outfall 001					
52	Building 57 Clarifier (Tank 109)										
53	Building 57 Clarifier (Tank 110)										

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes[a]	Results	Ref
54	Building 57 Sand Filters (2 units)	(Cont.)	(Cont.)	(Cont.)	(Cont.)	(Cont.)	(Cont.)	(Cont.)	(Cont.)		
55	Building 57 Chlorine contact chamber (Tank 111)										
56	Building 57 Chlorine contact chamber (Tank 112)										
57	Sludge Drying Beds	H-5	Historical	Plutonium-238	4, 5, 18	Suspected	S	4	14	Table B.9	6
58	Dredge Spoil Drying Beds	H-5	Surplus	Contaminants listed under Asphalt-Lined Pond	4, 5, 18	Suspected	S	4	No Data		
59	Contaminated Soil Box Storage Area	G-6	Historical	Plutonium-238	4, 5, 18	Suspected			14	Table B.9	6
60	Hazardous Waste Storage Area (Building 72)	G-5	In service	Combustible and flammable liquids, Waste oils, Solvent-containing wastes, Ignitable wastes, Plating wastes, Photo-processing wastes, Polymeric wastes, Toxic wastes	4, 5, 18	None Suspected			1 14	SGS[b] Table B.5 Locations 5221 and 5222 Table B.9 RSS[c] Location C0103 (Appendix E in Ref. 6)	12 6
61	Building 72 Outdoor Hazardous Waste Storage Area		Inactive	Waste oils	4, 5, 18				1 14	SGS[b] Table B.5 Locations 5221 and 5222 Table B.9 RSS[c] Location S0541 (Appendix E in Ref. 6)	12 6
62	Building 72 Empty Drum Storage Area		In service	None suspected	4, 5, 18				1	SGS[b] Table B.5 Locations 5221 and 5222	12

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes[a]	Results	R
63	Building 19 Soils	G-5	Grounds	Cobalt-60	10	Cobalt-60	S	10	1	SGS[b] Table B.5 Location 5221	1
									14, 16	Table B.9 RSS[c] Locations C0099, C0100, S0530, S0532, S0533, S0534, S0535, S0538 (Appendix E in Ref. 6)	
64	Building 19 Historic Gasoline Tank (Tank 238)	G-5	Historical	Gasoline	3	No information on when tanks were removed			No Data		
65	Building 61 Area, Former Heavy Equipment Area	E-10	Historical	Waste oil	1, 5, 7, 18	Suspected	S	7, 10	3, 4, 5, 6, 8	Tables B.6, B.7, B.8, and B.9	7
									1	SGS[b], Table B.3 Locations 2216 and 2217	1
									14	RSS[c] Locations S0233, S0234, S0235, S0236, S0237, S0240 (Appendix E in Ref. 6)	
66	Area 7, Thorium and Polonium Wastes	E-8 E-9 F-8 F-9	Historical	Plutonium-238, Thorium-232 and -238, Polonium-210, Actinium-227, Radium-226, Cesium-137	1, 4, 5, 18	Suspected	S	4, 12, 18	14, 15, 16	Table B.1 (Table III.5 in Ref. 6)	
									1	SGS[b] Table B.3	1

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes[a]	Results	Re
67	Plant Drainage Ditch	F-4 F-5 F-6 F-7 F-8 G-4 G-5 G-6 G-7 G-8 H-4 H-5 H-6 H-7	In service, Waters of the U.S.	Plutonium-238, Thorium, Tritium Fuel oil, boiler blowdown water, ethylene glycol, sodium sulfite, sodium phosphate, octadecylamin, cyclohexylamine Effluent from asphalt-lined pond	4, 5, 18	Plutonium-238 Oil Zinc chromate Calcium chloride Ethylene glycol	SW	10	1 14, 15	Table B.9 RSS[c] Locations S0401, S0420, S0442, S0443, S0449, S0505, S0506, S0514, S0554 (Appendix E and Table X.4 in Ref. 6) SGS[b] Table B.3 Locations 4158 and 4159 Table B.1	6 1
68	Asphalt-Lined Pond	E-9	In service, Waters of the U.S.	Wastewater from SM/PP Hill Storm Sewers Plutonium-238 Non-contact cooling water - cooling tower blowdown, regeneration of zeolite water softeners	4, 5, 18	Effluent to Plant Drainage Ditch	SW	4	3 2	Table B.8 Table B.9	1E 1E
69	Overflow Pond	H-5 I-5	In service, Waters of the U.S.	Site sanitary landfill leachate, plutonium-238 Effluent from plant drainage ditch Stormwater runoff	4, 5, 18	Zinc chromate Calcium chloride Ethylene glycol	SW	10			
70	Retention Basins and Weir Basin	H-5	In service, Waters of the U.S.	Stormwater runoff Effluent from Plant Drainage Ditch Plutonium-238	4, 5, 18		SW				
71	Building 85 Waste Solvent Tank (Tank 136)	I-5	Inactive	None (never used)	3	Never Used			No Data		

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes[a]	Results	Re
72	Area 13, Polonium-Contaminated Wood from Dayton Unit IV	H-7	Historical	Polonium-210	1, 4, 5	None Suspected	S	6	14	Tables B.1 and B.9	6
73	Evaporator Storage Area (AKA Lower storage area)	H-7	Historical	Actinium-227, Cesium-137, Radium-226	4				14, 15, 16	Table B.9 RSS[c] Locations S0692 and S0697 (Appendix E in Ref. 6)	6
74	Quonset Hut (former)	H-7	Historical	Polonium-210, cobalt-60, bismuth					14	Table B.9 RSS[c] Locations S0684, S0685, and S0689 (Appendix E in Ref. 6)	6
75	Railroad Siding	G-6 G-7	Inactive	Thorium and daughters	4	Suspected thorium	S	4	14	Table B.1	6
76	Warehouse 9	G-7	Historical	Thorium-232	4	Suspected thorium	S	4	No Data		
77	Warehouse 10	G-9	Historical	Polonium-210	4	None suspected			No Data		
78	Warehouse 13	G-9	Historical	Reactor waste including Strontium-90, Cesium-137, and Nickel-63	4	Cesium 137	S	4	No Data		
79	Warehouse 15	E-8	Historical	Radioactive waste Plutonium-238 wastes and sludge Thorium sludge constituents (c)	4	Suspected	S	4	See Area 7 (No. 66)	Table B.9	6
80	Warehouse 15A	F-8	Historical	Plutonium-238, thorium	4						
81	Drilling Mud Drum Storage Areas (3 locations)	H-5 I-4	Historical	Barium	4, 5, 18	None Suspected			No Data		
82	Building 57 Diesel Fuel Storage Tank (Tank 118)	H-5	In service	Diesel fuel	3				No Data		
83	Building 2 Propane Storage Tank (Tank 122)	H-7	Inactive	Propane	3				No Data		
84	Building 56 Diesel Fuel Storage Tank (Tank 223)	F-5	Historical	Diesel fuel	3	Tank Removed			No Data		

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes[a]	Results	Re
85	Building 29 Solvent Storage Shed	E-8	Inactive	Acetone	4	Suspected	S	4	1 14	SGS[b] Table B.3 Location 2137 Table B.9 RSS Location S0275	12 6
86	Building 29 Septic Tank (Tank 224)	E-9	Historical	Actinium-227, Radon-222, Thorium-228, Radium-226	3, 4, 6	Suspected	S	4, 6	2	Table B.9 (See discussion for Area 7 in Ref. 6)	6
87	Building 49 Solvent Storage Shed	G-7	Inactive	Organic solvents (including trichloroethene, isopropanol, ethanol, freon-TF, hexane)	4 9	Suspected	S	4	No Data		
88	Tritium in Buried Valley Aquifer	H-4	Historical	Tritium	1 18	Tritium, historically remediated	GW	18	16	Table B.9	11 18
89	Test Fire Residual Storage Area	H-7	In service	Unexploded detonation devices	4, 5, 18	None Suspected		5	No Data		
90	Site Survey Project Potential Hot Spot Location S0425	G-8	Grounds	Thorium	6	Unknown			14	Table B.9 (Appendix E in Ref. 6)	6
91	Main Hill Seep 0601	F-5	NA	Tritium, VOCs	5, 18	Tritium, VOCs	SW	13	3, 4, 5, 10, 11, 16	Tables B.6, B.7, B.8, and B.9	18
92	Main Hill Seep 0602	G-7	NA	Tritium, VOCs	5, 18	Tritium, VOCs	SW	13	3, 4, 5, 10, 11, 16	Tables B.6, B.7, B.8, and B.9	18
93	Main Hill Seep 0603	D-8	NA	Tritium, VOCs	5, 18	Tritium, VOCs	SW	13	No Data		
94	Main Hill Seep 0604	D-6	NA	Tritium, VOCs	5, 18	Tritium, VOCs	SW	13	No Data		
95	Main Hill Seep 0605	D-6	NA	Tritium, VOCs	5, 18	Tritium, VOCs	SW	13	3, 4, 5, 10, 11, 16	Tables B.6, B.7, B.8, and B.9	18
96	Main Hill Seep 0606	C-7	NA	Tritium, VOCs	5, 18	Tritium, VOCs	SW	13	No Data		
97	Main Hill Seep 0607	C-7	NA	Tritium, VOCs	5, 18	Tritium, VOCs	SW	13	3, 4, 5, 10, 11, 16	Tables B.6, B.7, B.8, and B.9	18
98	Main Hill Seep 0608	D-6	NA	Tritium, VOCs	5, 18	Tritium, VOCs	SW	13	3, 4, 5, 10, 11, 16	Tables B.6, B.7, B.8, and B.9	18

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes[a]	Results	Ref
99	Area 6, WD Building Filter-Cleaning Waste	D-8	Historical	Polonium-210, Cobalt-60, Radium-226	1, 4, 5, 6, 18	Suspected	S	4	2, 14	Table B.1 (Table III.4 in Ref. 6)	6
100	Area F, Chromium Trench	D-8	Historical	Chromium plating bath solution treated with sodium bisulfide, cadmium, nickel, silver	1, 4, 5, 18	Suspected	S	4	1	SGS[b] Table B.4 Locations 1109, 1110	12
101	Cooling Tower Basins	E-7 E-8	In service	Sulfuric acid Chromates NALCO 2575 (phosphonate base, tolytriazole, polyacrylate, sodium chromate) NALCO 2532 (bistributyltin) oxide, n-alkylidimethylbenzyl ammonium chloride, potassium hydroxide) NALCO 2590 (calcium hypochlorite) ANCO CSA (phosphonate base, tolytriazole, polyacrylate) MICROBICIDE 77 (5-chloro-2 methyl-4-isothiazolin-3-one, 2-methyl-4-isothiazolin-3-one) ANCO ALGAECIDE No. 1 (2-benzyl-4-chlorophenol, sodium hydroxide) SILTEX (sodium polyacrylate) ANCOCIDE 4020 (glutaraldehyde) ANCOSPERSE 3830 (polyalkylene glycol, n-alkyldimethylbenzylammonium chloride) ANCOOL 3310 (phosphonate, triazole, sodium molybdate, sodium hydroxide)	4, 5, 18	Blowdown water is released to storm sewer and drainage ditch.		4	No Data		

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes[a]	Results	Ref
102	Cooling Tower Drum Storage Area	E-7 E-8	In service	Contaminants listed under Cooling Tower Basins Ethylene glycol	4, 5				No Data		
103	E Building Soils	E-6 E-7 F-7	Grounds			Indicated by Soil Gas Survey	S	12	1 14	SGS[b] Table B.4 Locations 1046, 1047, 1048, 1066, 1067 Table B.9 RSS[c] Locations S0152, S0153, S0164 (Appendix E in Ref. 6)	12 6
104	Scintillation Vial Storage Area	E-6	In service	Tritium, Trimethylbenzene	4, 5, 18	None suspected (within E Building)			No Data		
105	E Building Solvent Storage Shed	F-6	Historical	Trichloroethene, Ethanol, Methanol	4, 5, 18	Closed before construction of E Building Annex, soil removed	S	4	1	SGS[b] Table B.4 Location 1066	12
106	G Building Soils (AKA Garage Area)	E-7	Grounds	Waste oil, Waste antifreeze, Automotive batteries Asbestos	1, 4, 18	Suspected petroleum products			1 14	SGS[b] Table B.4 Locations 1019 Table B.9 RSS[c] Locations S0137 and S0141 (Appendix E in Ref. 6)	12 6
107	G Building Gasoline Tank (Tank 202)	E-7	Historical	Gasoline	3, 18	Tanks removed 1986, petroleum contaminated soils removed		3, 18	No Data		
108	G Building Gasoline Tank (Tank 203)	E-7	Historical								

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes[a]	Results	Ref
109	G Building Gasoline Tank (Tank 204)	E-7	Historical	(Cont.)	(Cont.)	(Cont.)		(Cont.)	(Cont.)		
110	I Building Soils	E-6 F-6	Grounds	Toluene, acetone, Freon	4	Indicated by Soil Gas Survey	S	12	1	SGS[b] Table B.4 Locations 1075, 1227, 1228	12
									14, 16	Table B.9 RSS Locations S0171, S0178, S0181, S0183, S0186, S0187, S0190, S0193, S0195, S0255 (Appendix E in Ref. 6)	6
111	Monitor Well 0034	F-7	Surplus	Waste oil	5, 18	Suspected	GW	5	No Data		
112	Paint Shop Area	E-7	In service	Paints, Thinners, Solvents (including toluene and methylene chloride) Lead, Chromates	1, 4, 5, 18	Suspected, confirmed lead	S	5	3, 4, 5, 6, 16	Tables B.6, B.7, B.8, and B.9	7
113	Powerhouse Soils	E-7	Grounds	Calcium chloride, magnesium chloride, zinc chromate, PCBs	4	Indicated by Soil Gas Survey	S	12	1	SGS[b] Table B.4 Location 1052	12
									14, 16	Table B.9 RSS[c] Locations S0155, S0156, S0158, S0253 (Appendix E in Ref. 6)	6
114	Powerhouse Fuel Oil Storage Tank (Tank 113)	E-7	In service	Fuel oil	1, 3, 5, 7, 18	Fuel Oil, confirmed EPH	S	10, 7	3, 4, 5, 6, 8	Tables B.6, B.7, and B.8	7
115	Powerhouse Fuel Oil Storage Tank (Tank 114)										
116	Powerhouse Fuel Oil Storage Tank (Tank 115)										
117	Powerhouse Fuel Oil Storage Tank (Tank 116)										

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes[a]	Results	Ref
118	M Building Soils	E-7	Grounds	Copper cyanide, Silver cyanide Machine oils, Solvents	4	Oils, Copper cyanide, Silver cyanide	S	10	1 14	SGS[b] Table B.4 Locations 1050, 1051, 1062 Table B.9 RSS[c] Locations S0162, S0163, S0252 (Appendix E in Ref. 6)	12 6
119	Room M-38 Metal Plating Rinse Water Sump (Tank 225)	E-7	Surplus	Rinse waters from metal plating operations. Possible contaminants include nickel, cadmium, silver, gold, manganese, cyanide, and aluminum. Sodium hydroxide solution Potassium permanganate	3, 4	None Suspected			No Data		
120	Room M-108 Metal Plating Rinse Water Tank (Tank 119)	E-7	In service	Rinse waters from metal plating operations. copper, gold, silver, nickel, aluminum, and uranium	3, 4	Silver cyanide	SW	10	No Data		
121	Vapor Degreasers	E-7	In service	Perclene D (perchloroethylene)	4, 5, 18	None Suspected			No Data		
122	Underground Radioactive Waste Lines (Main Hill)	E-6 F-6	Inactive	Alpha wastes from SW Bldg., R Bldg., and H Bldg. Wastewater from B Building Plutonium-238, Cobalt-60	4, 18	Suspected	S	4, 10	No Data		
123	Area 5, Radioactive Waste Line Break	F-6 F-7	Grounds	Cobalt-60, Cesium-137, Plutonium-238	1, 5, 18	Cobalt-60	S	1, 18	2, 14, 16	Table B.1 (Table III.3 in Ref. 6)	6
124	Building 48 Hillside	F-6	Inactive	Plutonium-238		Plutonium-238	S	6	14	Table B.1	6
125	Underground Sanitary Sewer Line G24	F-6	In service	Organic solvents, Plating Solutions, Laboratory chemicals, Nitric acid, Hydrochloric acid, Methylene chloride, Strong acids and bases		Suspected	S	5, 18	3, 4, 5, 6, 14, 16	Tables B.6, B.7, and B.8	7
126	Building 28 Solvent Storage Area	E-8	Grounds	Organic solvents (including alcohol, methylene chloride, and acetone)	4, 5, 9, 18	Suspected	S	4	1	SGS[b] Table B.4 Location 1054	12

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes[a]	Results	Ref
127	Building 28 Solvent Storage Shed	E-8	In Service	Organic solvents (including alcohol, methylene chloride, and acetone)	4, 5, 18	Suspected	S	4	1	SGS[b] Table B.4 Locations 1190 and 1231	12
128	DS Building Solvent Storage Shed	F-7	In service	Organic solvents (including 1,1,1-trichloroethane, trichlorofluoromethane, ethanol, and trichloroethane)	4, 5, 18	Suspected	S	4	1	SGS[b] Table B.4 Location 1194 No Hits	12
									14	Table B.9 RSS[c] Location S0128 (Appendix E in Ref. 6)	6
129	B Building Solvent Storage Shed	E-6	Inactive	Organic solvents (including trichloroethene, trichlorofluoromentane, ethanol, methonal, isopropanol, acetone, methylene chloride, toluelene) Oils	4, 5, 18	Suspected	S	4	1	SGS[b] Table B.4 Locations 1202, 1203	12
									14	Table B.9 RSS[c] Location S0146 (Appendix E in Ref. 6)	6
130	B Building Temporary Drum Storage Area	E-6	Inactive	Waste solvents, waste oil, and trash from E and B Bldgs.	4						
131	SW Building Soils	E-6 F-6	Grounds	Tritium, Radium-226, Actinium-227, Thorium-232	4, 6, 18	Tritium beneath the building	S	1, 18	14, 16	Table B.1 RSS[c] Locations S0154 and S0180 (Appendix E in Ref. 6)	6
132	Area 15, Entombed SW Cave (Room SW 1-B)	F-6	Historical	Radon-222, Radium-226, Actinium-227, Thorium-228	1, 4, 6, 18	Radon-222	A	1, 6	No Data		
133	SW Building Room 1-A	F-6	Historical	High-activity wastewater from radium and actinium processing, reactor waste including Radium-226, Actinium-227, Cesium-137, Plutonium-238, and Uranium-238.	4	Cesium-137 (sealed in concrete in building floor)		4	No Data		
134	SW Building Drum Storage Area	E-6	In service	Hazardous wastes Asbestos, Waste oils, Antifreeze	4, 5, 18				14	Table B.9 RSS[c] Location S0180 (Appendix E in Ref. 6)	6
135	Room SW-8 Beta Wastewater Tank (Tank 20)	F-6	In service	Tritium	3, 4				No Data		

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes[a]	Results	Ref
136	Room SW-125 Beta Wastewater Tank (Tank 21)	F-6	In service	Tritium	3, 4	Suspected historical leaks			No Data		
137	Room SW-143 Beta Wastewater Tank (Tank 22)	F-6	In service	Tritium	3, 4	Tanks lined			No Data		
138	Room SW-137 Alpha Wastewater Sump (Tank 23)	E-6 F-6	Inactive	Alpha wastewater from drains, sinks, and processes in SW Bldg - Uranium-238.	3, 4	Suspected uranium-233			No Data		
139	Room SW-10 Beta Wastewater Sump (Tank 226)	F-6	Inactive	tritium	3, 4	Suspected historical leaks, tank lined			No Data		
140	Beta Waste Solidification Facility - SW Building	E-6 F-6	In service	tritium Waste oils including vacuum pump, gear box, and diffusion pump oils.	4				No Data		
141	Tritium Effluent Removal System	E-6	In service	Vacuum pump oils Organic solvents Tritium wastewater		Tritium	A	4, 10	No Data		
142	SW/R Building Solid Radioactive Waste Compactor	E-6 F-6	In service	Tritium	4				No Data		
143	R/SW/T Building Stack Diesel Fuel Storage Tank (Tank 117)	F-6	In service	Diesel fuel	3				1	SGS[b] Table B.5 Location 1021	12
144	R Building Sanitary Waste Collection Tank (Tank 120)	F-6	In service	Sanitary wastes	3, 4				No Data		
145	Room R-128 Alpha Wastewater Tank (Tank 19)	E-6	In service	Alpha wastewater generated in R Bldg. Possible contaminants include Pu-238,-239, Ra-226, and Ac-227	3, 4				No Data		
146	R Building Rooms 121, 144, 146, and 148 entombed drains	F-6	Historical	Radium-226, Actinium-227	4	Sealed in concrete in building floor drains		4	No Data		

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes[a]	Results	Re
147	HH Building Soils	F-7	Grounds	Polonium-210, cobalt-60, tritium	4, 18	Indicated by Soil Gas Survey	S	12	1	SGS[b] Table B.4 Locations 1114, 1119, 1206, 1207, 1230	12
148	HH Building Solidification Unit	F-7	Historical	Cobalt-60, Polonium-210	4	Unknown			No Data		
149	HH Building Pilot Incinerator	F-7	Historical	Polonium-210	4	Probable air releases in 1951	A		No Data		
150	Room HH-15 Beta Wastewater Sump (Tank 236)	F-7	Inactive	Beta wastewater from restrooms and process area floor drains - tritium	3	Unknown			No Data		
151	Room HH-6 Alpha Wastewater Sump (Tank 237)	F-7	Historical	Alpha wastewater from process area floor drains. Possible contaminants include polonium-210, cobalt-60, and bismuth.	3, 4	Unknown - filled with concrete			No Data		
152	HH Building Beta Wastewater Sump (Tank 24)	F-7	In service	Beta wastewater from process area sinks and floor drains	3, 4	Unknown			No Data		
153	Area 20, Radioactive Waste Line Break	G-7	Grounds	Sodium nitrate, Plutonium-238, Cesium-137, Thorium, Cobalt-60	4, 5, 18	Cobalt-60	S	6, 18	1 2, 14, 16	SGS[b] Table B.4 Locations 1119 and 1120 Table B.1 (Table III.8 in Ref. 6)	12 6
154	Area 23, Thorium Contaminated Soil	F-6 G-6	Grounds	Thorium-230	18	Thorium-230	S	6	1 2	SGS[b] Table B.4 Location 1122 Table B.1 RSS[c] Location S1092 (Appendix E in Ref. 6)	12 6
155	Old Sanitary Disposal (SD) Plant (AKA Old Sanitary Wastewater Treatment Plant)	F-6	Surplus	Chromic acid, Calcium cyanide, Nickel sulfate, Nickel chloride, Black oxide, Copper cyanide	4, 5, 18	Unknown			No Data		
156	Old SD plant Tank (Tank 205)	F-6	Surplus	Polonium-210, Cobalt-60	3, 5						

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes[a]	Results	Re
157	Old SD plant Tank (Tank 206)	F-6	Surplus	Photo-processing solutions							
158	Old SD plant Tank (Tank 207)	F-6	Surplus	Metal Finishing Rinse Water	3, 5	Unknown			No Data		
159	Area 4A, Sewage Sludge Drying Pits	F-5 F-6 G-5 G-6	Surplus	Sanitary wastewaters		SD Plant effluent was released to pit	S	4, 6	1	SGS[b] Table B.4 Locations 1124 and 1127 Table B.5 Location 5225	12
				Sludge from old sanitary wastewater tréatment plant							
				Plutonium-238, Thorium, Cesium-137, Cobalt-60					4, 5, 6	Tables B.6 and B.7	8
				Calcium cyanide, Nickel Sulfate, Nickel chloride, Black oxide, Copper Cyanide					14, 16	Table B.1 (Table III.2 in Ref. 6)	6
				Radioactive wastes, Process effluent, Metal finishing rinse water					3	Table B.8	8
160	Mixed Waste Storage Area (Building 23)	G-6	In service	Tritium, Thorium compounds, Uranium compounds, Plutonium-238	4, 5, 18	None Suspected			No Data		
				Trimethylbenzene, Octane, Oils, cleaning materials, Polychlorinated biphenyls, Lead							
				Various chemicals (including mercury, acids, solvents)							
161	Glass Melter Furnace	F-6	Inactive	Ion exchange resins	4, 5, 18	Test burns only	A	4, 7	No Data		
				Plutonium-238, Cobalt, Strontium, Cesium							
				SD Building sludge							
				Scintillation fluid constituents							
				Acetonitriles							
				Nitrate salt wastes							
162	Glass Melter Feed Drum			Liquid solvent wastes							
163	Off-Gas Treatment System Deluge Tank										

