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REPORT
**ASBESTOS-CONTAINING BUILDING MATERIAL
SURVEY AND ASSESSMENT**

FT. MYERS, FLORIDA GENERAL MAIL FACILITY
(Finance/Sub. No. 113077-G11)
14080 Jetport Loop
Ft. Myers, Florida 33913-9998

Prepared For

UNITED STATES POSTAL SERVICE
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November 1995

USER AGENCY: United States Postal Service
FACILITY NAME: Ft. Myers, Florida General Mail Facility
FINANCE/SUB. NO.: 113077-G11
FACILITY ADDRESS: 14080 Jetport Loop
CITY, STATE, ZIP + 4: Ft. Myers, Florida 33913-9998
DATE OF SURVEY: September 21-22, 1995
CONSULTING FIRM NAME: Dames & Moore, Inc.
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I hereby certify that the survey and inspection referenced by this report, and the report itself, were conducted in accordance with intent of the AHERA regulations, to the best of my ability and knowledge.

Brian C. Queen Monti L. King
REPORT PREPARER/INSPECTOR SIGNATURE

PRINTED NAME: Brian C. Queen/Monti L. King
TITLE: Asbestos Inspectors
CERTIFICATION NUMBER: 2278/1654

I have reviewed this report and hereby certify that the information contained within satisfies the intent of the AHERA regulations, to the best of my ability and knowledge.

Francisco Estevez
PROJECT MANAGER SIGNATURE

PRINTED NAME: Francisco Estevez
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LICENSE NUMBER: IA0000031

TABLE OF CONTENTS

	<u>Page</u>
EXECUTIVE SUMMARY	ES-1
1.0 INTRODUCTION	1-1
1.1 PURPOSE AND SCOPE	1-1
1.2 FACILITY DESCRIPTION	1-2
2.0 METHODOLOGY	2-1
2.1 INFORMATION REVIEW AND INITIAL WALK-THROUGH INSPECTION	2-1
2.2 GROUPING OF SUSPECT ACBM	2-2
2.3 PHYSICAL ASSESSMENT OF ACBM	2-2
2.4 HAZARD ASSESSMENT OF ACBM	2-3
2.5 ACBM SAMPLING STRATEGY	2-3
2.5.1 Collection Survey	2-3
2.5.2 Bulk Sample Collection Procedures	2-5
2.5.3 Bulk Sample Identification	2-5
2.5.4 Quality Control Sampling	2-6
2.5.5 Laboratory Analytical Methods	2-6
2.6 AIR SAMPLING	2-6
2.6.1 Air Sampling Strategy	2-6
2.6.2 Air Sampling Procedures	2-7
2.6.3 Air Sample Identification	2-7
2.6.4 Laboratory Analytical Methods	2-7
3.0 FINDINGS AND RECOMMENDATIONS	3-1
3.1 FRIABLE ASBESTOS-CONTAINING BUILDING MATERIALS	3-1
3.1.1 Thermal System Insulation	3-1
3.1.2 Surfacing Materials	3-2
3.1.3 Miscellaneous Materials	3-2
3.1.4 Assumed Materials	3-2
3.2 NON-FRIABLE ASBESTOS-CONTAINING BUILDING MATERIALS	3-2
3.2.1 Thermal System Insulation	3-2
3.2.2 Surfacing Materials	3-2
3.2.3 Miscellaneous Materials	3-2
3.2.4 Assumed Materials	3-3
3.3 NON-ASBESTOS-CONTAINING MATERIALS	3-3
3.4 RECOMMENDATIONS	3-5
3.4.1 Friable Thermal System Insulation	3-5
3.4.2 Friable Surfacing Materials	3-5
3.4.3 Friable Miscellaneous Materials	3-5
3.4.4 Friable Assumed Materials	3-6
3.4.5 Non-Friable Thermal System Insulation	3-6
3.4.6 Non-Friable Surfacing Materials	3-6
3.