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes[a]	Results	Ref
164	Off-Gas Treatment System Venturi Scrubber	F-6	Inactive	Contaminants listed under Glass Melter Furnace and Cyclone Incinerator	4, 5, 18	Test burns only	A	4, 7	No Data		
165	Off-Gas Treatment System Cyclone Demister										
166	Off-Gas Treatment System HEPA Filter										
167	Off-Gas Treatment System WD Building Filter Bank										
168	Off-Gas Treatment System Recycle Tank										
169	Off-Gas Treatment System Strainer										
170	Off-Gas Treatment System Leaf Solution Filter	F-6	Historical			Filter removed and replaced			No Data		
171	Off-Gas Treatment System Iodine Absorption Filter	F-6	Historical	None suspected (never used)	4, 5, 18				No Data		
172	WDA Building Basement Wash Sump (Tank 11) (AKA Glass Melter Room Sump)	F-6	In service	Alpha wastewater from floor and sink drains in WD Annex Bldg. Possible contaminants include acrylonitrile, phenol, acetonitrile, kerosene, chlorobenzene, carbon tetrachloride, xylene, acetone, ethanol, and methylene chloride.	3, 4, 5, 18	None Suspected beyond routine operation			3, 4, 5, 6, 8, 16	Tables B.6, B.7, B.8, and B.9	3, 7
173	Cyclone Incinerator	F-6 G-6	Historical	Plutonium-238 Tributyl phosphate Kerosene Vacuum pump oils	4, 5, 18	None Suspected			No Data		
174	WD Building Drum Staging Area	F-6	In service	Solidified plutonium sludge from the Alpha Wastewater Treatment System Low specific activity decontamination and decommissioning wastes	4, 5, 18	Suspected, not confirmed	S	4	3, 4, 5, 6, 13, 16	Tables B.6, B.7, B.8, and B.9	7

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes[a]	Results	Ref
175	Area 4, WD Building Influent Tank Overflow	F-6	Surplus	Plutonium-238	1, 4, 5, 18	Low risk waste overflowed influent tank	S	10	1	SGS[b] Table B.4 Locations 1124 and 1127 Table B.5 Location 5225	12
									4, 5, 6	Tables B.6, B.7, and B.8	8
									14, 16	Table B.1 (Table III.2 in Ref. 6)	6
176	Area 14, Radioactive Waste Line Break	G-5 G-6	Historical	Plutonium-238, nitric acid	1, 4, 5, 18	Plutonium-238	S, SW	6, 10	1	SGS[b] Table B.4 Locations 1125 and 1126 No Hits	12
									4, 5, 6	Tables B.6, B.7, and B.8	8
									14, 15	Table B.1 (Table IV.4 in Ref. 6)	6
177	Building 41 Alpha Wastewater Tank (Tank 208)	G-6	Historical	Alpha wastewater from SM Bldg. and Bldg. 38 Plutonium-238, nitric acid	3, 4	Suspected Plutonium-238, removed 1985	S	10	See data for Area 19		
178	Building 41 Alpha Wastewater Tank (Tank 209)										
179	WD Building Alpha Wastewater Influent Tank (Tank 3)	F-6	In service	Influent alpha wastewater from H Bldg., SW/R Complex, SM Bldg. and Bldg. 38 . Possible contaminants include polonium-210, bismuth, plutonium-238, -239, radium-226, thorium-230,-232,-234, uranium-238, -234, -235, tritium, and actinium-227. Supernatant liquids from polonium processes in the HH Bldg. Possible contaminants include Protactinium-231, Cobalt-60, Radium-226 and aluminum chloride and bismuth chloride. Detergents, Organic solvents, waste chemicals, Lubricating oil	1, 3, 4, 5	Overflow of tanks recorded, see Area 4A			See Area 4A		

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substences	Ref	Releases	Media	Ref	Analytes[a]	Results	Ref
(Cont.)	(Cont.)	(Cont.)	(Cont.)	Citric acid, Chelating agents, Sodium nitrate, Sodium Nitrite, Sodium hydroxide, Formic acid, Sodium tartrate, Formaldehyde, Potassium carbonate, Potassium Sulfate, Copper Sulfate, Calcium carbonate, Oxalic acid, Lithium chloride, Zirconium oxide, Sodium carbonate, Potassium bromide, Nickel sulfate, Asbestos fiber, Methylene blue, Mercury, Lead, Beryllium, Cyanides,	(Cont.)	(Cont.)			(Cont.)		
180	WD Building Alpha Wastewater Influent Tank (Tank 4)	F-6	In service								
181	WD Building Alpha Wastewater Influent Tank (Tank 5)										
182	WD Building Alpha Wastewater Influent Tank (Tank 6)										
183	Room WD-1 Basement Sump (Tank 12)	F-6	In service	Alpha wastewater from floor and sink drains in the WD Bldg. Possible contaminants include Plutonium-238,-239, Thorium-230,-232,-234, Radium-226, tritium and Cobalt-60.	3	None Suspected			No Data		
184	Room WD-1 Alpha Wastewater Sump (Tank 17)	F-6	In service		3	None Suspected			No Data		
185	Room WD-1 Sanitary Waste Sump (Tank 134)	G-6	In service	Sanitary wastes	3						
186	Room WD-8 Alpha Wastewater Sump (Tank 18)	F-6	In service	Alpha wastewater from floor drains	3						
187	WD Building Alpha Wastewater Clariflocculators (2 units)	F-6 G-6	In service	Contaminants listed under WD Building Alpha Wastewater Influent Tank (Tank 3)	4, 5, 18						
188	WD Building Alpha Wastewater Mixing Box										

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes[a]	Results	Ref
189	WD Building Alpha Wastewater Sand Filters (2 units)	(Cont.)	(Cont.)	(Cont.)	(Cont.)	(Cont.)			(Cont.)		
190	WD Building Alpha Wastewater Bone Char Columns (2 units)										
191	WD Building Alpha Wastewater Effluent Tank (Tank 7)	G-6	In service	Treated alpha wastewater prior to discharge	3, 4, 5, 18	Released through closed pipeline to Great Miami river NPDES Outfall 001 effluent less than DOE Effluent release criteria	SW	4	No Data		
192	WD Building Alpha Wastewater Effluent Tank (Tank 8)										
193	WD Building Alpha Wastewater Effluent Tank (Tank 9)										
194	WD Building Alpha Wastewater Effluent Tank (Tank 10)	G-6	In service	Treated alpha wastewater prior to discharge	3, 4, 5, 18	Ibid	SW	4	No Data		
195	WD Building Alpha Wastewater Sludge Pits (2 units)	F-6 G-6	In service	Contaminants listed under WD Building Alpha Wastewater Influent Tank (Tank 3)	4, 5, 18	None Suspected			No Data		
196	WD Building Alpha Wastewater Sludge Solidification/Drumming Unit	F-6 G-6	In service	Contaminants listed under WD Building Alpha Wastewater Influent Tank (Tank 3)	4, 5, 18	None Suspected			No Data		
197	WD Building Solid Radioactive Waste Compactor	F-6 G-6	In service	Solid alpha wastes	4	None Suspected			No Data		
198	WDA Building Basement Sanitary Waste Tank (Tank 135)	F-6	In service	Sanitary wastewater from WD Bldg. Annex Penthouse	3	None Suspected			No Data		

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes[a]	Results	Re
199	WDA Building Beta Wastewater Influent Tank (Tank 13)	F-6	In service	Beta wastewater from T Bldg. equipment decontamination, floor mopping, and sprinkler system including tritium and solvents	3, 4, 5, 18	Historic effluent released to plant drainage ditch, effluent less than AEC release criteria	SW	4	No Data		
200	WDA Building Beta Wastewater Influent Tank (Tank 14)	F-6	In service	Contaminants listed under WD Bldg. Beta Wastewater Influent Tank (Tank 13)	3, 4, 5, 18	None Suspected			No Data		
201	WDA Building Beta Wastewater Metering Station	F-6	In service	Contaminants listed under WD Bldg. Beta Wastewater Influent Tank (Tank 13)	4, 5, 18						
202	WDA Building Beta Wastewater Mixing/Solidification Unit	F-6	In service	Contaminants listed under WD Bldg. Beta Wastewater Influent Tank (Tank 13)	4, 5, 18						
203	WDA Building Alpha Wastewater Influent Tank (Tank 15)	F-6	In service	Influent alpha wastewater. Possible contaminants include Polonium-210, Cobalt-60, Plutonium-238, Radium-226, Actinium-227, Cesium-137, thorium, Uranium-238.	3, 4						
204	WDA Building Alpha Wastewater Influent Tank (Tank 16)	F-6	In service	Ibid	3,4	None Suspected			No Data		
205	WDA Building Alpha Effluent Tank (Tank 214)	F-6	Inactive	Contaminants listed under WD Building Alpha Wastewater Influent Tank (Tank 3)	3, 4	Effluent released to plant drainage ditch, effluent less than AEA Release criteria	S, SW	4	No Data		
206	WDA Building Alpha Effluent Tank (Tank 215)										
207	WDA Building Alpha Effluent Tank (Tank 216)										
208	WDA Building Solidification Unit	F-6	Historical	Plutonium-238	4	None Suspected			No Data		

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes[a]	Results	Re
209	Building 62 Stack Deluge Tank (Tank 1)	E-6	In service	None suspected (never used)	3	None Suspected			No Data		
210	Room H-131 Laundry Water Tank (Tank 2)	E-6	In service	Alpha wastewater from laundry operations. Possible contaminants include Pu-238, Th-230,-232,-234, tritium, Ra-226,-228, and Ac-227. Ethylene glycol monbutyl ether, Sodium hydroxide, Ammonium bicarbonate, Sodium hexametaphosphate	3, 4	None Suspected			No Data		
211	A Building Decontamination Shower Water Tank (Tank 28)	E-6	In service	Wastewater from medical decontamination shower. Plutonium-238 and -239, Thorium-228, -230, and -232, Radium-226 and -228, and tritium	3	None Suspected			No Data		
212	A Building Decontamination Shower Water Tank (Tank 29)	E-6	In service	Wastewater from medical decontamination shower. Plutonium-238 and -239, Thorium-228, -230, and -232, Radium-226 and -228, and tritium	3	None Suspected			No Data		
213	T Building Solidification Unit	F-7	Historical	Cobalt-60, Polonium-210	4	None Suspected			No Data		
214	T Building Solid Radioactive Waste Compactor	F-7	In service	Low specific activity beta wastes - tritium	4						
215	Room T-1 Cooling Water Sump (Tank 124)	F-7	In service	Single pass non-contact cooling water	3, 4						
216	T Building, Corridor 2 Sanitary Wastewater Sump (Tank 125)	F-7	In service	Sanitary wastewaters from restrooms	3						
217	Room T-11F Sanitary Wastewater Sump (Tank 126)	F-7	In service	Sanitary wastewaters	3						
218	Room T-15 Sanitary Wastewater Sump (Tank 127)	F-7	In service	Sanitary wastewaters from restrooms and non-work area sinks	3						
219	T Building, Stair 3 Cooling Water Sump (Tank 128)	F-7	In service	Single pass cooling water from floor drains in air handling area	3, 4						
220	Room T-78 Steam Condensate Sump (Tank 129)	F-7	In service	Steam condensate from heating system in air handling area	3						

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes[a]	Results	Ref
221	T Building, Corridor 8 Sanitary Wastewater Sump (Tank 130)	F-7	In service	Sanitary wastewater from restrooms and non-work area sinks - tritium	3	(cont.)			(cont.)		
222	Room T-78A Sanitary Wastewater Sump (Tank 131)	F-7	In service	Sanitary wastewater from restrooms - tritium	3						
223	Room T-90 Cooling System Condensate Sump (Tank 132)	F-7	In service	Condensation from cooling units in air handling area - tritium	3, 4						
224	Room T-99 Sanitary Wastewater Sump (Tank 133)	F-7	In service	Sanitary wastewater from restrooms - tritium	3						
225	Room T-23 Beta Wastewater Sump (Tank 227)	F-7	Historical	Beta wastewaters	3, 4	None suspected, Sump underwent removed 1975			No Data		
226	Room T-3 Floor Drain Sump (Tank 228)	F-7	Historical Filled with concrete 1985	Wastewater from nonradiological work area floor drains	3, 4	None Suspected			No Data		
227	Room T-40 Alpha Wastewater Sump (Tank 229)	F-7	Historical Filled with concrete	Alpha wastewater from process area floor drains	3, 4	None Suspected			No Data		
228	Room T-41 Alpha Wastewater Sump (Tank 230)	F-7	Historical Filled with concrete	Alpha wastewater from process area floor drains	3, 4						
229	Room T-50 Alpha Wastewater Sump (Tank 231)	F-7	Historical Filled with concrete 1975	Process alpha wastewater	3, 4						
230	Room T-50 Alpha Wastewater Sump (Tank 232)	F-7	Historical Filled with concrete 1975	Process alpha wastewater	3, 4						

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes[a]	Results	Ref
231	T Building, Corridor 8 Alpha Wastewater Sump (Tank 233)	F-7	Historical Filled with concrete 1982	Alpha wastewater from process area floor drains	3, 4	Unknown - filled with concrete			No Data		
232	T Building, Corridor 7 Alpha Wastewater Sump (Tank 234)	F-7	Historical Filled with concrete 1982	Alpha wastewater from process area floor drains	3, 4	Unknown - filled with concrete			No Data		
233	Room T-63 Alpha Wastewater Sump (Tank 235)	F-7	Historical Filled with concrete 1982	Alpha wastewater from process area floor drains	3, 4	Unknown - filled with concrete			No Data		
234	Building 58 Diesel Fuel Storage Tank (Tank 222)	E-6	Historical	Diesel fuel	3	Tank Removed			No Data		
235	Area of Possible Elevated Thorium Activity	E-8	Grounds	Thorium	6	Possible fugitive dust	S	4, 6	1 14, 15	SGS[b] Table B.3 Locations 2021, 2148, and 2149 Table B.1	12 6
236	Site Survey Project Potential Hot Spot Location S0166	F-6	Grounds	Plutonium-238	6	Isolated activity from unknown sources			13	Table B.9 (Appendix E in Ref. 6)	6
237	Site Survey Project Potential Hot Spot Location S0175	E-5 E-6	Grounds	Cobalt-60, Cesium-137	6				14, 15	Table B.9 (Appendix E in Ref. 6)	6
238	Site Survey Project Potential Hot Spot Location S1092	G-7	Grounds	Thorium	6				14	Table B.9 (Appendix E in Ref. 6)	6
239	Site Survey Project Potential Hot Spot Location S0208	F-5	Grounds	Plutonium-238	6				13	Table B.9 (Appendix E in Ref. 6)	6
240	Site Survey Project Potential Hot Spot Location S0472	G-6	Grounds	Thorium	6				14	Table B.9 (Appendix E in Ref. 6)	6

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes[a]	Results	Ref
241	Northwest Parking Lots	D-7	Grounds	Toluene, Freon-113, Trichloroethene	12	Indicated by Soil Gas Survey	S	12	1	SGS[b] Table B.4 Locations 1002, 1007, 1008, 1009, 1010, 1014, 1101, 1102, 1106, 1109, 1110	12
242	VOC Potential Hot Spot Location 1016	D-7	Grounds	Toluene, Trichloroethene	12				1	SGS[b] Table B.4	12
243	VOC Potential Hot Spot Location 1064	E-7	Grounds	Toluene	12						
244	VOC Potential Hot Spot Locations 1076, 1077, 1079, and 1080	E-6	Grounds	Toluene, Freon-113, 1,1,1-Trichloroethane	12						
245	VOC Potential Hot Spot Location 1085	F-6	Grounds	Freon-113, Trichloroethene, 1,1,1-Trichloroethane	12						
246	VOC Potential Hot Spot Locations 1117 and 1118	G-7	Grounds	Tetrachloroethene	12						
247	VOC Potential Hot Spot Location 1129	F-8	Grounds	Freon-113, Trichloroethene, 1,1,1-Trichloroethane, Tetrachloroethene	12	Indicated by soil gas survey	S	12	1	SGS[b] Table B.4	12
248	HH Building Stack	F-7	In service	Polonium-210, Tritium	4, 18	None suspected beyond routine emissions	A	4, 18	Emissions reported in Annual Environmental Monitoring Reports		18
249	SW Building Stack (NCPDF)	E-6	In service	Tritium	4, 18						
250	SW Building Stack (SW1C)	E-6	In service	Uranium-238	4, 18						
251	SW Building Stack (HEFS)	E-6	In service	Tritium	4, 18						
252	B Building Stack	E-6	Inactive	Polonium-210, Tritium	4, 18						
253	T Building WEST Stack	F-6	In service	Tritium, Plutonium-238 -239, Uranium-238	4, 18						
254	T Building EAST Stack	E-7	In service	Tritium, Plutonium-238, Uranium-238	4, 18						
255	WD Building Stack (ALR)	F-6	In service	Plutonium-238	4, 18						

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes[a]	Results	Ref
256	WD Building Stack (AHR)	F-6	In service	Plutonium-238	4, 18	(Cont.)	(Cont.)	(Cont.)	(Cont.)	(Cont.)	(Cont
257	WD Building Stack (SS)	F-6	In service	Plutonium-238	4, 18						
258	Area H Open Burn Unit (AKA Pyrotechnic Waste Disposal Area)	I-7	In service	Wastewater from explosives processes Organic solvents (primarily acetone)	1, 4, 5, 18	Suspected, not confirmed	S	7, 18	3, 4, 5, 6, 10, 11, 12 14	Tables B.6, B.7, and B.8 Table B.9 RSS[c] Location S0783 (Appendix E in Ref. 6)	7 6
259	Pyrotechnic Waste Shed	I-7	In service	Pyrotechnic powders Pyrotechnic-contaminated wastes Mineral oil	4, 5, 18	Suspected, not confirmed	S	7, 18	3, 4, 5, 6, 12 14	Tables B.6, B.7, and B.8 Table B.9 RSS[c] Location S0780 (Appendix E in Ref. 6)	7 6
260	Thermal Treatment Unit	I-7	Inactive	Antifreeze Explosives Program waste Mild detonating cords and fuses Pyrotechnic powders Solid primary explosives	4, 5, 18	Suspected, not confirmed	S	7, 18	3, 4, 5, 6, 12 14	Tables B.6, B.7, and B.8 Table B.9 RSS[c] Location S0783 (Appendix E in Ref. 6)	7 6
261	Trash Burner Area	I-7	Historical	Mild detonating fuses Pyrotechnic material Thermite Freon Acetone	4, 5, 18	Suspected, not confirmed	S	7, 18	3, 4, 5, 6, 12, 13	Tables B.6, B.7, and B.8	7
262	Retort	I-7	In service	Explosives Programs constituents Metals, Asbestos Diallyl-phthalates-based plastic components	4, 5, 18	Gaseous and particulate emissions released to atmosphere	A	4	No Data		
263	Building 90 Blockhouse										

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes[a]	Results	Re
264	Explosive Waste Storage Bunker (Magazine 53)	I-7	In service	Classified, non-explosive wastes Explosion residuals (primarily aluminum residuals) Contaminants listed under Explosive Waste Storage Bunker (Magazine 53) Detonators, Detonating cord, Thermite, Pyrotechnic powders, Primary explosives High explosive powder, PETN, PBX, RDX, HMX, HNS, CP HNS (hexanitrostilbene)	4, 5, 18	None Suspected			No Data		
265	Biodegradation Unit	I-7	Inactive	Soapy wastewater containing explosives constituents	4, 5, 18	Suspected	S	7, 18	See Pyrotechnic Waste Shed		4
266	Area 8, Thorium-Contaminated Soils from Areas 1 and 9	F-9	Grounds	Thorium-232, Plutonium-238	1, 4, 5, 18	Thorium	S	4, 6	14, 15, 16	Table B.1 (Table V.3 in Ref. 6)	6
267	Area 9, Thorium Storage and Redrumming Area	F-9 G-9	Grounds	Plutonium-238, Thorium Thorium sludge constituents (c)	1, 4, 5, 18	Thorium	S	4, 6	14	Table B.1 (Table V.4 in Ref. 6)	6
268	Building 31, Contaminated Material Storage Building	F-9	In service	Plutonium-238 Thorium Tritium	4 3	None Suspected			See Area 9	Table B.9	6
269	Building 36 Historic Gasoline Tanks (Tanks 239 and 240)	G-10	Historical	Gasoline	3	No information on when tanks were removed			No Data		
270	Underground Sanitary Sewer Lines G6 & G7	G-10	In Service	Organic solvents, plating solutions, laboratory chemicals, nitric acid, hydrochloric acid, methylene chloride, strong acids and bases	4	Suspected VOCs	S	4	3, 4, 5, 6, 9, 10, 11, 12, 13, 16	Tables B.6, B.7, B.8, and B.9	7
271	Building 37 Sanitary Waste Tank (Tank 100)	F-10	In service	Sanitary wastes	3, 4	None Suspected			No Data		

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes[a]	Results	Re
272	Area 10, Concrete Debris	G-8 G-9	Grounds	Polonium-210, Cobalt-60, Plutonium-238 (from runoff)	1, 4, 5, 18	Suspected	S	4, 6	14	Table B.1 (Table III.6 in Ref. 6)	6
273	Area 12, Thorium-Contaminated Soil from Area 1	G-9	Grounds	Thorium, Plutonium-238 (from runoff)	1, 4, 5, 18	Suspected thorium	S	4, 6	14, 15	Table B.1 (Table V.5 in Ref. 6)	6
274	Area 21, Old Bunker	H-9	Grounds	Cesium-137, Strontium-90, Actinium-227, Radium-226	4, 5, 18	Suspected thorium	S	4, 6	14, 15, 16	Table B.1 (Table VII.2 in Ref. 6)	6
275	Area 21, Detonator Shack	H-8	Grounds	Cesium-137, Strontium-90, Actinium-227, Radium-226	4, 5, 18	Suspected thorium	S	4, 6	14, 15, 16	Table B.1 (Table VII.2 in Ref. 6)	6
276	Area 22, Orphan Soil from other Areas	I-8	Inactive	Polonium-210, Radium-226, Cobalt-60, Plutonium-238, Cesium-237	4, 5, 18	Suspected	S	6	14, 15, 16	Table B.1 (Table X.1 in Ref. 6)	6
277	Area J, Hillside Disposal Area (AKA Dredged Material Disposal Area 11a)	H-8 H-9	Historical	Construction/building debris, Paints, Thinners, Chemical contaminants, Asbestos, Thorium, Plutonium-238	1, 4, 18	Suspected VOCs	S	4	1 14, 15, 16	SGS[b] Table B.2 Table B.1 (Table X.2 in Ref. 6)	12 6
278	Area J, Hillside catch basin	H-8	In service	Plutonium-238 (from runoff)	1, 4, 18	Suspected	SW	18	No Data		
279	Old Firing Range Drum Storage Area	H-9	Historical	Liquid chemical wastes	5, 18	Confirmed VOCs	S	4	1 2, 3, 4, 5, 6 14, 15	SGS[b] Table B.2 Locations 3152, 3153, and 3187 Tables B.6, B.7, B.8, and B.9 RSS[c] Locations S0162, S0163, and S0647 (Appendix E in Ref. 6)	12 7 6

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes[a]	Results	R
280	Waste Oil Drum Field Area	I-8	Historical	Waste oil Plating Operations waste Explosive/solvent waste Herbicides Waste chemicals Photo-processing waste Batteries Kitchen grease Epoxy resins Ethylene glycol Scintillation vials	4, 5, 18	Confirmed VOCs	S	4	3, 4, 5, 6, 8, 12	Tables B.6, B.7, and B.8 RSS[c] Locations S0263, S0164, S0265, and S0266 (Appendix E in Ref.6) Table B.9	7 6
281	Area E, Waste Oil Spill	J-8	Historical	Waste oil	1	Minor oil	S	1	No Data		
282	Spoils Disposal Area/Construction Spoils Area	J-5 K-5	In service	Plutonium-238, Thorium Gasoline contaminated soils from G Building	4, 5, 18	Plutonium-238 < 25 pci/gm Thorium < 5 pci/gm	S	6	14, 15, 16	Table B.1 (Table X.3 in Ref. 6)	6
283	Area 1, Bulk Transfer of Thorium Drums (AKA, Plutonium Recoverable Waste Storage)	I to L 6 to 8	Grounds	Thorium sludge constituents, Plutonium-238	1, 4, 5, 18	Thorium dust, Plutonium-238	S	6	3, 4 14, 15, 16	Tables B.6, B.7, and B.8 Table B.1 (Table IV.2 in Ref. 6)	8 6
284	Building 21, Thorium Sludge Storage Facility	J-7 J-8	Surplus	Thorium sludge constituents	4	Thorium dust	S	4, 6	See Area 1		
285	Area 11, Contamination from SM Building Operations	G-9	Surplus	Plutonium-238	1, 4, 5, 18	Plutonium-238	S	6	3, 4, 5, 6 14, 16	Tables B.6, B.7, and B.8 Table B.1 (Table IV.3 in Ref. 6)	8 6
286	Area 16, SM Building Sanitary Sewage Septic Tank Leach Field	F-9 G-9	Surplus	Plutonium-238, Thorium Sanitary wastes from SM Building	1, 4, 5, 18	Plutonium-238	S	6	3, 4, 6 14, 15, 16	Tables B.6, B.7, and B.8 Table B.1 (Table IV.5 in Ref. 6)	8 6

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes[a]	Results	Re
287	SM Building Historic Septic Tank (Tank 241)	G-9	Historical	Plutonium-238	3, 4	Plutonium-238			No Data		
288	Area 17, SM Building Soils	G-9 G-10	Surplus	Plutonium-238, Thorium	1, 5, 18	Plutonium-238	S	6	4, 6 14, 15	Table B.6, B.7, and B.8 Table B.1 (Table IV.6 in Ref. 6)	8 6
289	SM Building Alpha Wastewater Tank (Tank 210)	G-9	Historical	Alpha wastewater from plutonium processing	3, 4	Tanks removed 1986-1988			See Area 17		
290	SM Building Alpha Wastewater Tank (Tank 211)										
291	SM Building Alpha Wastewater Tank (Tank 212)										
292	SM Building Alpha Wastewater Tank (Tank 213)										
293	SM Building Solidification Unit (Room SM-1)	G-9	Historical	Plutonium-238	4	None Suspected, equipment removed 1970		4	No Data		
294	WS Building Solidification Unit	G-9	Historical	Plutonium-238	4	None Suspected D&D 1983			No Data		
295	Building 38 Solid Radioactive Waste Compactors (2 units)	G-9 H-9	Inactive	Plutonium-238	4	None Suspected D&D 1986			No Data		
296	Building 38 West Dock Sump (Tank 25)	H-9	In service	Precipitation and potentially spilled waste material from a radiological waste drum storage pad - Pu-238	3	None Suspected			No Data		
297	Building 38 Alpha Wastewater Sump (Tank 26)	G-9	In service	Wastewater from floor drains and decontamination showers	3, 4	None Suspected			No Data		
298	Building 38 Alpha Wastewater Sump (Tank 27)	G-9	In service	Wastewater from floor drains and decontamination showers	3, 4	None Suspected			No Data		
299	Building 38 Diesel Fuel Storage Tank (Tank 121)	G-9	In service	Diesel fuel	3	None Suspected			No Data		

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes[a]	Results	Ref
300	Area 19, Underground Waste Transfer Line	G-6 G-7 G-8 G-9	Historical	Plutonium-238, Nitric acid	1, 4, 5, 18	Plutonium-238	S	1, 6, 18	14	Tables B.1, B.6, B.7, and B.8	6, 8
301	Building 38 In-Line Incinerator	G-9	Historical	Plutonium-238	2, 4	None Suspected D&D 1986			No Data - pending verification		
302	Area D, Acid Leach Field	H-8 H-9 G-8 G-9	Historical	Plutonium-238, Thorium	1, 4, 5, 18	Plutonium-238	S	6	4, 6 14	Tables B.6, B.7, and B.8 Table B.1 (Table IV.10 in Ref. 6)	8 6
303	Warehouse 14 (AKA Pad 14)	G- 9	Grounds	Thorium sludge constituents Plutonium-238	4	None Suspected			14	Table B.9 RSS[c] Locations C0127 and C0128 (Appendix E in Ref. 6)	6
304	Excavated Materials Disposal Area (AKA Rader's Hill)	I-8	Grounds	Thorium	4	Thorium < 2 pci/gm	S	6	14	Table B.1	6
305	SM Stack	G-9	In service	Plutonium-238	4	None suspected beyond routine emissions	A	4, 18	No Data		
306	SM/PP Hill Seep 0609	L-9	NA	None suspected	5, 18	None suspected			No Data		
307	Site Survey Project Potential Hot Spot Location C0007	E-9	Grounds	Thorium	6	Isolated activity from unknown source			14	Table B.9 (Appendix E in Ref. 6)	6
308	Site Survey Project Potential Hot Spot Location C0028	F-10	Grounds	Thorium	6						
309	Site Survey Project Potential Hot Spot Location S0307	F-9	Grounds	Thorium	6						
310	Site Survey Project Potential Hot Spot Location S0647	H-9	Grounds	Cesium-137	6				15	Table B.9 (Appendix E in Ref. 6)	6

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes[a]	Results	Ref
311	Site Survey Project Potential Hot Spot Location S0706	I-6	Grounds	Plutonium-238	6	(Cont.)			13	Table B.9 (Appendix E in Ref. 6)	6
312	Site Survey Project Potential Hot Spot Location S0971	J-9	Grounds	Thorium	6				14	Table B.9 (Appendix E in Ref. 6)	6
313	Site Survey Project Potential Hot Spot Location S0982	I-8	Grounds	Thorium	6						
314	Farm Trash Area	M-5	Historical	Waste oil	5, 18	Suspected, not confirmed			3, 4, 5, 6 14	Tables B.6, B.7, and B.8 Table B.9 RSS[c] Location S0237 (Appendix E in Ref. 6)	7 6
315	Waste Transport Vehicles	SITE-WIDE	In service	Explosives Programs wastes Mixed wastes Laboratory chemicals Low activity wastewater from SM/PP Complex to WD Building	4, 5, 18	None Suspected			No Data		
316	Trash Dumpsters	SITE-WIDE	In service	Solid wastes	4, 5, 18	None Suspected			No Data		
317	Ventilation Hoods	SITE-WIDE	In service	Paint fumes, Acidic and caustic gases Asbestos, Acetone, Trichloroethylene, Benzene, Chloroform, Toluene	4, 5, 18	None Suspected			No Data		
318	Transformers	SITE-WIDE	In service	Polychlorinated biphenyls	4	All PCB oils replaced			No Data		
319	Epoxy Resin Disposal	G-7 H-7	In service	Epoxy resins	5, 18	None Suspected			No Data	Table B.9	6
320	Dayton Unit I	Dayton	Historical	Radioisotopes (including plutonium-239) Spent acids (including hydrochloric acid)	1, 4	None Suspected			No Data		

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes[a]	Results	Ref
321	Dayton Unit II	Dayton	Historical	Explosives (including ammonium picrate and ammonium nitrate) Rocket propellant	1, 4	None Suspected			No Data		
322	Dayton Unit III	Dayton	Historical	Polonium-210, Tellurium, Bismuth, Cobalt, Nickel, Beryllium, Thorium	1, 4	Suspected Cobalt-60	S	4	No Data		
323	Dayton Unit IV	Dayton	Historical	Contaminants listed under Dayton Unit III	1, 4	Suspected Cobalt-60	S	4	No Data		
324	Dayton Warehouse	Dayton	Historical	Polonium-210	4	None Suspected			No Data		
325	Scioto Facility (Marion)	Scioto	Historical	Facility never used	4	None Suspected			No Data		
326	Building 38 Sanitary Sump (Tank 254)	G-9	In Service	Sanitary wastewater	25	None Suspected			No Data		
327	R-111 Calorimetry Bath (Tank 255)	E-6	Inactive	Deionized water with potential alpha contamination	25	None Suspected			No Data		
328	R-111 Calorimetry Bath (Tank 266)										
329	Building 62 Hot Waste Sump (Tank 258)	E-6	In Service	Sanitary wastewater with potential alpha contamination	25	None Suspected Tank removed			No Data		
330	Building 2 Fuel Oil Tank (Tank 260)	H-7	Historical	Fuel oil	25	Unknown			No Data		
331	Building 2 Tank (Tank 261)	H-7	Historical	Sanitary Wastes	25	Unknown Closed in place			No Data		
332	Building G Waste Oil Tank (Tank 262)	E-7	Inactive	Waste oils	25	Unknown			No Data		
333	Building 87 Explosive Surge Tank (Tank 263)	H-7	In Service	Exhaust air from explosives testing	25	None Suspected			No Data		
334	Building 87 Explosive Surge Tank (Tank 264)										
335	Building 87 Explosive Surge Tank (Tank 265)										

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes[a]	Results	Ref
336	Building 37 Waste Tank (AKA Low Risk Waste Tank) (Tank 267)	F-10	Inactive	Wastewater	25	None Suspected Never used for low-risk wastewaters			No Data		
337	Building H Condensate Sump (Tank 268)	E-6	In Service	Condensate wastewater	25	None Suspected			No Data		
338	Building 29 Septic Tank (Tank 270)	E-9	Inactive	Sanitary wastewater	25	None Suspected (Abandoned in place?)			No Data		
339	T-44 Wastewater Sump (Tank 250)	F-7	Historical	Wastewater	25	Unknown - filled with concrete			No Data		
340	T-16b Wastewater Sump (Tank 251)	F-7	Historical	Wastewater	25	Unknown - filled with concrete			No Data		
341	T-90 Condensate Sump (Tank 269)	F-7	In Service	Condensate wastewater	25	None Suspected			No Data		
342	T-1 Hot Side Fire Water Tank (Tank 271)	F-7	In Service	Wastewater/Radioactive wastewater	25	None Suspected			No Data		
343	T-20 Fire Water Sump (Tank 272)	F-7	In Service	Wastewater/Radioactive wastewater	25	None Suspected			No Data		
344	T-37 Fire Water Sump (Tank 273)	F-7	In Service	Wastewater/Radioactive wastewater	25	None Suspected			No Data		
345	Former Equipment Storage Area see related site 16	H-6	Historical	Potential contaminants listed under Hazardous Waste Storage Area	4, 5, 18	Historically related to site 16	S	7, 18	No Analytical Data		7

[a]Analyte List Codes
[b]SGS, Soil Gas Survey
[c]RSS, Radiological Site Survey

1 - Soil Gas Survey - Freon 11, Freon 113, Trans-1,2-Dichloroethylene, Cis-1,2-Dichloroethylene, 1,1,1-Trichloroethane, Perchloroethylene, Trichloroethylene, Toluene
2 - Gamma Spectroscopy - Thorium-228, -230, Cobalt-60, Cesium-137, Radium-224, -226, -228, Americium-241, Actinium-227, Bismuth-207, Bismuth-210m, Potassium-40
3 - Target Analyte List
4 - Target Compound List (VOC)
5 - Target Compound List (SVOC)
6 - Target Compound List (Pesticides/Polychlorinated Biphenyl)
7 - Dioxins/Furans
8 - Extractable Petroleum Hydrocarbons (EPH)/Total Petroleum Hydrocarbons (TPH)
9 - Lithium
10 - Nitrate/Nitrite
11 - Chloride
12 - Explosives
13 - Plutonium-238
14 - Plutonium-238, Thorium-232
15 - Cobalt-60, Cesium-137, Radium-226, Americium-241
16 - Tritium

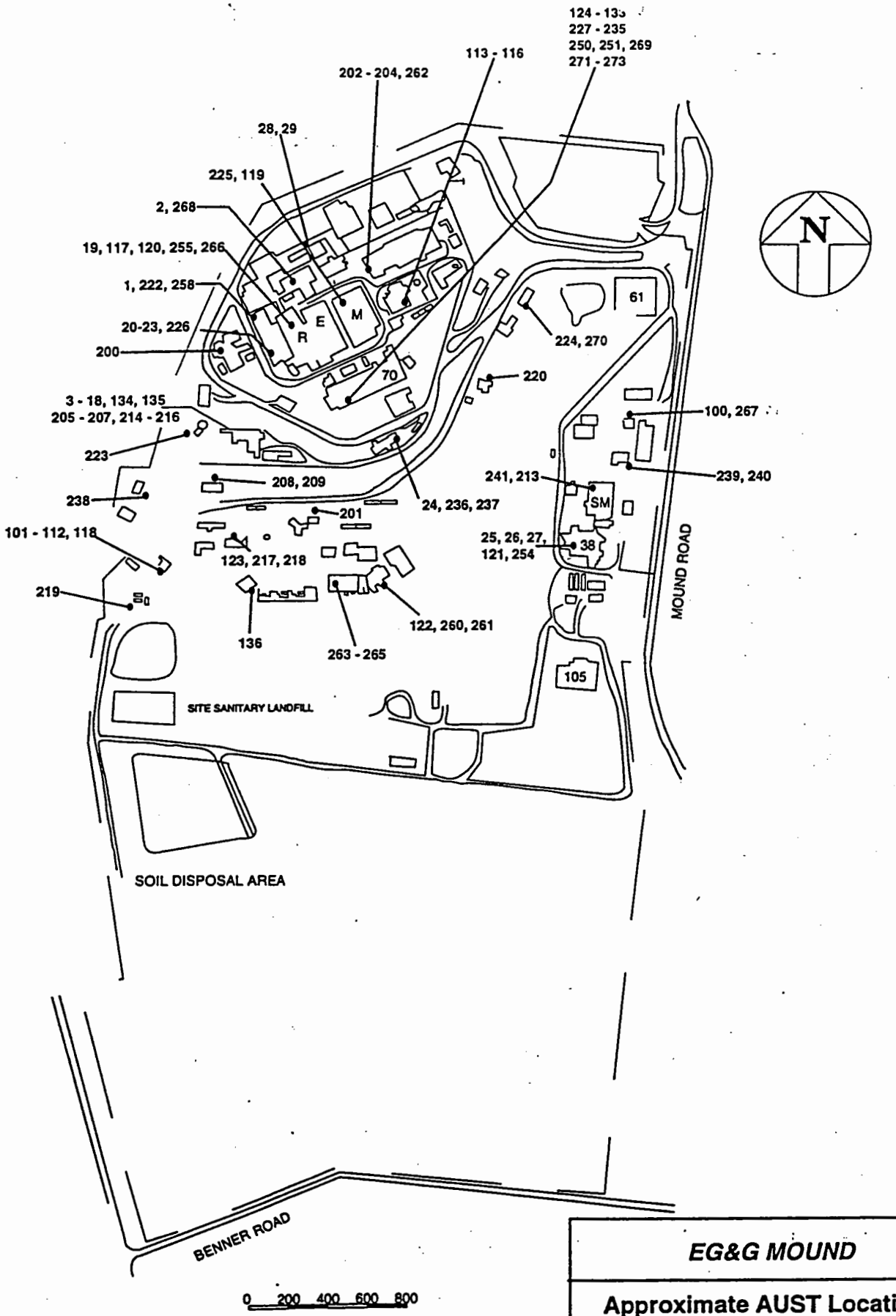
Reference List

1. DOE 1986
2. DOE 1992a
3. DOE 1992c
4. DOE 1993a
5. EPA 1988a
6. DOE 1993d
7. DOE 1993c
8. DOE 1992d
9. Fentiman 1990
10. DOE 1992f
11. Styron and Meyer 1981
12. DOE 1993b
13. DOE 1993d
14. DOE 1991b
15. Halford 1990
16. DOE 1993e
17. DOE 1990
18. DOE 1992a
19. Rogers 1975
20. DOE 1992h
21. Dames and Moore 1976a, b
22. DOE 1992i
23. DOE 1992j
24. DOE 1994
25. EG&G 1994

EXHIBIT E

BUILDING DS TANK DATA

Tank No	Proposed Program	Bldg	Location	Status	Date Installed	Estimated Total Capacity (gallons)	Purpose	FFA OU	Primary Regulatory Jurisdict	Spill Jurisdict
1	AUSTP	62		in service	1979	900	stack deluge	N/A	AEA	AEA
2	D&D–Proposed	H	Rm 131	inactive	1947	500	laundry (radioactive) water sump	Not assigned	AEA	AEA
3	AUSTP	WD	Deck	in service	1947	30,000	alpha influent (D) storage	N/A	AEA	AEA
4	AUSTP	WD	Deck	in service	1947	30,000	alpha influent (C) storage	N/A	AEA	AEA
5	AUSTP	WD	Deck	in service	1947	30,000	alpha influent (B) storage	N/A	AEA	AEA
6	AUSTP	WD	Deck	in service	1947	30,000	alpha influent (A) storage	N/A	AEA	AEA
7	AUSTP	WD	Dock 2	in service	1947	30,000	alpha effluent (D) storage	N/A	CWA	AEA
8	AUSTP	WD	Dock 2	in service	1947	30,000	alpha effluent (C) storage	N/A	CWA	AEA
9	AUSTP	WD	Dock 2	in service	1947	30,000	alpha effluent (B) storage	N/A	CWA	AEA
10	AUSTP	WD	Dock 2	in service	1947	30,000	alpha effluent (A) storage	N/A	CWA	AEA
11	AUSTP	WD	Annex	in service	1966	600	"bot sump"	N/A	AEA	AEA
12	AUSTP	WD	Rm 1, Basement	in service	1947	600	alpha wastewater sump	N/A	AEA	AEA
13	AUSTP	WD	Annex	in service	1966	3,750	beta influent storage	N/A	AEA	AEA
14	AUSTP	WD	Annex	in service	1966	3,750	beta influent storage	N/A	AEA	AEA
15	AUSTP	WD	Annex	in service	1966	3,750	alpha influent storage	N/A	AEA	AEA
16	AUSTP	WD	Annex	in service	1966	3,750	alpha influent storage	N/A	AEA	AEA
17	AUSTP	WD	Rm 1,Sub-bsmnt	in service	1947	500	alpha wastewater sump	N/A	CWA	AEA
18	AUSTP	WD	Rm 8	in service	1947	450	alpha wastewater sump	N/A	CWA	AEA
19	AUSTP	R	R-128	in service	1981	500	alpha wastewater tank	N/A	AEA	AEA
20	AUSTP	SW	SW-8	in service	1950	200	beta wastewater collection	N/A	AEA	AEA
21	AUSTP	SW	SW-125	in service	1965	100	beta wastewater collect	N/A	AEA	AEA
22	AUSTP	SW	SW-143	in service	1965	100	beta wastewater collect	N/A	AEA	AEA
23	D&D	SW	SW-137	inactive	1950	200	alpha wastewater tank	OU6	AEA	AEA
24	AUSTP	HH	HH-21	in service	1974	200	beta wastewater sump	N/A	AEA	AEA
25	AUSTP	38	West Dock	in service	1986	2,000	West dock sump	N/A	AEA	AEA
26	AUSTP	38	6 East, 10K	in service	1965	300	alpha wastewater sump	N/A	CWA	AEA
27	AUSTP	38	6 East, 10K	in service	1965	300	alpha wastewater sump	N/A	CWA	AEA
28	AUSTP	A		in service	1968	400	Medical decon shower collection tank	N/A	AEA	AEA
29	AUSTP	A		in service	1968	400	Medical decon shower collection tank	N/A	AEA	AEA
100	AUSTP	37		in service	1968	500	sanitary waste tank	N/A	CWA	AEA
101	AUSTP	57		in service	1974	7,500	grit chamber	N/A	CWA	AEA
102	AUSTP	57		in service	1974	1,870	comminutor	N/A	CWA	AEA
103	AUSTP	57		in service	1974	10,770	equalization basin	N/A	CWA	AEA
104	AUSTP	57		in service	1974	10,770	equalization basin	N/A	CWA	AEA
105	AUSTP	57		in service	1985	10,770	equalization basin	N/A	CWA	AEA
106	AUSTP	57		in service	1985	10,770	equalization basin	N/A	CWA	AEA
7	AUSTP	57		in service	1975	65,000	aeration basin	N/A	CWA	AEA
8	AUSTP	57		in service	1975	65,000	aeration basin	N/A	CWA	AEA
109	AUSTP	57		in service	1975	14,960	clarifier	N/A	CWA	AEA
110	AUSTP	57		in service	1975	14,960	clarifier	N/A	CWA	AEA
111	AUSTP	57		in service	1975	673	chlorine contact chamber	N/A	CWA	AEA
112	AUSTP	57		in service	1975	673	chlorine contact chamber	N/A	CWA	AEA
113	AUSTP	P		in service	1947	25,000	fuel oil storage (tank 1)	OU2	AEA	CWA
114	AUSTP	P		in service	1947	25,000	fuel oil storage (tank 2)	OU2	AEA	CWA
115	AUSTP	P		in service	1965	25,000	fuel oil storage (tank 3)	OU2	AEA	CWA
116	AUSTP	P		in service	1965	25,000	fuel oil storage (tank 4)	OU2	AEA	CWA
117	AUSTP	R/SW/T	Stack	in service	1971	5,000	diesel fuel storage	N/A	BUSTR	BUSTR
118	AUSTP	57		in service	1974	850	diesel fuel storage	N/A	BUSTR	BUSTR
119	AUSTP	M	M-108	in service	1980	250	metal plating rinse tank	N/A	CWA	AEA
120	AUSTP	R	Corridor 2	in service	Unknown	500	sanitary waste tank	N/A	CWA	AEA
121	AUSTP	38		in service	1971	4,000	diesel fuel storage tank	N/A	BUSTR	BUSTR
124	AUSTP	T	T-1	in service	1947	350	cooling water sump	N/A	CWA	AEA
125	AUSTP	T	Corridor 2	in service	1947	350	sanitary waste sump	N/A	CWA	AEA
126	AUSTP	T	T-11F	in service	1947	350	sanitary waste sump	N/A	CWA	AEA
127	AUSTP	T	T-15A	in service	1947	350	sanitary waste sump	N/A	CWA	AEA
128	AUSTP	T	Stair 3	in service	1947	350	cooling water sump	N/A	CWA	AEA
129	AUSTP	T	T-78	in service	1947	350	condensate sump	N/A	CWA	AEA
130	AUSTP	T	Corridor 8	in service	1947	350	sanitary waste sump	N/A	CWA	AEA
131	AUSTP	T	T-78B	in service	1947	350	sanitary waste sump	N/A	CWA	AEA
132	AUSTP	T	T-90	in service	1947	350	cooling sys condensate sump	N/A	CWA	AEA
133	AUSTP	T	T-99	in service	1947	350	sanitary waste sump	N/A	CWA	AEA
134	AUSTP	WD	Rm 01	in service	1947	400	sanitary waste sump	N/A	CWA	AEA
135	AUSTP	WD	Annex, Rm 9	in service	1967	400	sanitary waste sump	N/A	CWA	AEA
136	ER	85		inactive	Unknown	450	waste solvent tank	OU5	FFA	FFA
200	ER	1		inactive	1956	500	explosives wastwewater settling basin	OU5	FFA	FFA
201	ER	43		inactive	1969	500	explosives wastwewater settling basin	OU5	FFA	FFA
202	ER	G		removed	1947	4,000	leaded gasoline storage	OU2	FFA	FFA
203	ER	G		removed	1964	4,000	leaded gasoline storage	OU2	FFA	FFA
204	ER	G		removed	1975	5,000	unleaded gasoline storage	OU2	FFA	FFA
205	D&D	WD	Old SD Plant	inactive	1947	7,500	sanitary waste treatment	OU6	AEA	AEA
206	D&D	WD	Old SD Plant	inactive	1947	30,000	sanitary waste treatment	OU6	AEA	AEA
207	D&D	WD	Old SD Plant	inactive	1947	7,500	sanitary waste treatment	OU6	AEA	AEA
208	D&D	41		removed	1968	3,466	alpha wastewater pump station	OU6	AEA	AEA
209	D&D	41		removed	1968	3,466	alpha wastewater pump station	OU6	AEA	AEA



EG&G MOUND

Approximate AUST Locations

DATE:10/28/94	JOB NO: 10804-794	FIGURE
DAMES & MOORE ONE BLUE HILL PLAZA, SUITE 530 PEARL RIVER, NEW YORK 10965		1

Tank No	Proposed Program	Bldg	Location	Status	Date Installed	Estimated Total Capacity (gallons)	Purpose	FFA OU	Primary Regulatory Jurisdict	Spill Jurisdict
213	D&D	SM		removed	1959	1,000	alpha wastewater collect tank	OU6	AEA	AEA
14	D&D	WD	Annex	inactive	1968	3,750	alpha effluent storage	OU6	AEA	AEA
15	D&D	WD	Annex	inactive	1968	3,750	alpha effluent storage	OU6	AEA	AEA
16	D&D	WD	Annex	inactive	1968	3,750	alpha effluent storage	OU5	AEA	AEA
1	ER	27		inactive	1966	100	waste flume sump	OU5	FFA	FFA
218	ER	27		inactive	1966	500	explosives settling sump	OU5	FFA	FFA
219	ER	34		removed	1965	5,000	aviation fuel storage	OU5	FFA	FFA
220	ER	51		removed	1972	1,000	waste storage tank	OU5	FFA	FFA
222	ER	58		removed	1973	3,000	diesel fuel storage	OU2	FFA	FFA
223	ER	56		removed	1972	825	diesel fuel storage	OU2	FFA	FFA
224	ER	29	East side	closed in place	1947	1,500	historic septic tank	OU5	FFA	FFA
225	ER	M	M-38	inactive	1969	350	metal plating rinse sump	OU2	FFA	FFA
226	D&D	SW	SW-10	inactive	1967	100	beta wastewater sump	Not assigned	AEA	AEA
227	D&D	T	T-23	closed in place	1947	350	beta wastewater sump	Not assigned	AEA	AEA
228	D&D	T	T-3	closed in place	1947	350	floor drain sump	Not assigned	AEA	AEA
229	D&D	T	T-40	closed in place	1947	350	alpha wastewater sump	Not assigned	AEA	AEA
230	D&D	T	T-41	closed in place	1947	350	alpha wastewater sump	Not assigned	AEA	AEA
231	D&D	T	T-50	closed in place	1947	60	alpha wastewater sump	Not assigned	AEA	AEA
232	D&D	T	T-50	closed in place	1947	350	alpha wastewater sump	Not assigned	AEA	AEA
233	D&D	T	Corridor 8	closed in place	1947	350	alpha wastewater sump	Not assigned	AEA	AEA
234	D&D	T	Corridor 7	closed in place	1947	350	alpha wastewater sump	Not assigned	AEA	AEA
235	D&D	T	T-63	closed in place	1947	350	alpha wastewater sump	Not assigned	AEA	AEA
236	D&D	HH	HH-15	inactive	1967	100	beta wastewater sump	Not assigned	AEA	AEA
237	D&D	HH	HH-6	closed in place	1947	100	alpha wastewater sump	Not assigned	AEA	AEA
238	ER	19		removed	1947	Unknown	historic gasoline storage tank	OU5	FFA	FFA
239	ER	36		removed	1948	Unknown	historic gasoline storage tanks	OU5	FFA	FFA
240	ER	36		removed	1948	Unknown	historic gasoline storage tanks	OU5	FFA	FFA
241	D&D–Proposed	SM		removed	1959	3,000	historic septic tank	OU6	AEA	AEA
250	D&D–Proposed	T	T-44	closed in place	1947	350	wastewater sump	Not assigned	AEA	AEA
251	D&D–Proposed	T	T-16B	closed in place	1947	350	wastewater sump	Not assigned	AEA	AEA
254	AUSTP	38	Room 4	in service	1965	350	sanitary sump	N/A	CWA	AEA
255	D&D–Proposed	R	R-111	inactive	1967	55	calorimeter bath	Not assigned	AEA	AEA
258	AUSTP	62		in service	1973	350	hot waste sump	N/A	AEA	AEA
260	ER–Proposed	2		removed	1956	1,000	fuel oil storage	OU5	FFA	FFA
61	ER–Proposed	2		closed in place	1956	450	septic tank	Not assigned	AEA	AEA
62	ER–Proposed	G		inactive	1947	550	waste oil storage	Not assigned	AEA	AEA
63	AUSTP	87		in service	1984	51,700	explosive surge tank	N/A	CAA	RCRA/AEA
1	AUSTP	87		in service	1984	51,700	explosive surge tank	N/A	CAA	RCRA/AEA
265	AUSTP	87		in service	1984	51,700	explosive surge tank	N/A	CAA	RCRA/AEA
266	D&D–Proposed	R	R-111	inactive	1967	55	calorimeter bath	Not assigned	AEA	AEA
267	D&D–Proposed	37		inactive	1966	500	low risk waste tank	Not assigned	AEA	AEA
268	AUSTP	H		in service	1947	350	condensate sump	N/A	CWA	AEA
269	AUSTP	T	T-90	in service	1947	350	condensate sump	N/A	CWA	AEA
270	ER–Proposed	29	East Side	inactive	1965	1,000	historic septic tank	Not assigned	AEA	AEA
271	AUSTP	T	T-1	in service	1947	10,000	hot side fire water tanks	N/A	AEA	AEA
272	AUSTP	T	T-20	in service	1947	200	fire water sump	N/A	AEA	AEA
273	AUSTP	T	T-37	in service	1947	200	fire water sump	N/A	AEA	AEA

Within each category (in service, inactive, closed in place and removed), there are USTs which are subject to CWA and AEA jurisdiction. Since UST operating, monitoring, and closure requirements are not specifically defined in either the CWA or AEA, RMPs have been developed to reduce the potential for an uncontrolled release from tanks under these jurisdictions.

Based on the information reviewed, AUSTs are being operated, maintained or closed consistent with current regulatory requirements. Section 6.0 of the AUSTP describes several RMPs which need to be carried out to ensure future compliance.

4.1 In Service AUSTs

The In Service USTs have been assigned to the AUST program. In Service AUSTs are those currently in use or available for use in routine Mound facility operations. A field survey of each operating AUST system was conducted in February, 1994.

Physical features such as tank and piping construction, installation date, contents, operational use, and release prevention and detection systems were identified and evaluated. Copies of field survey sheets are provided in Appendix C.

Based on the field surveys, and a review of available engineering drawings and maintenance records, a regulatory compliance assessment was performed for each In Service tank system. The CWA and AEA do not specifically define operating, upgrading, or closure requirements for USTs. Therefore, the general operating and release detection requirements for USTs under RCRA (40 CFR Part 280 Subparts C and D) and BUSTR (OAC 1301:7-9-07 and 1301:7-9-08) were used as a guide in evaluating systems performance under these jurisdictions. However, compliance with these regulations is not required.

Building managers are responsible for assuring that systems in their buildings are run and maintained in accordance with SOPs. Table 4-2 summarizes evaluation results for in Service AUSTs and identifies actions for those systems to be modified.

TABLE 4-2

EVALUATION OF IN SERVICE AUSTs

AUST NO.	DESCRIPTION	STATUS	ACTION
1 and 258	Collection of used fire water from HEPA filter banks (emergency use only).	AEA tanks. Operated and maintained in accordance with current SOPs.	No modifications planned or necessary.
3 through 18	Used in processing of radioactive wastewater in WD building.	AEA or CWA tanks. Operated and maintained in accordance with current SOPs.	See Section 6 for discussion of RMP modifications.
19 through 22 and 24	Collection of radioactive wastewater.	AEA tanks. Operated and maintained in accordance with current SOPs.	No modifications planned or necessary.
25 through 27	Sumps used in collection and transfer of radioactive wastewater.	AEA tanks. Operated and maintained in accordance with current SOPs.	No modifications planned or necessary.
28 and 29	Collection of decon water from medical showers.	AEA tanks. Operated and maintained in accordance with current SOPs.	No modifications planned or necessary.
100, 120 and 254	Used for temporary holding of sanitary wastewater.	CWA tanks. Operated and maintained in accordance with current SOPs.	No modifications planned or necessary.
101 through 112	Chambers and basins used in sanitary wastewater processing.	CWA tanks. Operated and maintained in accordance with current SOPs.	No modifications planned or necessary.
113 through 116	Fuel oil storage tanks.	Operated and maintained in accordance with current requirements.	Scheduled for removal in May, 1995.

TABLE 4-2

EVALUATION OF IN SERVICE AUSTs

AUST NO.	DESCRIPTION	STATUS	ACTION
117, 118 and 121	Diesel fuel storage.	BUSTR tanks. Operated and maintained in accordance with current requirements.	See Section 6 for planned actions to comply December, 1998 BUSTR leak detection requirements.
119	Metal plating rinse tank.	CWA tank. Operated and maintained in accordance with current SOPs.	No modifications planned or necessary.
124 through 135	Sumps used for collection of sanitary wastewater and cooling water.	CWA tanks. Operated and maintained in accordance with current SOPs.	No modifications planned or necessary.
263 through 265	Tanks used as noise dampeners from explosives testing.	RCRA tanks. Included as part of Mound Part B application.	No modifications planned or necessary.
268 and 269	Condensate sumps from heating systems in T and H buildings.	CWA tanks. Operated and maintained in accordance with current SOPs.	No modifications planned or necessary.
271 through 273	Collection of water from fire sprinkler system.	AEA tanks. Operated and maintained in accordance with current SOPs.	No modifications planned or necessary.

4.2 Inactive Tanks

Inactive tanks are surplus systems which are still present on the site but are no longer in use and are not likely to be used. A field survey and drawing/records review was also conducted for these USTs with a copy of survey results provided in Appendix C. Table 4-3 provides a summary of the evaluation and identifies the program responsible for the removal or closure of these systems.

TABLE 4-3

EVALUATION OF INACTIVE TANKS

AUST NO.	DESCRIPTION	STATUS	ACTION
2, 23	Sump for radioactive waste water.	AEA Tank No modifications planned or needed.	To be scheduled for inclusion in D&D Program.
205 through 207, and 214 through 216	Sumps and tanks used for collection of radioactive and sanitary waste water.	To be addressed as part of OU6.	D&D Program
136, 200, 201, 217, and 218	Sumps, tanks and basins used in solvent and fuel storage.	To be addressed as part of OU5.	FFA Program
225	Metal plating rinse sump.	To be addressed as part of OU2.	FFA Program
226	Sump used for collection of radioactive waste water.	AEA Tank No modifications planned or needed.	To be scheduled for inclusion in D&D Program.
236	Beta wastewater sump	AEA Tank No modifications planned or needed.	To be scheduled for inclusion in D&D Program.
262	Storage of waste oil.	AEA Tank No modifications planned or needed.	To be scheduled for inclusion in D&D program.
255, 266	Calorimeter bath.	AEA Tanks No modifications planned or needed.	To be scheduled for inclusion in D&D Program.
267	Low risk waste tank.	AEA Tank No modifications planned or needed.	To be scheduled for inclusion in D&D Program.
270	Former septic tank.	AEA Tank No modifications planned or needed.	To be scheduled for inclusion in D&D program.

UST removals and closures will be performed within the ER or D&D programs. Following removal of D&D tanks, final site assessment and closure verification will be performed. OU6 has been designated for D&D closure verification.

Some inactive tanks are sumps or containments which are part of the physical structure of a building still in use. These sumps or containments will not be removed until the building in which they are present is permanently decommissioned. Tanks within this category are recommended for inclusion in D&D program and will be maintained in the AUST database until plans to decommission the building or remove and close the UST have been specifically identified.

Potential releases to the environment will be investigated and mitigated as part of the closure of these systems in accordance with the governing regulatory authority. Corrective actions will be coordinated in order to maintain consistency (e.g., cleanup standards) among the various regulatory authorities.

4.3 Closed In Place/Removed Tanks

Table 4-4 lists those tanks that have been closed in place (e.g. filled with concrete) and those that have been physically removed. Documentation for these tanks has been reviewed to verify that closure was or is being performed in accordance with applicable regulations. Copies of field survey and evaluation sheets are provided in Appendix B.

14 USTs are listed on Table 4-4 as closed. These are tanks upon which preliminary D&D activities (such as rendering the interior of the tank inert by filling with concrete or gravel) have taken place. These activities are intended to serve as interim measures to allow reuse of an area or to reduce the potential for a release of radiological constituents. The USTs for which interim measures have been taken are not considered closed until final action has been taken consistent with the appropriate regulatory program.

TABLE 4-4

EVALUATION OF CLOSED IN PLACE/REMOVED TANKS

AUST NO.	DESCRIPTION	STATUS	ACTION
202 through 204	Gasoline storage tanks (removed in 1986).	To be addressed as part of OU2.	FFA Program
208 through 213	Radioactive wastewater tanks (removed various dates).	To be addressed as part of OU6.	D&D Program
219, 220	Aviation fuel and waste storage (removed).	To be addressed as part of OU5.	FFA Program
222, 223	Diesel fuel storage (removed in 1989).	To be addressed as part of OU2.	FFA Program
224	Septic tank (closed in place).	To be addressed as part of OU5.	FFA Program
227 through 235	Septic tanks and basins used in solvent and fuel storage.	Closed in place.	To be scheduled for inclusion in D&D program.
237	Alpha wastewater sump.	Closed in place.	To be scheduled for inclusion in D&D program.
238 through 240	Gasoline storage tanks (removed).	To be addressed as part of OU5.	FFA Program
241	Septic tank (removed).	To be addressed as part of OU6.	D&D Program
250, 251	T Building wastewater sumps (closed).	Closed in place.	To be scheduled for inclusion in D&D Program.
260	Fuel oil storage (removed).	OU not yet assigned.	Recommended for inclusion in ER program.
261	Septic tank.	Closed in place.	To be scheduled for inclusion in D&D Program.

In Service and Inactive USTs whose primary regulatory jurisdiction is the AEA will be considered closed when D&D has finished its cleanup activities and closure verification is completed within the scope of OU6.

In Service and Inactive USTs whose primary regulatory jurisdiction is CWA will be considered when the systems are taken out of service, disconnected and cleaned, and are not intended to be returned to service.

Closure of USTs subject to the CWA and AEA will incorporate CERCLA verification soil sampling if evidence of leakage or known historical leakage exists. If leakage has occurred, sampling for the current and historic chemical and/or radionuclide constituents will be performed. CERCLA verification sampling will address other potential contaminants and provide confirmation that the soil no longer contains contamination from the tank. Excavations will remain open until receipt of validated CERCLA verification sampling results. Closure reports will be compiled but do not require USEPA or OEPA approval. Closure reports will be provided to regulatory agencies as requested.

Some tanks which have been closed in place are sumps or containments which are part of the physical structure of a building still in use. These tanks will not be removed until the building in which they are present is permanently decommissioned. USTs of this type are recommended for inclusion in the ER or D&D programs and will be maintained in the AUST data base until plans to decommission the building or remove and close the UST have been specifically identified in the appropriate program plan.

EXHIBIT F

BUILDING DS WASTE MANAGEMENT INFORMATION

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

materials. Research, production, and testing included devices containing small quantities of energetic materials. The program began in the E, I, and SW buildings. In E Building, the plastics development program involved process improvement studies, new material investigations, evaluation of commercially produced plastic, and adhesive chemistry studies. In addition, detonator pilot plant operations and physical studies of high explosives were carried out. The detonator program was expanded into the SW Building in 1960. Explosive manufacturing was planned to take place in the I Building.

In 1961, the explosive program undertook the study of explosive purification. This program as conducted in Building 1 (Rhinehammer 1961).

2.16.1. Process Descriptions

2.16.1.1. Plastics Research

Plastics research at Mound conducted in the late 1950s and early 1960s was directed toward the development of a process for blending diallyl phthlalate powders and filler materials into resins whose chemical and physical properties met certain performance standards and could be molded easily. Asbestos fibers, micas and china clays, and man-made materials such as Dacron were evaluated. Various pigments such as titanium dioxide were also evaluated (Eichelberger 1961a). The process involved formulation, followed by injection molding and physical testing of the finished products. Testing included tensile strength, impact resistance, and residual volatile contents. Formulations typically included Dapon 35, ter-butyl perbenzoate, benzoyl peroxide, 10-undecenoic acid, and acetone. Typical batches ranged from 15 g to 15 pounds (Eichelberger 1961b).

2.16.1.2. Adhesives Research

In the early 1960s, research conducted on adhesives was directed toward the reevaluation of all previous work on polyurethane and polyurathane-epoxy copolymer systems. Dozens of formulations were studied throughout the program, including effects of polyol content on epoxy-modified polyurethanes and the effects of di-epoxide modifiers on polyurethanes and the adiprene-ferric acetyl acetonate-polyol systems. The polyols used were typically 1,3-butanediol, 1,4-butanediol, 1,2,6-hexanetriol, 1,5-pentanediol, and 1,1,1-trimethylolpropane. Normal formulations required 20 to 30 g of Adiprene resin and 0.02 to 0.2 g of catalysts. Many formulations of commercial adhesives and epoxy compounds were evaluated. Some required solvents such as methyl ethyl ketone. Other amine curing agents, such as 4,4-methylene-bis-(2-chloroanilene), also known as MOCA, were also used. The adhesive formulations were evaluated for elastomer properties, cure times, pot life, viscosity, and application characteristics (Eichelberger 1961b).

2.16.1.3. Transducers and Plastic Component Production

Mound produces transducers, plastic components, and inert plastic elements of detonators. Parts are cleaned in ultrasonic baths using trichloroethylene. Spent solvent is poured into a sink that drains to a waste solvent drum located in a shed attached to the building. Other organic solvents such as ethyl and isopropyl alcohols, toluene, and trichloroethane are also used for cleaning parts. Methyl, ethyl, and isopropyl alcohols are used to clean actuators parts. After use, they are transferred to waste drums located in an approved storage shed. Freon TF is also used as a cleaning and degreasing solvent, and the waste Freon is kept in a separate 5-gallon container in an approved storage shed.

Plastic molding activity also involves ultrasonic cleaning of components using Freon TE, Freon TF, and ethyl alcohol. Water from ultrasonic baths is drained to waste solvent drums stored in an approved storage area.

2.16.1.4. Pyrotechnic and Tape Development

Small quantities of pyrotechnic and explosive-containing wastes and organic solvent wastes are generated by pyrotechnic and tape development activities. Tape production involves a photoresist process, which generates aqueous waste streams containing sodium carbonate, ferric chloride, potassium hydroxide, and the photoresist that is chemically removed from the tape. These wastes are discharged to the sanitary sewer system. The tape is then plated with nickel. The plating solutions used in this process contain nickel sulfamate and sulfuric acid. After using the sulfuric acid cleaning solution and nickel sulfamate plating solution, they are returned to their original containers for reuse. Throughout this process, ethyl alcohol is used to clean tapes. Gold cyanide is used when tapes are gold-plated.

2.16.1.5. Energetic and Low-Energy Component Development

In this area, research and development work involves the use of primary, secondary, and special explosives to fabricate low-energy and energetic components. In addition to the explosive elements used in this activity, numerous organic solvents are used in small quantities. These solvents include ethyl and isopropyl alcohol, acetone, toluene, Freon, and trichloroethane.

2.16.1.6. Explosive Processing

Energetic materials may be classified as explosives, propellants, and pyrotechnics. Various high or secondary explosives, such as pentaerythritol tetranitrate (PETN), plastic bonded explosives (PBX), and tetryl, are used in development and manufacturing programs. The production of explosives involves a recrystallization process wherein the explosive is dissolved in a suitable solvent such as acetone or ethyl alcohol and water is added to the solution to allow fractional crystallization. The recrystallized explosive is filtered and washed with water. The major reagents used in this process are acetone, ethanol, dimethylsulfoxide, and dimethylformamide.

The management of waste energetic materials at Mound is described in *Destruction of Energetic Waste Materials* (EG&G 1990). This manual describes procedures for segregating wastes by groups, for packaging wastes destined for treatment in the retort, and for treatment by other thermal processes. Energetic waste materials are separated and classified into one of the following groups:

Group 1 contains explosive-contaminated flammable materials such as paper, wood, cardboard, plastic, air filters, etc.

Group 2 contains fabricated components and assemblies such as pellets, loaded cups, subassemblies, detonators, and surveillance-generated explosive waste.

Group 3 contains loose bulk materials such as PETN, PBX, hexahydro-1,3,5-trinitro-s-triazine cyclotetramethylene-tetranitramine (RDX), octahydro-1,3,5,7-tetranitro-1,3,5,6-tetrazocineyclo-tetramethylenetetranitramine (HMX), and tetryl.

Group 4 contains mild detonating materials, including mild detonating fuses and mild detonating cord.

Group 5 contains pyrotechnic powder and scrap or solid waste contaminated with pyrotechnic materials.

Group 6 contains hexanitrostilbene (HNS) and HNS-contaminated waste material.

Group 7 contains 2-(5-cyanotetrazolato)pentaamine, cobalt (III) perchlorate (CP), bulk CP, CP-contaminated materials, and CP components.

Group 8 contains thermite scrap and thermite-contaminated waste.

Group 9 contains primary explosives and primary explosive-contaminated waste.

Group 10 contains propellants and associated wastes.

Group 12 contains nonburnable explosive assemblies, such as timers.

Group 13 contains experimental and laboratory energetic material and explosive devices.

Group 14 contains waste energetic materials in solution/solvents.

Wastes belonging to Groups 1, 2, 3, 4, 7, 9, and 13, as described above, are destined for treatment in the retort.

2.16.2. Waste Generation

The majority of the wastes generated in association with explosive and related developmental and production activities are organic solvents and aqueous mixtures of these solvents. Organic solvents include trichloroethene; trichloroethane; methyl, ethyl and isopropyl alcohols; toluene; and acetone. Other chemicals include Freon TF, Freon TE, sodium carbonate, ferric chloride, potassium hydroxide, nickel sulfamate, sulfuric acid, and cyanide solutions. Metals involved include titanium, nickel, copper, and gold. Historically, the aqueous solutions containing organic solvents, mostly acetone, were released to leach pits and allowed to evaporate and disintegrate naturally. Since the mid-1980s, the solutions have been drummed and handled through the hazardous waste storage area. These solvent wastes are transferred to 55-gallon drums and 5-gallon cans and stored until the containers are full. Waste solvents are recycled or incinerated at off-plant facilities. Aqueous wastes containing ferric chloride and potassium hydroxide are allowed to discharge to the sanitary sewer system. Nickel and gold plating and wastes from photographic processing are collected and picked up by Mound waste management personnel for packaging and disposal. Photographic wastes receive pretreatment to recover silver before being picked up by waste management personnel. The organic solvent waste from the fractional crystallization of PETN, known as "27 waste solvent," was drained to an open trough, and the liquid was filtered. The filtrate was picked up by waste management personnel and handled as hazardous waste. Surplus explosives are burned in the thermal treatment unit.

The adhesives programs evaluated a wide range of chemicals including Adiprene 100, 167, 213; polyethylene glycol; MOCA; aliphatic epoxy resins; polypols including 1,3-butanediol, 1,4-butanediol, 1,2,6-hexanetriol, 1,5-pentanediol, and 1,1,1-trimethylolpropane; Versamid 140; Epon 812; dipentive dioide; and butanediol diglycidl ether, as well as other plastic polymers (e.g., 3,4-epoxy-6-methylcyclohexylmethyl-3,4-epoxy-6-methylcyclohexanecarboxylate and 1,4,5,6,7,7-hexachlorobicyclo-(2.2)-5-hepthane-2,3 dicarboxylic anhydride). Adhesive wastes were generally disposed of in the normal trash after testing, as were the excess volumes from production facilities. Solvent vapors were simply vented to the atmosphere.

5.3.4. Building 28 Solvent Storage Area

The Building 28 solvent storage area is a sheet metal building on a concrete pad located on the east side of Building 28, on the Main Hill, in the north-central portion of Mound (Figure 5.1). Historically, waste solvents were pumped from Building 28 into drums located on a concrete pad on the south side of the building. There was no curbing or controls to contain releases. In 1990, a solvent storage building was constructed to contain the drums. Solvents used in Building 28 are now stored in the new building. The solvents consist of alcohol, acetone, and dichloromethane. The alcohol and dichloromethane are pumped from drums into Building 28 through stainless steel lines. The acetone is stored in bottles. Once used in the building, the solvents are returned through copper lines to waste drums in the solvent storage shed. The drums are equipped with sensors to automatically shut off the solvent flow when full (Koons 1991). Drummed waste solvent is transferred as required to the hazardous waste storage area in Building 72 near the western edge of the Mound boundary (MRC 1983). In 1989, approximately 800 gallons of waste solvents were generated in Building 28 (Fentiman 1990).

5.3.5. DS Building Solvent Storage Shed

The DS Building solvent storage shed is on the east side of DS Building on the Main Hill, in the north-central portion of Mound (Figure 5.1). The shed was built in the early 1970s and is still in operation. The shed is a completely enclosed structure of approximately 10 ft by 10 ft, with a 12-ft ceiling equipped with a fan for ventilation. It has a concrete floor and a sealed drain with an unknown point of discharge, although a storm drain is near the shed. The concrete floor is curbed and covered with a metal grate. The curbing was not installed until 1987, at which time the drain was sealed. Historically, solvents were stored in 5-gallon cans within the building and picked up and delivered by laborers. The shed now receives waste solvent from the DS Building and also contains product-grade solvent to be used in the building. Waste solvent is pumped from the DS Building into sealed 55-gallon drums in the storage shed through automatic discharge hoses that are equipped with automatic shutoff devices. During a 1990 site visit, two drums of waste solvents composed of 1,1,1-trichloroethane, trichlorofluoromethane, and trichloroethene; and product-grade solvents including one drum of 1,1,1-trichloroethane, two drums of trichlorofluoromethane, and one drum of ethyl alcohol, were found (DOE 1992g). Drummed waste solvent is transferred as required to the hazardous waste storage area in Building 72 near the western edge of the Mound boundary (MRC 1983).

Waste Stream	Waste Stream Description	1988 Volume[a]	1989 Volume[a]
38	Stoddard solvent (new)	0	55 gal
39	LIX solvent	0	55 gal
40	Oil and water	495 gal	55 gal
41	Oil and solvents	55 gal	55 gal
42	Nickel chloride	0	55 gal

Wastes for which 1989 Volume was Less Than 50 Gallons but Greater Than 10 Gallons	
Alodine waste	Maleic anhydride
Copper cyanide	MOCA waste
Dichloromethane	Oakite
Electroless nickel	Passivating waste
Lead waste	

Wastes for which 1989 Volume was 10 Gallons or Less	
Acetone and absorbent	
Acetone and asbestos	Gold waste
Acetone and trichloroethane	Grease
Alcohol and ethyl acetate	Isocyanate cleanup material
Alcohol and freon	Mercury
Alcohol and trichloroethane	Methyl ethyl ketone
Aluminum waste	Nitric acid and nickel
Benzene	Nitric acid and zinc chromate
Blankrola	Oil cleanup material
Carbon disulfide	Oil and mercury
Chromic acid	Propylene glycol
Cyclohexane	"R" solvent[k]
"DS" solvent[j]	Sodium dichromate
Ethyl acetate	Tricholoromethane
Ethylene glycol	Trichloroethene
Formaldehyde	Zinc chromate

Ref.: Fentiman 1990

[a]All volumes are approximate. Waste cans and drums are often not full when they are picked up. Sometimes an estimated volume of waste is recorded on the pickup sheet and sometimes the container volume is used.

[b]Contents include acetone, acetonitrile, ethyl and isopropyl alcohols, toluene, dichloromethane, and water.

[c]Contents include ethyl, methyl, and isopropyl alcohols; acetone; trichloroethene; trichloroethane; dichloromethane; and toluene.

[d]Contents include isopropyl, diacetone, and ethyl alcohols; dichloromethane, and acetone.

[e]Contents include ethyl and isopropyl alcohols, dichloromethane, trichloroethane, and Freon.

[f]Contents include hydrochloric, sulfuric, nitric, and phosphoric acids.

[g]Contents include ethyl, methyl, isopropyl, and diacetone alcohols.

[h]Contents include ethyl and isopropyl alcohol and trichloroethane.

[i]Contents include sodium, potassium, and ammonium hydroxide.

[j]Contents include ethyl and isopropyl alcohols, acetone, toluene, Freon, trichloroethane, and trichloroethene.

[k]Contents include unspecified solvents; some may be halogenated.

MOCA - 4,4-Methylene-bis-(2-chloroanilene)

Three cooling tower basins are installed to collect the cooled water from the 10 cooling towers and recycle it back into the plant cooling system. The cooling tower basins are below-ground concrete sumps and are provided with circulating pumps. The basins are covered with a concrete top and are on the north side of the cooling towers. Periodically, blowdown of the cooling water system is performed. The blowdown water is routed to the Mound drainage ditch. The area around the cooling towers and the basins is covered with asphalt to keep dirt and debris from entering the tower via the air draft. The start-up dates for the cooling tower basins vary. They are all currently in operation.

A cooling tower drum storage area is located near the cooling towers. The storage area consists of an asphalt pad on the south and west sides of the cooling tower. The pad is used as a chemical staging area. No containment system is present to control drum leakage or runoff. The pad is used to stage biocides, anticorrosion chemicals, boiler treatment chemicals, ethylene glycol, and other powerhouse water treatment chemicals contained in 55-gallon drums. The pad was built in the early 1970s and is still operational.

3.5. PHOTOPROCESSING

Photoprocessing activities are conducted at approximately 20 locations at Mound. The functional groupings of these activities are listed below:

- Product Development and Environmental Testing
- Manuals and Procedures
- Drawing Control
- General Analytical
- Advanced Devices Plastics (ADP) Operations
- Photography
- Instrumental Analysis
- Radiography (Industrial)
- Radiography (Medical)
- Classified Explosives Work

Specific wastes generated from the above activities include approximately 2,850 L (750 gallons) of spent fixer solution that are collected and stored on-plant for future recovery of silver using a recently acquired electrolytic unit, and approximately 2,850 L (750 gallons) of other photoprocessing waste consisting of developers, stop baths, bleaches, rinses, etc., that are collected for on-plant storage prior to transfer to an EPA-permitted vendor for transport and treatment/disposal.

In addition, very small amounts of photoprocessing waste are generated by X-ray film development. The X-ray film development is performed in Building DS, using a Hope processor, which uses Kodak chemicals (Kodak Industrex developer and replenisher, Kodak Industrex fixer and replenisher, Kodak

liquid developer system cleaner, and Kodak fixer wash system cleaner). These chemicals are collected in a waste can for pickup by Mound waste management personnel. In 1989, 4 gallons of photoprocessing waste were collected by Mound waste management personnel. In February 1990, a new Fuji processor replaced the Hope model. Different chemicals are now used, and Mound waste management is developing a plan for waste disposal.

3.6. ANALYTICAL LABORATORIES

The analytical laboratories support the research, production, and waste treatment operations at Mound. They also periodically participate in weapons components surveillance programs and the Safeguards Analytical Laboratory Exchange (SALE) program. The purposes of the SALE program are to verify standard analytical techniques used by other laboratories and to verify the radioisotope inventory.

3.6.1. Wastes Generated

The volume of waste generated by the analytical laboratories is very small. Solid wastes have included glass, paper, and plastic contaminated with plutonium-239, plutonium-238, uranium-235, uranium-238, beryllium, and mercury. The beryllium-contaminated wastes included glass, paper, gloves, and sample precipitates. Typically, less than 0.1 g of beryllium has been generated annually.

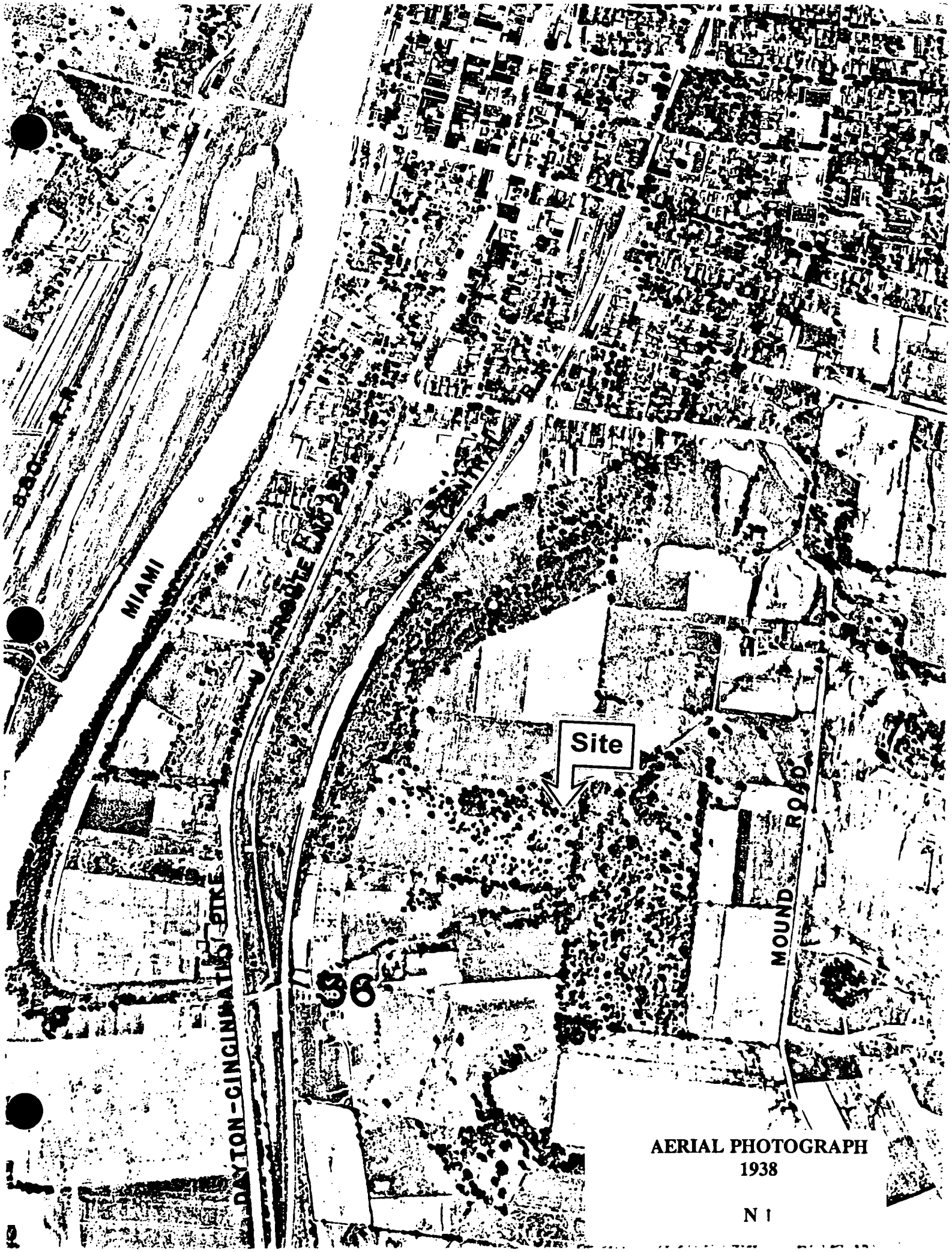
3.7. ENVIRONMENTAL MONITORING PROGRAM

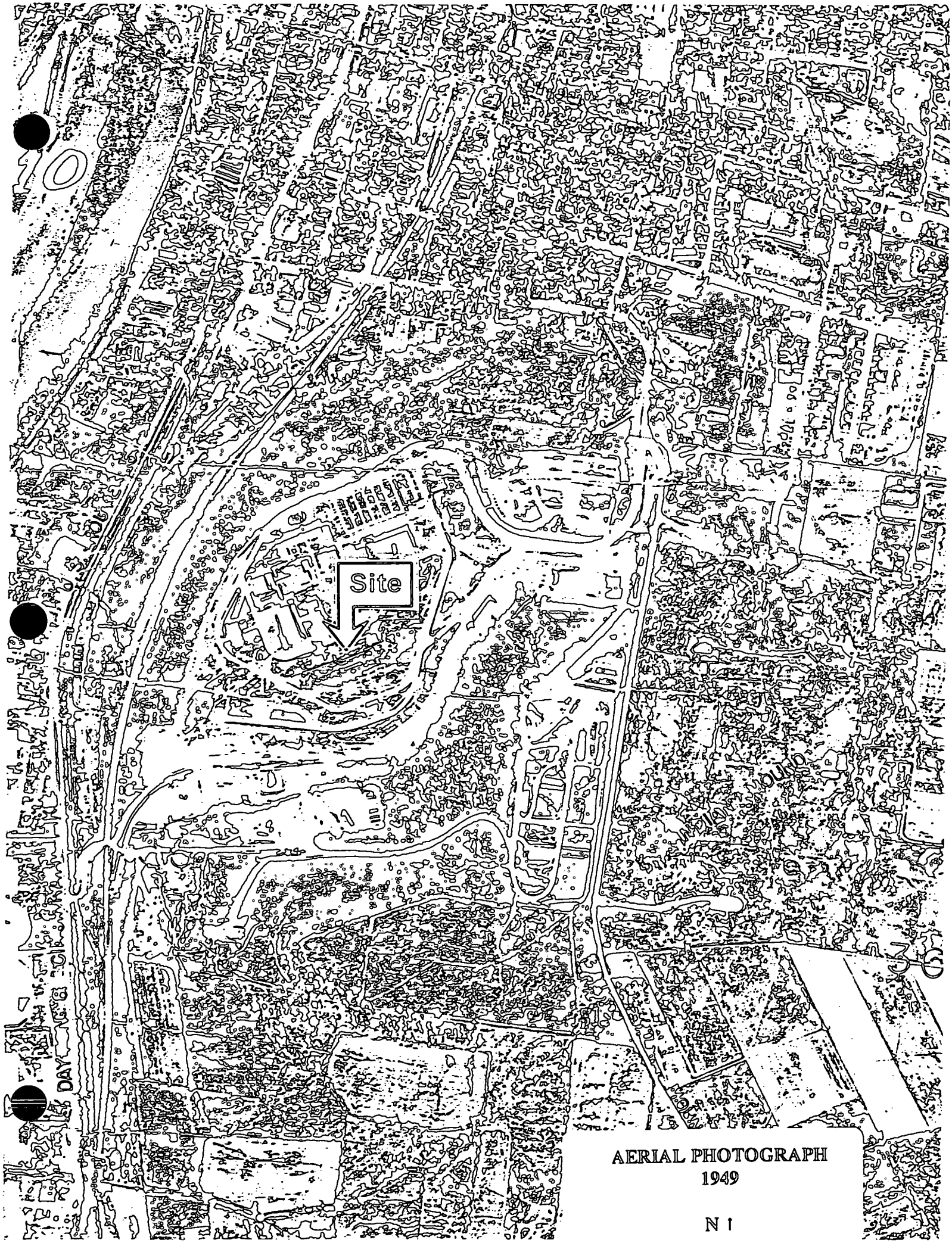
The environmental monitoring program at Mound began with the bioassay program in 1948, managed by the health physics group. The program was conducted from 1948 to 1955 in the I Building, which was constructed to provide a facility separated from the other research and production activities to provide the low radioactive backgrounds necessary for low-level counting. Similar work had been conducted in the warehouse in Dayton, which was removed from the other Dayton units. In 1955, the low-level counting facilities were moved from the I to the T buildings, and in 1967, they were moved to a new isolation laboratory in the E Building, where they remain.

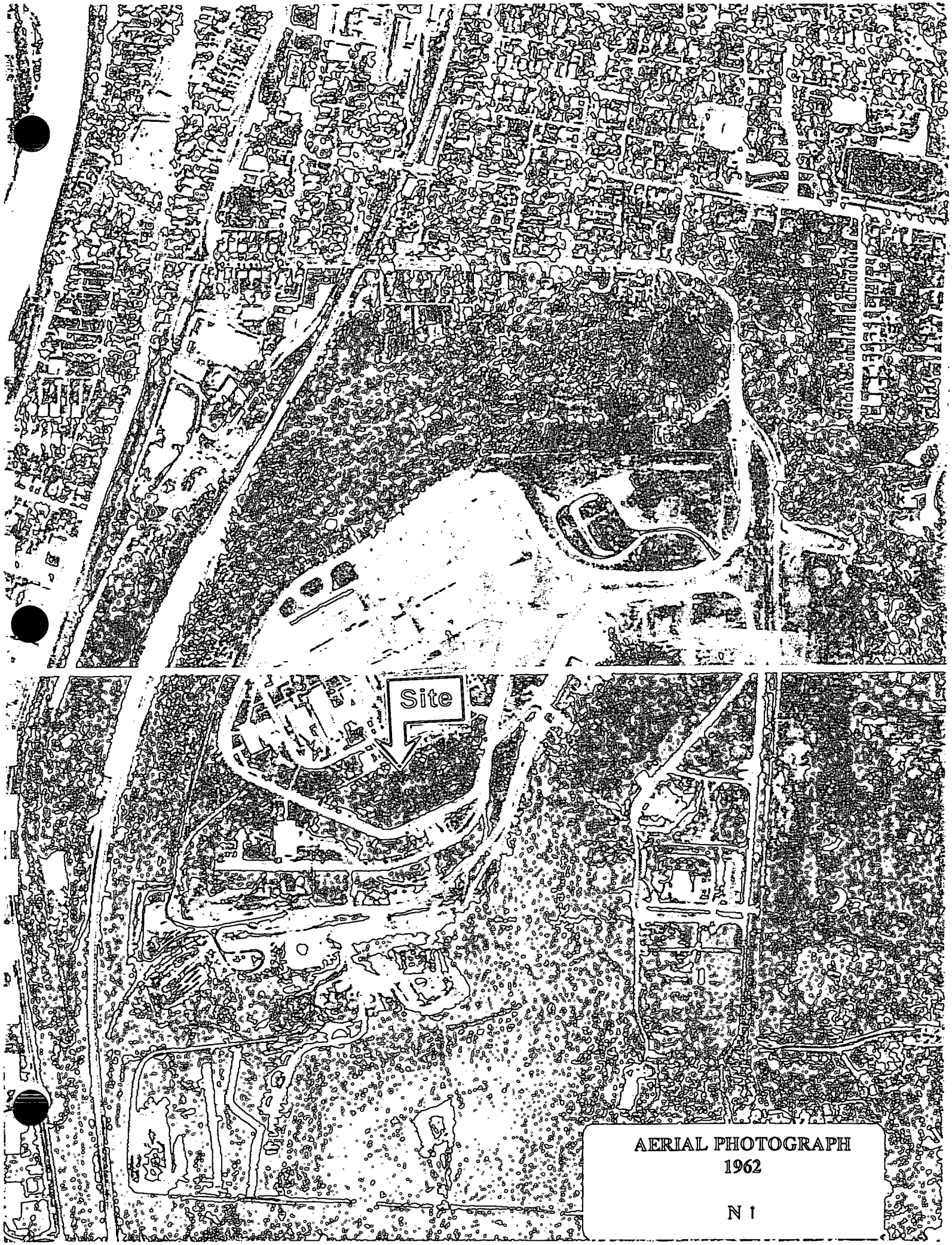
The environmental program was conducted by the health physics group and included worker urinalysis, air samples, surface wipe samples, and river surveys. Monitoring of the polonium levels in worker urine samples and in the environment was the focus of the work in the 1940s and 1950s. As other radionuclides came into use at the plant, the scope of the environmental program expanded; radium-226 was added to the urinalysis program in 1950, plutonium-239 in 1956, and plutonium-238 and tritium in 1958. Thorium was added in 1955 as part of the ionium and anticipated thorium refinery program, but was shortly terminated (Meyer 1956a). Radium-226 and plutonium-239 were phased

EXHIBIT G

AERIAL PHOTOGRAPHS


MIAMI
Site
MOUND ROAD
DAYTON-CINCINNATI PIKE
AERIAL PHOTOGRAPH
1938
N


Site
AERIAL PHOTOGRAPH
1949
N



AERIAL PHOTOGRAPH
1962

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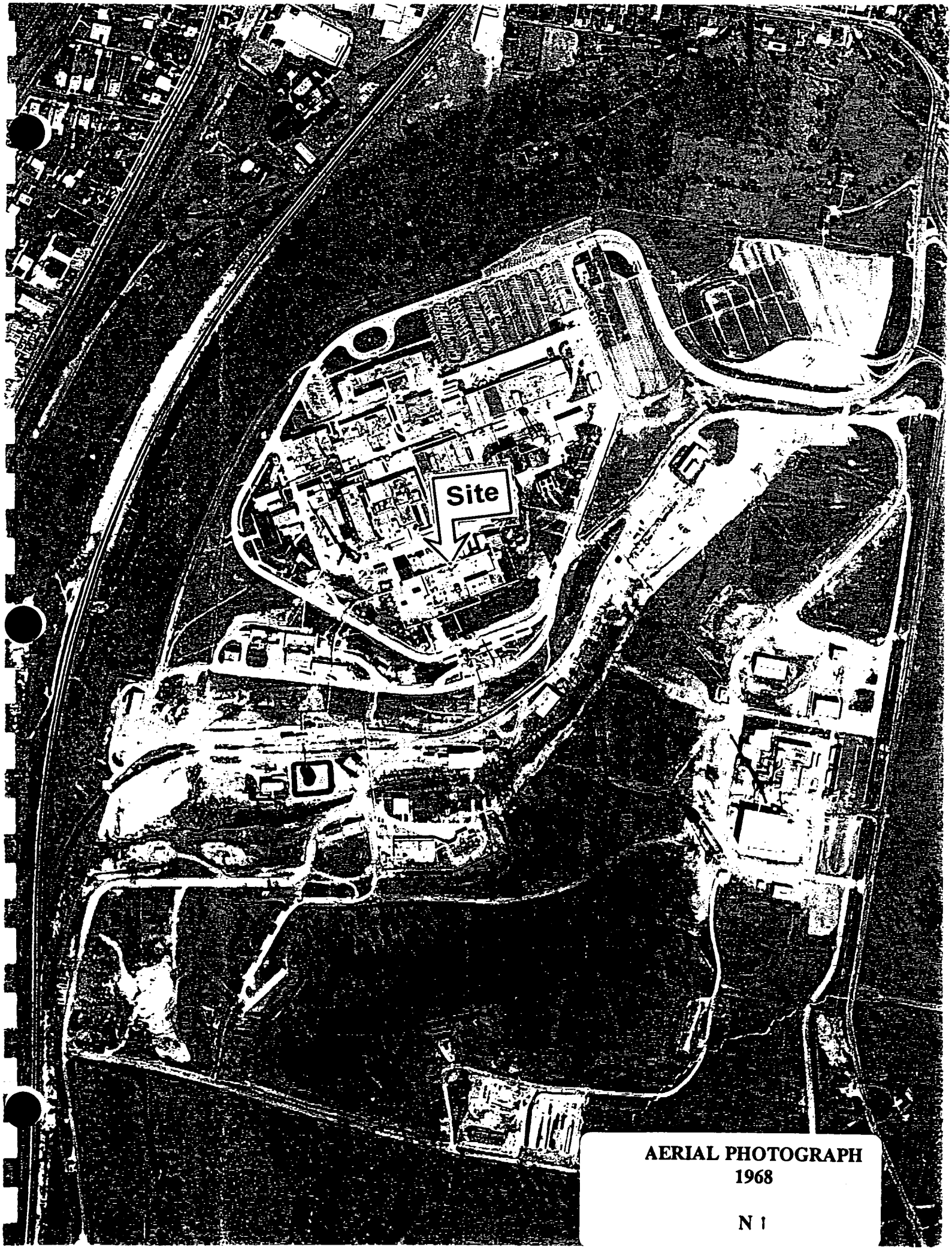

AERIAL PHOTOGRAPH
1968

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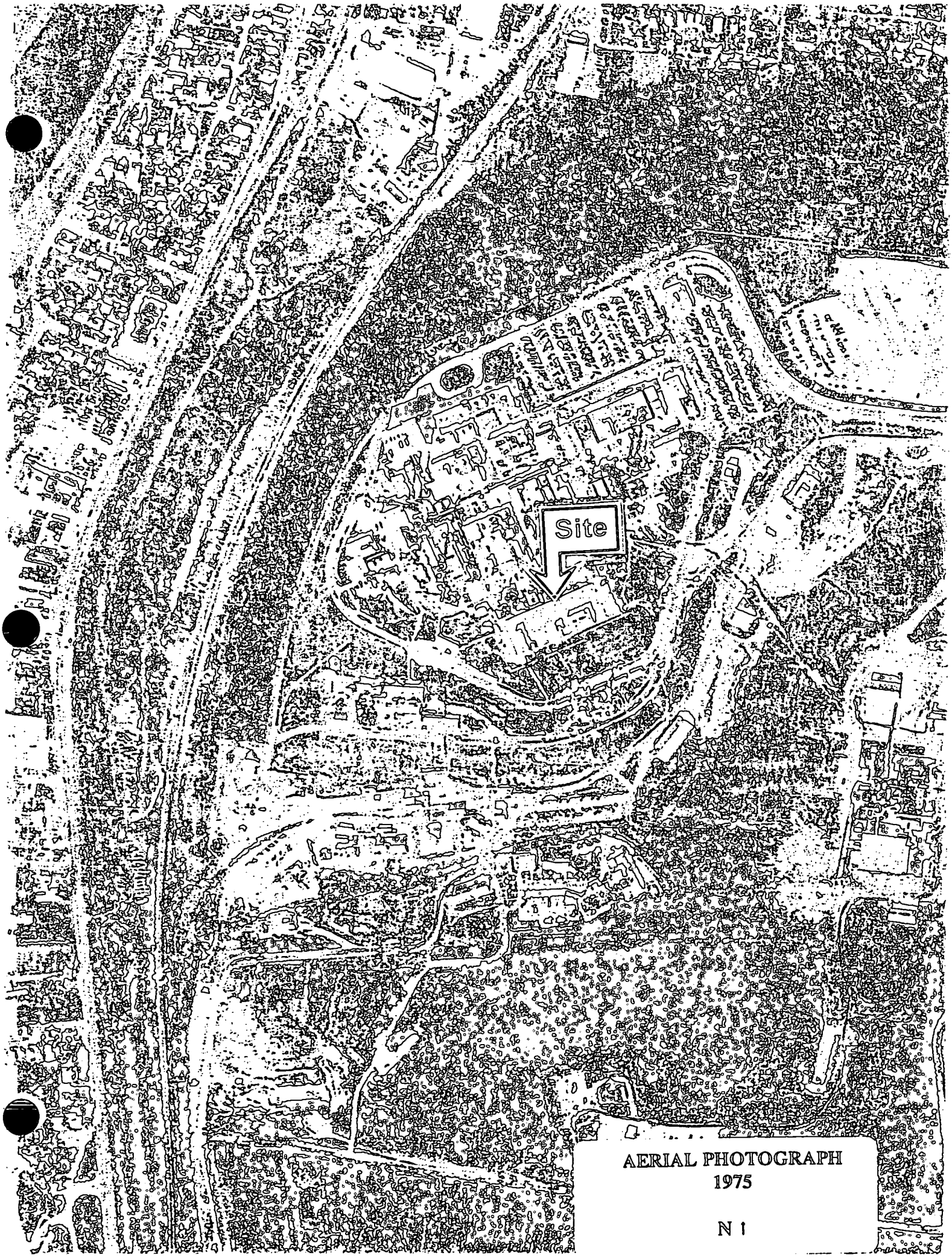

AERIAL PHOTOGRAPH
1975

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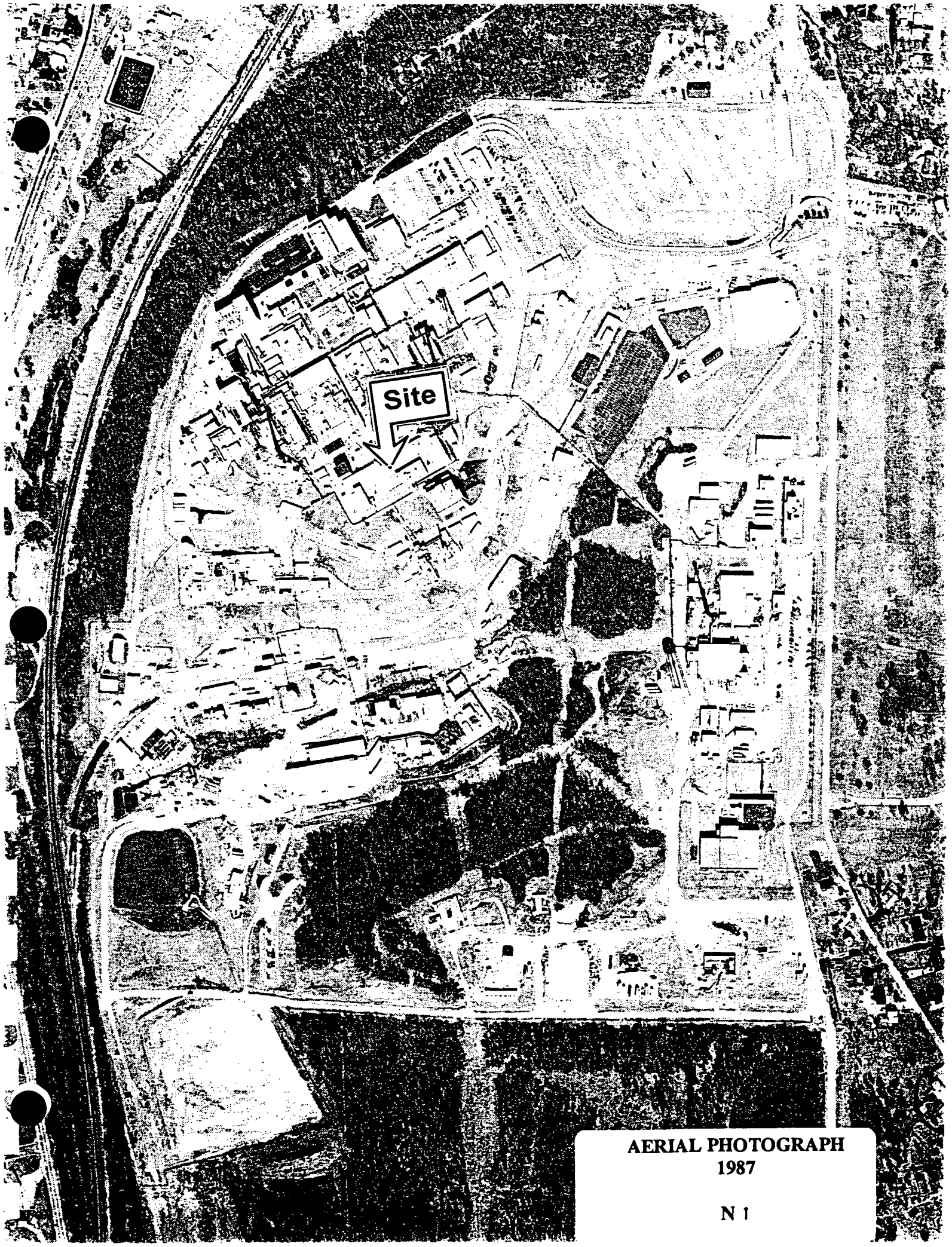
AERIAL PHOTOGRAPH
1980

N ↑



AERIAL PHOTOGRAPH
1987

N ↑

AERIAL PHOTOGRAPH
1995

N

EXHIBIT H

SANBORN MAP REQUEST RESPONSE

02/06/96

Environmental Data Resources, Inc.
3530 Boston Post Road
Southport, CT 06490

Phone: (203) 255-6606
Fax : (203) 255-1976

Sanborn Map Search

ORDER# 100553-2

Order Date : 12/12/95

Customer Information

Shelby R. Politte
HOK/K Industrial
2490 Technical Drive
Box 3004
Miamisburg, OH 45343
Phone#:513-866-4211
Fax #:513-866-7473

SPECS FOR SANBORN MAP SEARCH:

Site Name & Address:

US Department of Energy
Off Mound Rd.

Miamisburg, OH 45432

Account # : 1018424
Account Exec : PCD

Cross Street :
Intersection :
County : montgomery

No Sanborn maps were found for the site searched.

EXHIBIT I

BUILDING DS ASBESTOS SURVEY

MOUND ASBESTOS SURVEY
BUILDING SUMMARY

BUILDING DS

FLOORS:	One	PIPE CHASES:	Yes
DATE BUILT:	1965	PENTHOUSE:	Yes (3)
CRAWLSPACE:	Yes	GROSS AREA, SQ. FT.:	47,810
SUSPENDED CEILING:	Yes	ADDITIONS:	1966, 1968

Asbestos was found to be present in Thermal System Insulation and/or other material in Building DS. The homogeneous areas for the suspect Asbestos Containing Materials are shown below. Refer to the Mound Asbestos Survey Sample Data Report for specific information on sample constituents, estimated amounts of the material, assessments, and percentages of each constituent in the sample.

HOMOGENEOUS AREAS
Sample Numbers: 0.438-0.497, 1.603-1.615
Unused Sample Numbers: 0.450, 0.489-0.490, 1.604

No.	Description	Result
1	Pipe Joint Insulation, Type IA, Hard Trowelled w/Fiberglass Runs	Positive
2	Pipe Insulation, Type IIA, Hard I	Positive
3	Pipe Joint Insulation, Type IIA, Hard I	Positive
4	Pipe Insulation, Type IIB, Hard II	Positive
5	Condensate Tape (White)	Positive
6	Ductwork Flex Connector	Positive
7	Plaster (Ceiling)	Negative
8	Plaster (Wall)	Negative
9	Drywall	Negative
10	Drywall Joint Compound	Negative
11	Ceiling Tile, CT1-A, (1'x1'), Fissured	Negative
12	Ceiling Tile, CT1-H, (1'x1'), Holes	Negative
13	Ceiling Tile, CT2-B, (2'x2'), Fissured w/Pinholes	Negative
14	Ceiling Tile, CT2-I, (2'x2'), Holes w/Pinholes	Negative
15	Ceiling Tile, CT3-N, (2'x4'), Smooth	Negative
16	Ceiling Tile, CT3-I, (2'x4'), Holes w/Pinholes	Negative
17	Ceiling Tile, CT3-B, (2'x4'), Fissured w/Pinholes	Negative
18	Oven Gaskets	Positive
19	Pipe Joint Insulation, Type IB, Hard Wrap Joints w/Fiberglass Runs	Negative
20	Drywall Ceiling Tile	Negative
21	Explosion-Proof Light Gaskets	Positive

MOUND ASBESTOS SURVEY
BUILDING SUMMARY BUILDING DS

HOMOGENEOUS AREAS, cont'd
Sample Numbers: 0.438-0.497, 1.603-1.615

Assumed ACM:	Amount	Location
Transite (Hood)	46 SF	Room 135B
Transite (Hood)	46 SF	Room 133
Transite (Hood)	46 SF	Room 127
Transite (Hood)	46 SF	Room 118
Transite (Hood)	46 SF	Room 118
Transite (Hood)	46 SF	Room 109B
Transite (Hood)	46 SF	Room 217
Transite (Hood)	46 SF	Room 251
Transite (Hood)	53 SF	Room 245
Transite (Hood)	46 SF	Room 209A
* Floor Tile	N/A	N/A
** Carpet	N/A	N/A

Drawing Reference: P68, P69, P70

* Floor tile quantities not included in scope.
** Carpet quantities not included in scope.

TABLE 1. HOMOGENEOUS AREAS OF SUSPECT ASBESTOS-CONTAINING MATERIALS IN BUILDING DS, EG&G MOUND APPLIED TECHNOLOGIES, INC.
(Inspected September 9, 1988)

Homogeneous area No.	Type of material	Description of homogeneous area	Does homogeneous material contain asbestos? (assumed/sampled)
1	Thermal system insulation	Cementitious insulation on fittings between sections of fibrous-glass pipe insulation	Yes/sampled
2	Thermal system insulation	Preformed-block pipe insulation on steam and condensate lines throughout building	Yes/sampled
3	Miscellaneous	2-ft by 4-ft textured ceiling tile throughout the building	No/sampled
4	Miscellaneous	1-ft by 1-ft textured ceiling tile throughout the building	No/sampled
5	Miscellaneous	Transite panels on laboratory hoods in Room 245	Yes/assumed
6	Miscellaneous	Floor tiles throughout building	Yes/assumed

EXHIBIT J

QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONALS

HOK/K

STAFF PERSONNEL
QUALIFICATIONS RESUME

JOHN W. EY, P.E.

MANAGER, ENVIRONMENTAL ASSESSMENTS

Education

Bachelor of Mechanical Engineering, Vanderbilt University (1979)

MBA - Finance, University of Cincinnati (1988)

Registration

Registered Professional Engineer, Ohio, 1989
Registered Professional Engineer, Louisiana, 1986
Registered Environmental Property Assessor (REPA), 1994
Certified Professional - Ohio EPA Voluntary Action Program (Brownfields), 1994

Qualifications

Mr. Ey is currently the Manager of Environmental Assessments. Mr. Ey has performed over one hundred environmental site assessments throughout Ohio and other midwest states. He has also performed regulatory compliance audits in several large industrial facilities throughout the U.S.

Mr. Ey's former assignment at HOK/K was in the area of underground storage tanks (USTs). His responsibilities included the evaluation of tank systems, oversight of tank integrity testing, removal of underground storage tank systems, testing of soils and groundwater, coordination of remedial action plans with state and regulatory officials and writing of closure plan documents. He has prepared reports in compliance with BUSTR, USEPA and OEPA regulations. After receiving his MBA in 1988, he managed a construction company specializing in installation of UST systems for various petroleum products retailers.

Mr. Ey is a Professional Engineer with seventeen years of experience in a variety of industrial settings. His broad experience began with a major oil company where he had assignments in both refining and production. He developed specific experience in engineering design, plant operations and regulatory liaison. In his regulatory position, he was responsible for commenting on proposed EPA and OSHA regulations, interpreting the promulgated rules, and implementing them for oil and gas operations over a six state area. He coordinated annual NPDES reporting to USEPA for over 100 offshore drilling locations.

Qualifications (cont'd)

In addition, he has a working knowledge of a wide range of environmental regulations associated with the CWA, CERCLA, RCRA, OSHA and SARA.

Relevant Experience

Environmental Site Assessments and Audits

Performed over 100 environmental site assessments throughout Ohio and the midwest. These assessments are used to establish the innocent landowner defense under CERCLA. Mr. Ey has a working relationship with various lending institutions and developers.

Participated in environmental compliance audits of several industrial facilities throughout the U.S. These audits are typically performed for the legal counsel of the potential purchaser of the properties.

Underground Storage Tanks

Provided project management expertise for removal of over 100 underground storage tanks in northwest and southwest Ohio. These closures were prepared in accordance with BUSTR, USEPA and OEPA regulations.

Managed a construction company specializing in installation of underground storage tank systems for various petroleum products retailers.

Regulatory Engineering

Served on oil industry associations and worked with various state and federal regulatory agencies to influence development of new regulations.

Developed company positions regarding proposed regulations and submitted comments to the various agencies.

Interpreted new regulations (USCG, OSHA, COE, EPA and agencies over a six state area) and developed compliance procedures for company use.

Coordinated annual environmental (NPDES) reporting to USEPA for over 100 offshore production and drilling platforms.

Drilling Engineering

Designed drilling plans for fifteen oil and gas wells varying in depth from 5,000 feet to over 15,000 feet in Southeastern United States. This work included selection of appropriate drilling techniques, design of casing and selection of casing points, and testing of productive wells.

Relevant Experience (cont'd)

Refinery Engineering

Monitored refinery energy performance and presented monthly reports to upper management. Developed annual energy use forecasts.

Provided engineering support for mechanical equipment and was responsible for product quality.

Provided engineering support for major unit renovations (turnarounds).

Employment History

1989 - Present	HOK/K INDUSTRIAL Miamisburg, Ohio Manager, Environmental Assessments
1988 - 1989	COURTESY PETROLEUM MAINTENANCE Beavercreek, Ohio Vice President
1979 - 1987	EXXON COMPANY, U.S.A. Baton Rouge and New Orleans, Louisiana Refinery Engineer and Drilling Engineer

HOK/K

STAFF PERSONNEL
QUALIFICATIONS RESUME

JENNIFER C. VICAREL

ENVIRONMENTAL SCIENTIST

Education

Bachelor of Arts, Geology and Spanish, Trinity University (1982); cum laude, Phi Beta Kappa, Who's Who Among American Colleges and Universities.

Junior Academic Year Abroad, Institute of European Studies, Madrid, Spain (1981-1982).

Master of Science, Geology, Ohio State University (1985). Thesis field area: Navidad, Chile.

Continuing Education: Aquatic Toxicology, Tulane University (1986); Hydrogeology, University of New Orleans (1987); Analysis and Design of Aquifer Pumping Tests, National Ground Water Association (1989); Risk Assessment for Soil Contamination, University of Milwaukee-Wisconsin (1992).

Certifications

OSHA 40-hour Hazardous Waste Site Worker Certification; 8-hour Refresher Certification current through 1994

OSHA 8-hour Hazardous Waste Site Supervisor Certification

Qualifications

Ms. Vicarel's qualifications include ten year's experience as an environmental geologist in the environmental industry. Most recently she has performed hydrogeologic and remedial investigations, baseline risk assessments, and environmental impact statements for Fortune 50 industrial clients. Ms. Vicarel has completed numerous environmental site assessments for real estate transactions. She has also participated in environmental investigations of a Mexican border (maquiladora) facility for a Fortune 50 property, for which she also served as translator and liaison with the Spanish-speaking staff.

Qualifications (cont'd)

Ms. Vicarel's duties have included preparation of project proposals, budgets, and schedules; organization and execution of field investigations for data collection and analysis; evaluation of data and assessment of exposure and toxicological effects for baseline risk assessments; performance of hydrogeologic evaluations of state-regulated hazardous waste sites targeted for remediation; supervision of peers and field staff; participation in preliminary design and implementation of remediation systems; and authorship of technical reports and regulatory file review reports.

Ms. Vicarel has also served as an Health & Safety Representative of her company. Responsibilities include preparation and approval of health and safety plans, implementation of medical monitoring program, maintenance of OSHA training requirements, compliance with OSHA recordkeeping requirements, and purchasing of personal protective and monitoring equipment.

Relevant Experience

Risk Assessments

Ms. Vicarel has performed risk assessments for both RCRA- and state Superfund-regulated sites in New York and Ohio. Contaminants of concern at these facilities have included a suite of chlorinated solvents, pesticides, and fuels.

Hydrogeologic and Remedial Investigations

Working on sites regulated by state-Superfund (CERCLA) and RCRA programs in Massachusetts, New York and Ohio, Ms. Vicarel has investigated industrial facilities including a shipyard, several large aeronautics manufacturing facilities, a vacuum products manufacturing plant, corporate headquarter facilities of two large photographic equipment producers, an automotive assembly plant, a nursery, and an electric and gas utility. Chemicals released to soil and/or groundwater at these sites include fuels (gasoline, diesel, fuel oil), PCBs, chlorinated solvents, pesticides, and semivolatile compounds (PAHs, creosote compounds).

Environmental Site Assessments

Ms. Vicarel has performed numerous environmental site assessments in Massachusetts (under Chapter 21E Law), New York, and Ohio prior to real estate transactions. The objective of these assessments is to establish innocent landowner defense under CERCLA. Clients for these projects have included developers, banks, lawyers, manufacturing facilities, and industrial companies.

Relevant Experience (cont'd)

Exploration Geologist

Working in the Frontier Province of the Eastern Gulf of Mexico, Ms. Vicarel identified and assessed exploration prospects using geological and geophysical data. She successfully presented several prospects to upper management thereby influencing corporate decisions regarding off-shore land acquisition.

Professional Affiliations

Association of Groundwater Scientists and Engineers, division of National Ground Water Association

American Association of Petroleum Geologists

Society of Environmental Geology (formerly Society of Economic Paleontology and Mineralogy

Employment History

1994 - Present	HOK/K INDUSTRIAL Miamisburg, Ohio Environmental Scientist
1991 - 1994	H&A OF NEW YORK Rochester, New York Staff Environmental Geologist
1987 - 1991	GZA GEOENVIRONMENTAL, INC. Newton, Massachusetts Geologist
1985 - 1987	SHELL OFFSHORE, INC. New Orleans, Louisiana Exploration Geologist

HOK/K

STAFF PERSONNEL
QUALIFICATIONS RESUME

ELLEN E. STANIFER

PROJECT ENGINEER

Education

Bachelor of Science, Chemical Engineering, University of Cincinnati (1986)

Continuing Education in Health and Safety and Asbestos Abatement (1988-1989)

Registration

OSHA Hazardous Waste Site 40-hour Training
OSHA Hazardous Waste Site Supervisor 8-hour Training
American Red Cross First Aid
American Red Cross CPR Training

Qualifications

Ms. Stanifer is a Project Engineer. Her experience in the environmental field includes process air and water permitting, NPDES stormwater permit applications, preparation of Storm Water Pollution Prevention Plans and Storm Water Sampling Plans and SARA Title III compliance. She also has experience in conducting environmental site assessments and regulatory compliance audits. Ms. Stanifer has additional experience in emergency response to uncontrolled hazardous waste sites, remedial cleanup of hazardous waste sites, endangerment assessments, and environmental sampling. Her experience also includes work addressing health and safety issues including the use of personal protective equipment and certification for asbestos abatement.

Relevant Experience

Environmental Experience

Prepared Permit to Install and Permit to Operation Applications for air emissions sources.

Prepared Wastewater Pretreatment Permit to Install Applications for various industries in the Ohio region.

Prepared NPDES permit applications, including storm water discharge permit applications, for various industries in the Ohio region.

Relevant Experience (cont'd)

Prepared storm water permit applications, storm water pollution prevention plans and developed storm water sampling plans to satisfy NPDES storm water requirements.

Prepared SARA 312 and 313 reports and support documents.

Performed over 200 site assessments on undeveloped, commercial and industrial properties. In conjunction, performed numerous regulatory compliance audits on the industrial properties.

Managed a $3 million Superfund cleanup of polychlorinated biphenyls and asbestos from a 13 acre abandoned manufacturing facility.

Conducted endangerment assessments of hazardous waste sites including contaminants such as cyanide, organics, metals, and polychlorinated biphenyls.

Performed environmental sampling of soils, sediments, water, sludge, drums, underground and above ground storage tanks and solid wastes.

Investigated the use of alternative technologies for a wide variety of hazardous waste remediation.

Received Contractor/Supervisor Certification for Asbestos Abatement from the State of Ohio.

Professional Credentials and Affiliations

Member, American Institute of Chemical Engineers (AIChE)
Member, Society of Women Engineers

Employment History

1989 - Present	HOK/K INDUSTRIAL Miamisburg, Ohio Project Engineer
1987 - 1989	ROY F. WESTON Cincinnati, Ohio Project Engineer

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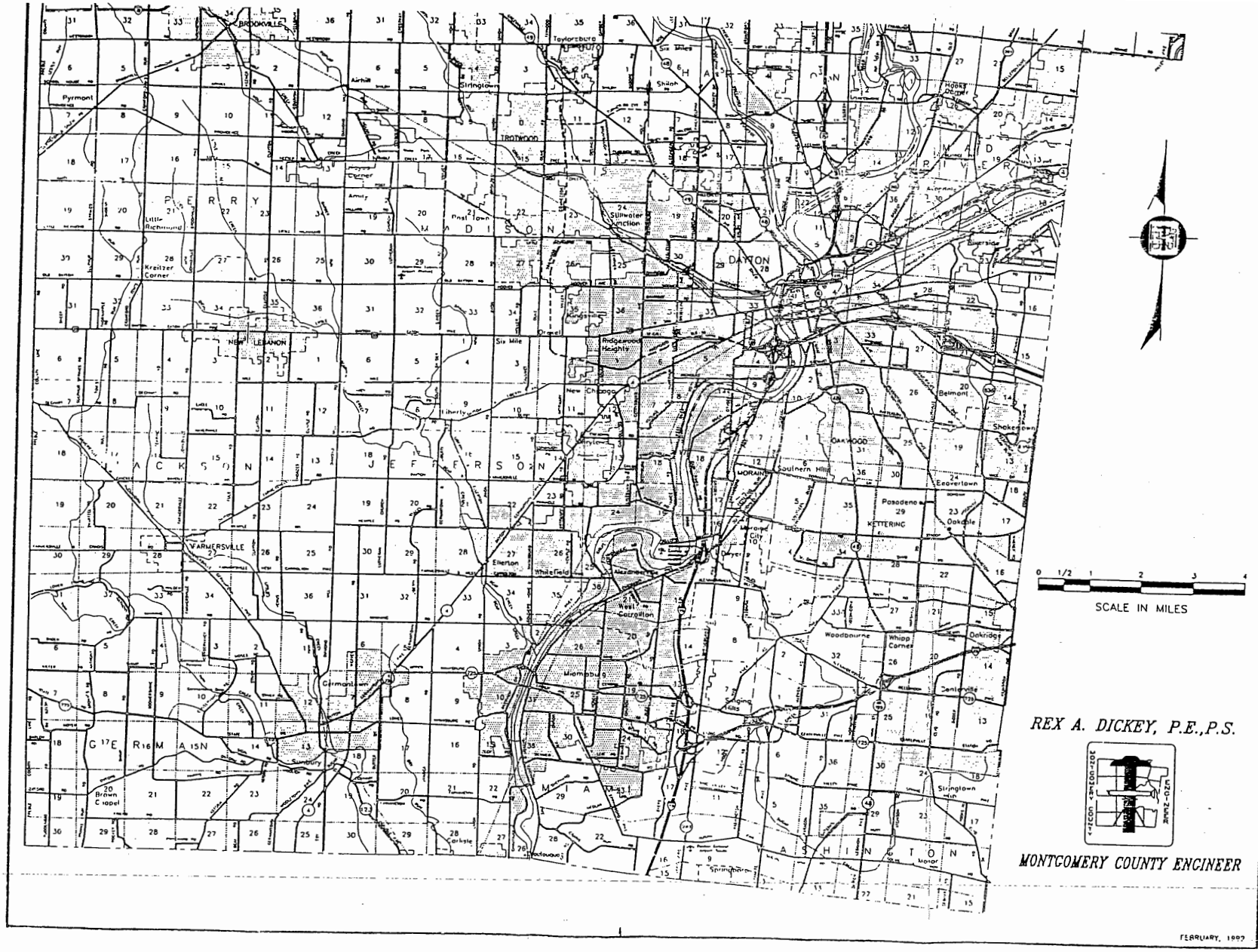
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Pyrmont
Airhill
Stringtown
Taylorsburg
Six Miles
Shiloh
TROTWOOD
Hooks Corner
PERRY
Little Richmond
Kreitzer Corner
MADISON
Post Town
Stillwater Junction
DAYTON
Riverside
NEW LEBANON
Six Mile
Ridgewood Heights
New Chicago
Liberty
Belmont
Shakertown
OAKWOOD
Southern Hills
MORAINE
Beavertown
Pasadena
KETTERING
Oakdale
JEFFERSON
FARMERSVILLE
Ellerton
Whitefield
Dwyer
West Carrollton
Woodbourne
Whipp Corner
Oakridge
Miamisburg
Germantown
Centerville
GERMAN
Sunbury
Brown Chapel
MIAMI
Stringtown Hill
ASHINGTON
Monor
0 1/2 1 2 3 4
SCALE IN MILES
REX A. DICKEY, P.E.,P.S.
MONTGOMERY COUNTY ENGINEER
FEBRUARY, 1992

FSD*

Legend

PROJECTS

- Test Fire Valley
- SM/PP Hill
- Main Hill Non-RAD
- Waste Management
- Main Hill Tritium
- Main Hill RAD
- Isotope Power

PRS STATUS

- D & D PRS's
- NFA PRS's
- NFAPS PRS's
- RA,FA,UB PRS's

0 100 200 400 600 800 1000

Scale in Feet

ISS	DATE	REVISION	BY	CHKR	ENG	M
*	**/**/**	*	*	*	*	

MOUND

Environmental Restoration Geographic Information System

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																				
ISSUE	*																									
PART CLASSIFICATION																										

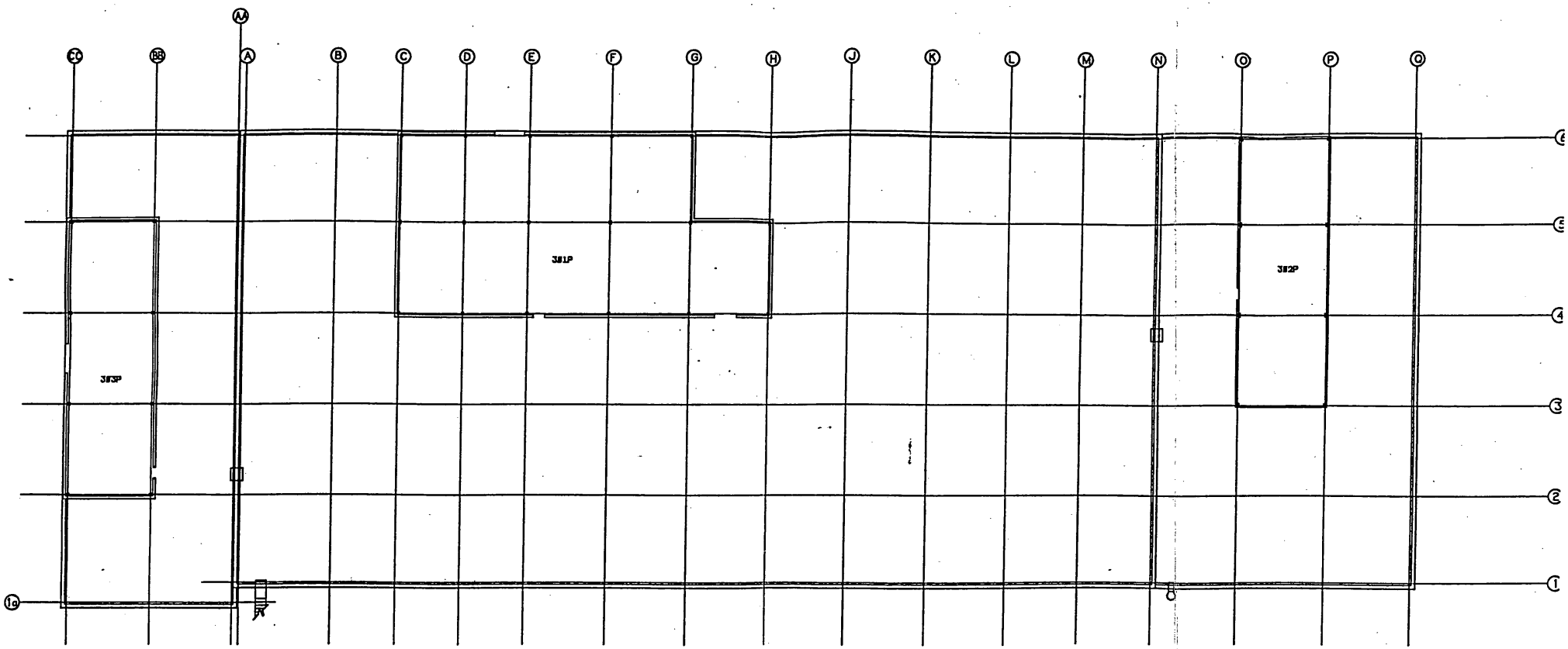
( ) TITLE CLASSIFICATION

Building Ownership with PRS's

DRAWING CLASSIFICATION	SIZE	DRAWING NUMBER	JOB NUMBER
UNCLASSIFIED	D	FSD*	*

DWG TYPE	PROJ	CAGEC	SCALE	SHEET 1 OF
*		*	*	*

STATUS MD-REL ***/***/** ORIGIN STATION 5.0



UNCLASSIFIED

DERIVATIVE CLASSIFIER

(Name)

(Title) (Date) 2/20/96

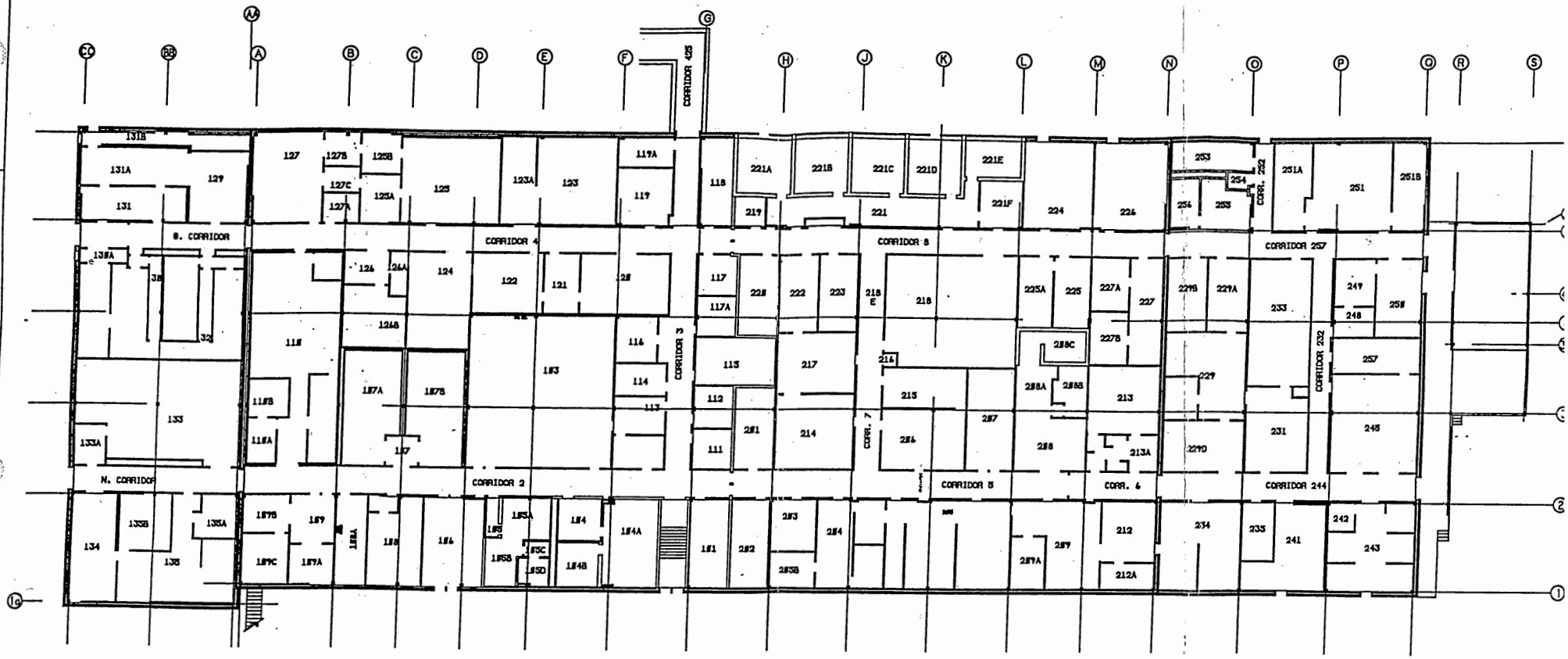
NOT FOR PUBLIC DISSEMINATION

MAY CONTAIN UNCLASSIFIED CONTROLLED NUCLEAR INFORMATION SUBJECT TO SECTION 148 OF THE ATOMIC ENERGY ACT OF 1954, AS AMENDED (42 USC 2168). APPROVAL BY THE DEPARTMENT OF ENERGY PRIOR TO RELEASE IS REQUIRED.

DS BLDG
PENTHOUSE
BLDG CODE:3522

DRAWING NUMBER	FSD911304
JOB NUM	123
CLASSIFICATION	UNCLASSIFIED
SIZE	D
CAGE 14865	SCALE AS NOTI
ISSUE 8	SHEET 2
STATUS	MD-REL-12/12/91

ISS	DATE	REVISION	BY	CHKR	ENG	LPMEC
0	12/12/91	ASBUILT ISSUE	DCW			



DERIVATIVE CLASSIFIER

(Title) (Date) 2/20/96

UNCLASSIFIED

UNCLASSIFIED

NOT FOR PUBLIC DISSEMINATION

MAY CONTAIN UNCLASSIFIED CONTROLLED NUCLEAR INFORMATION SUBJECT TO SECTION 148 OF THE ATOMIC ENERGY ACT OF 1954, AS AMENDED (42 USC 2168). APPROVAL BY THE DEPARTMENT OF ENERGY PRIOR TO RELEASE IS REQUIRED.

APPROVALS: DATE:
SAFETY COMMITTEE REQUIRED:
NONE ___TRUEBOC ___TEBOC ___EMBOC
REP. ___
MGR. ___
TRUEBOC ___
TEBOC ___
EMBOC ___

DESIGN ENG | PROJ MGR
SPONS | ENG SUPV
LP & EC | PEER REV
ENG MGR
APVD | DATE

DS BLDG
FIRST FLOOR
BLDG CODE:3522

SHEET	1	2	3	4	5	6
ISSUE	0	0				

PART CLASSIFICATION

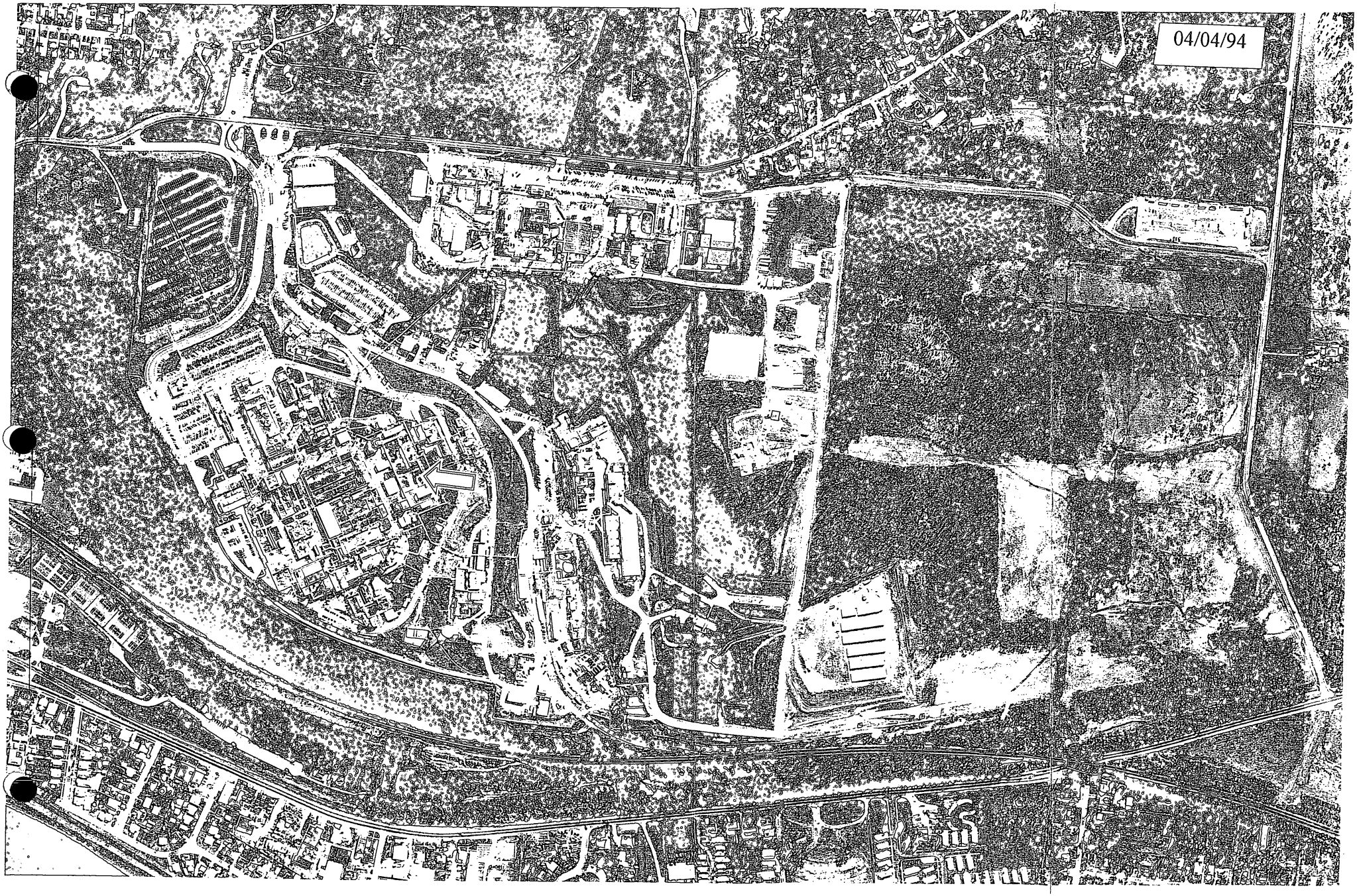
TITLE (U) TITLE CLASSIFICATION
DS BLDG
FLOOR PLANS

UNCLASSIFIED

SIZE 6 | DRAWING NUMBER FSD911304 | JOB NUMBER 12335

DWG TYPE SFP | PRGM DS BLDG | CAGE 14065 | SCALE AS NOTED | SHEET 1 OF 2

STATUS MD-REL-12/12/91 | ORIGIN MD-BR3-V3.0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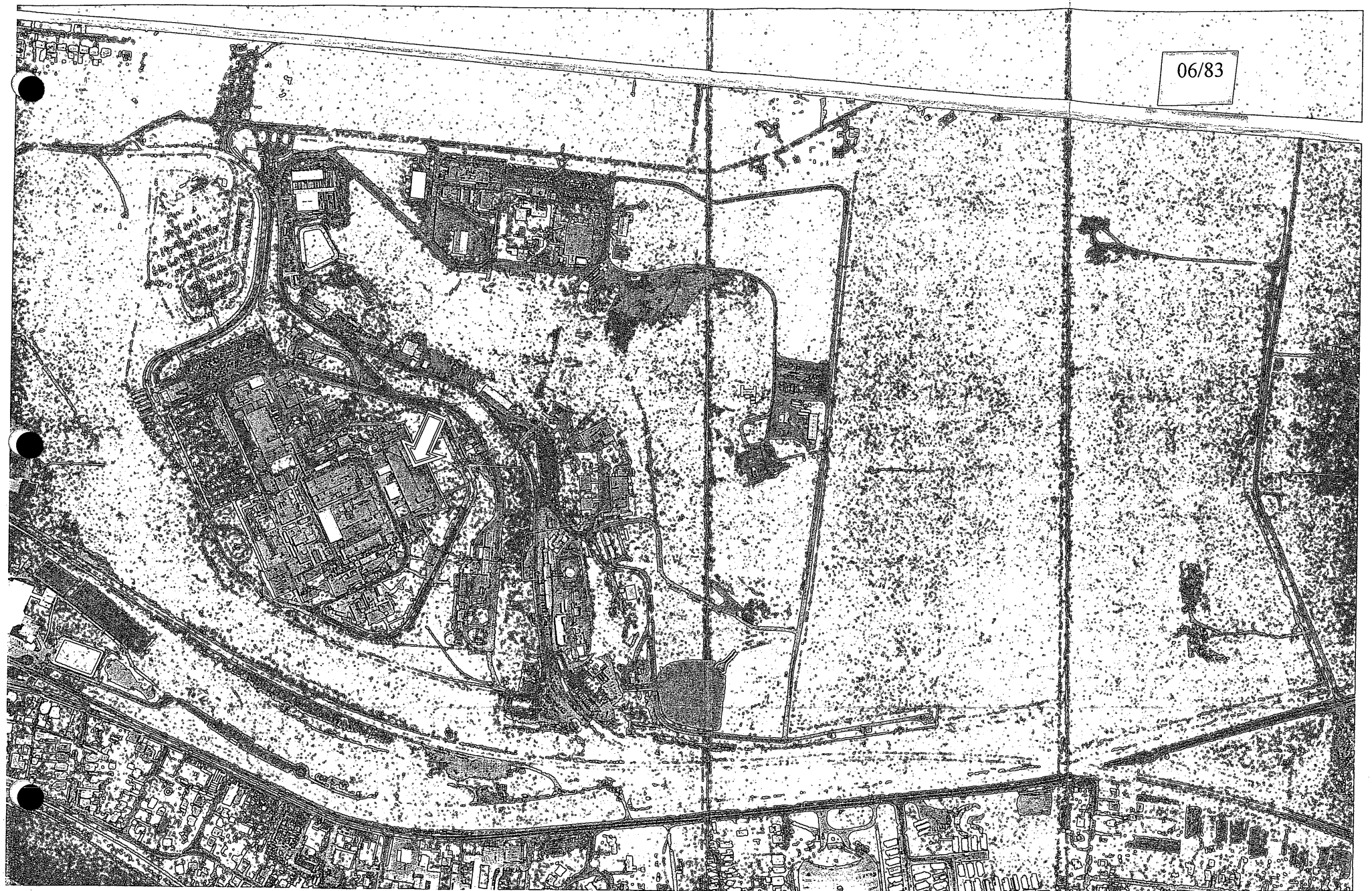
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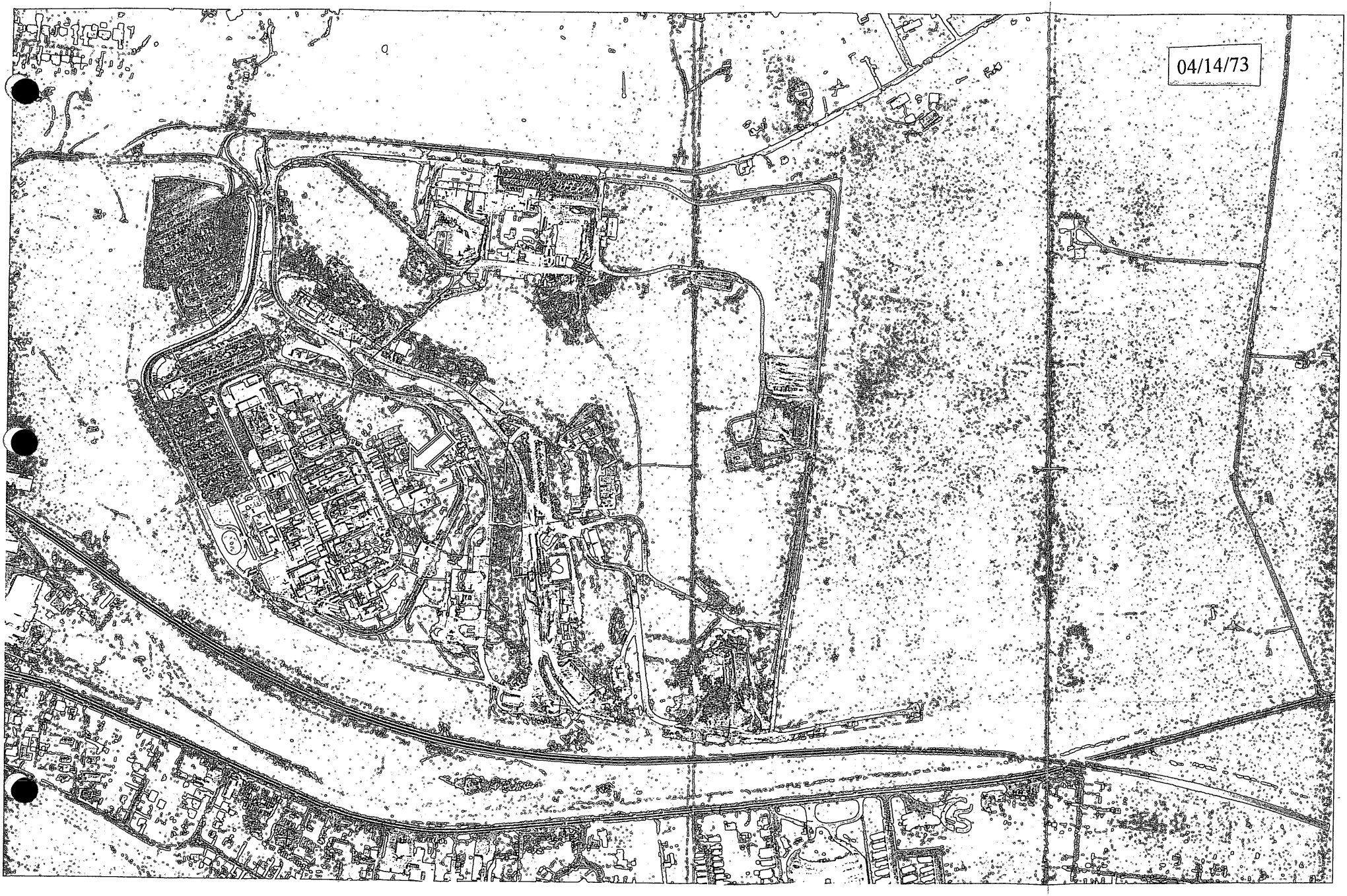
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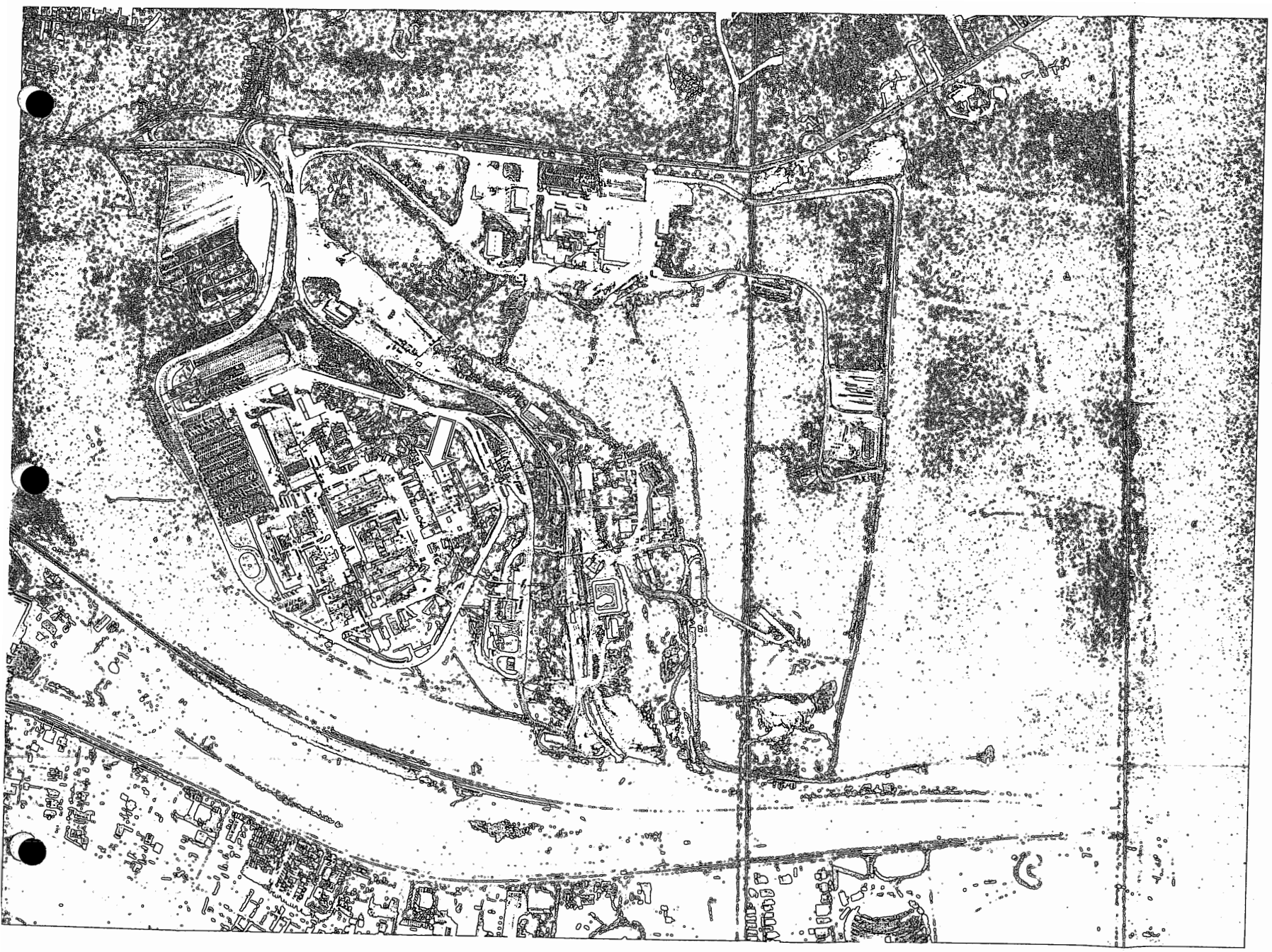

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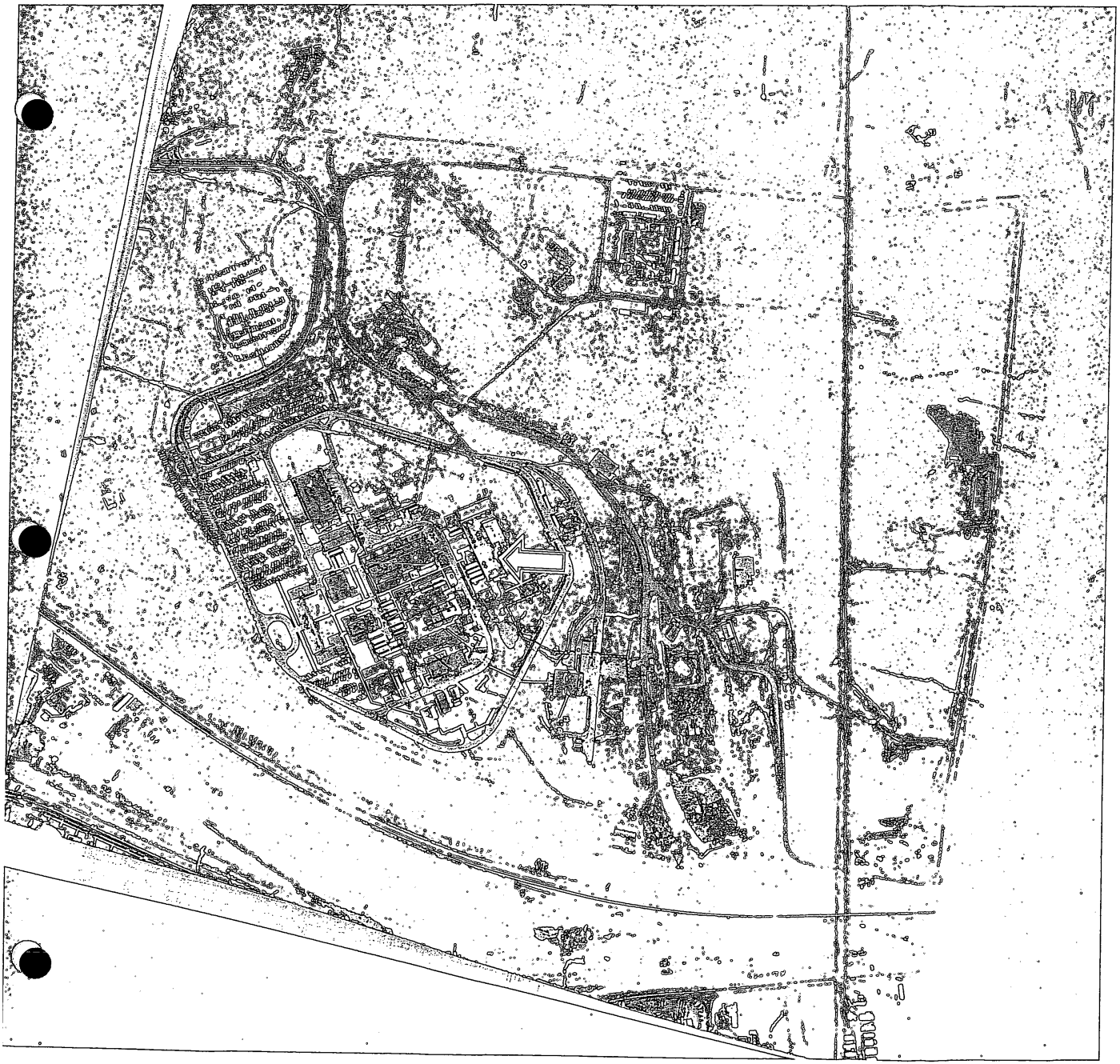

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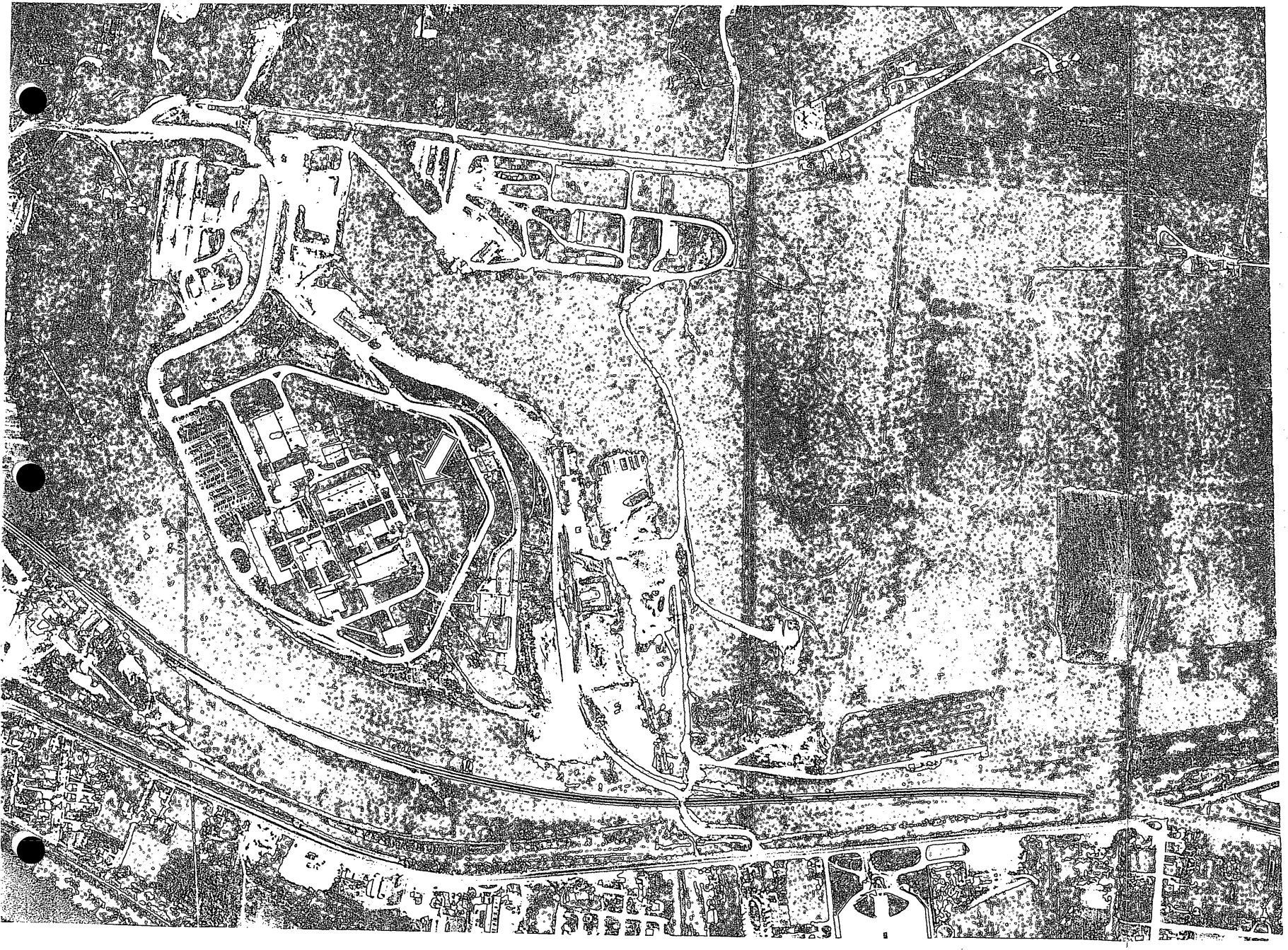
11/19/59



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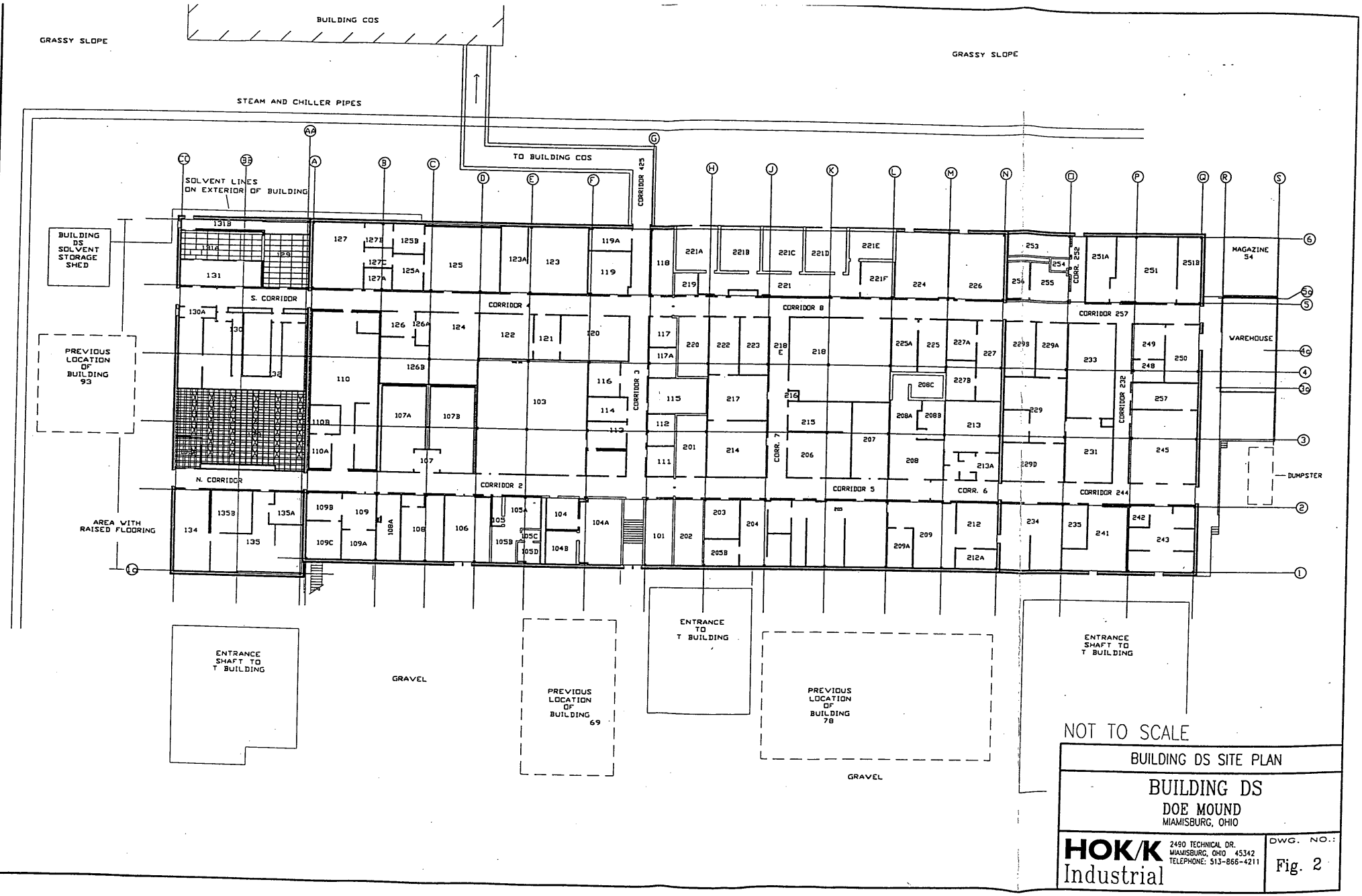


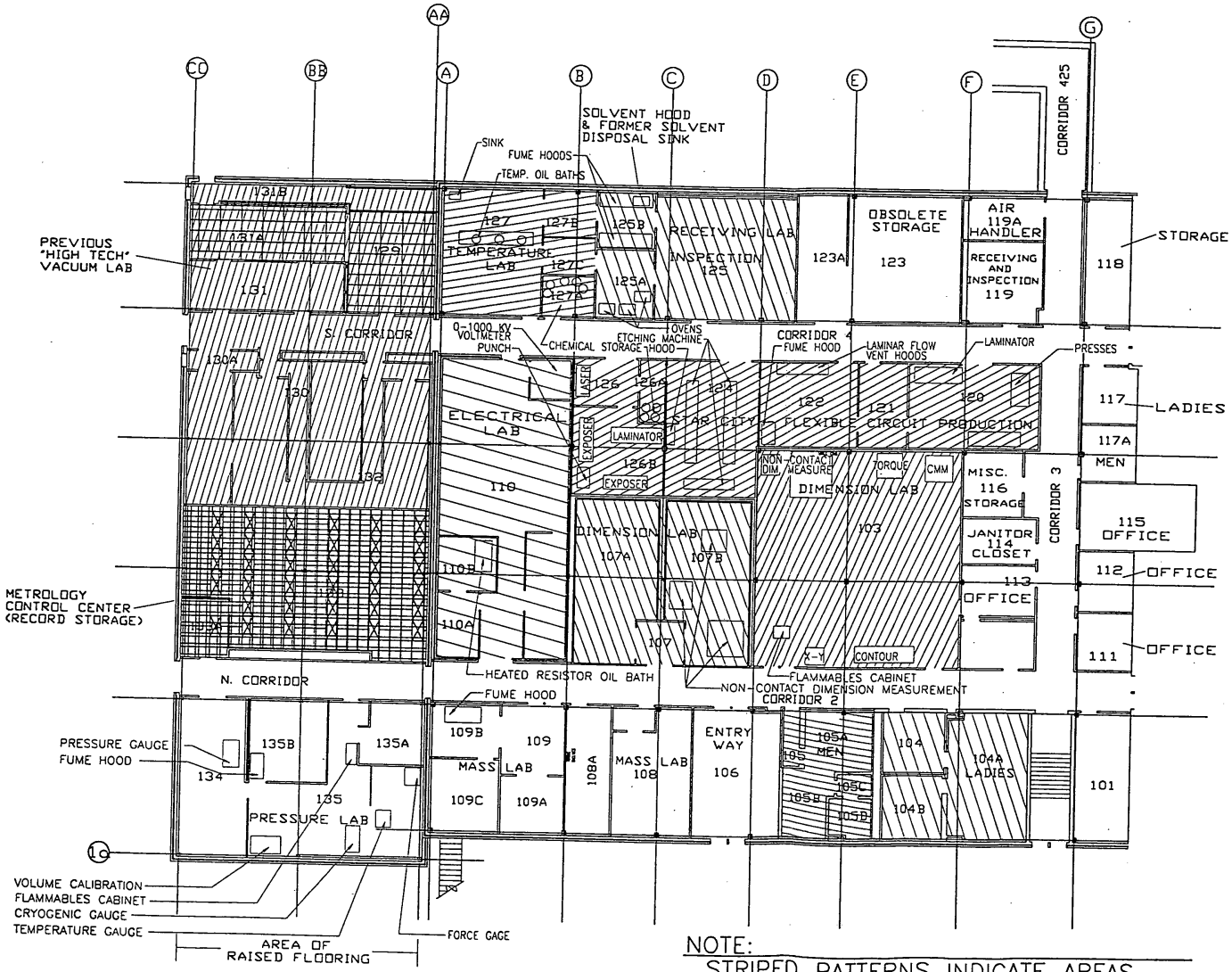
NOT TO SCALE

BUILDING DS SITE PLAN

BUILDING DS
DOE MOUND
MIAMISBURG, OHIO

HOK/K Industrial
2490 TECHNICAL DR.
MIAMISBURG, OHIO 45342
TELEPHONE: 513-866-4211

DWG. NO.: Fig. 2



NOTE:
STRIPED PATTERNS INDICATE AREAS OR ROOMS WITH RELATED OPERATIONS

METROLOGY-
EAST END
OF BUILDING

NOT TO SCALE

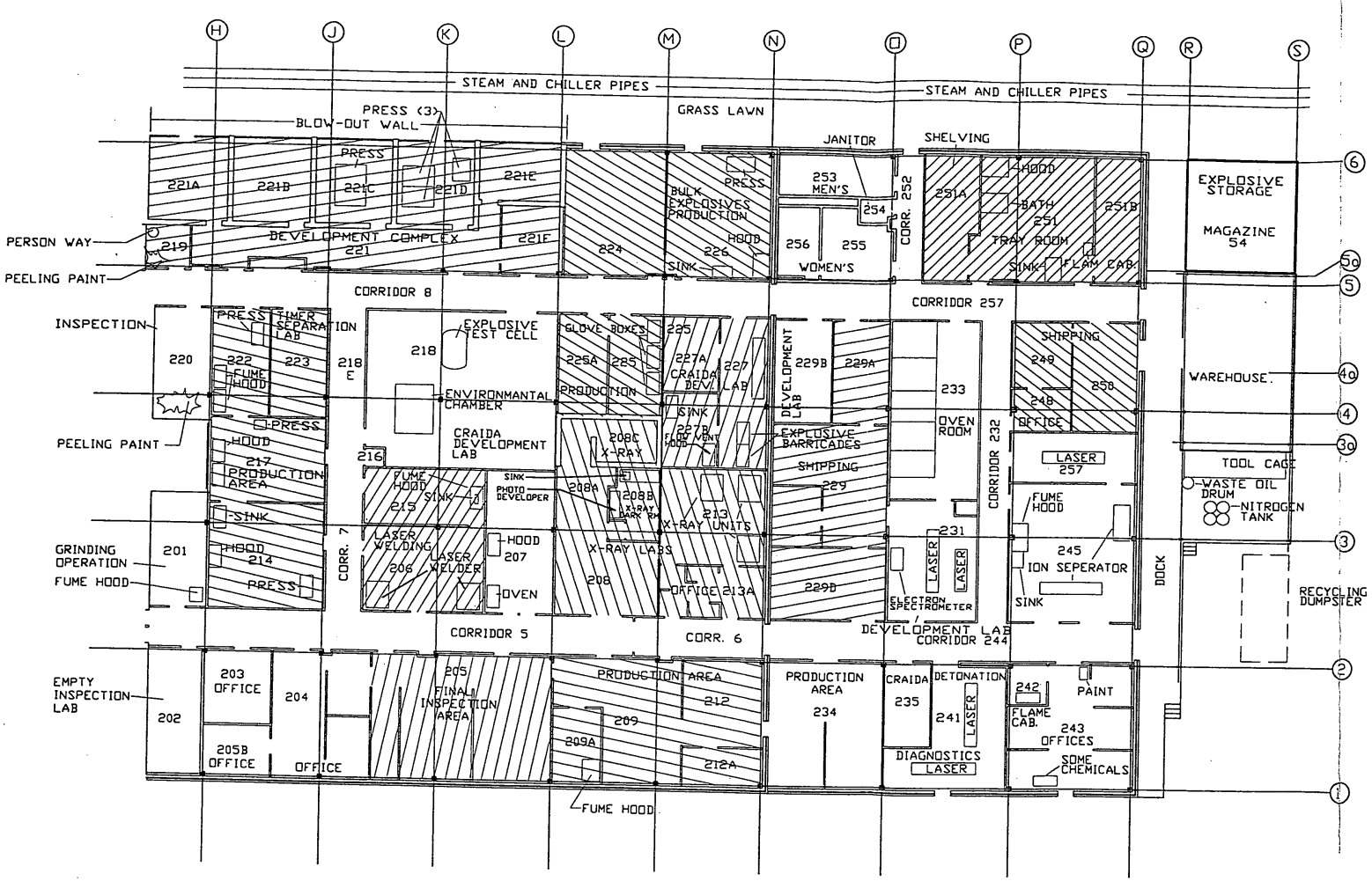
METROLOGY – EAST END OF BUILDING

BUILDING DS
DOE MOUND
MIAMISBURG, OHIO

HOK/K Industrial
2490 TECHNICAL DR.
MIAMISBURG, OHIO 45342
TELEPHONE: 513-866-4211

DWG. NO.: Fig. 3

F:\DMV\DS\DSSHP2.DWG



NOTE:
STRIPED PATTERNS INDICATE AREAS OR ROOMS WITH RELATED OPERATIONS

NOT TO SCALE

EXPLOSIVES – WEST END OF BUILDING

BUILDING DS
DOE MOUND
MIAMISBURG, OHIO

HOK/K Industrial
2490 TECHNICAL DR.
MIAMISBURG, OHIO 45342
TELEPHONE: 513-866-4211

DWG. NO.: Fig. 4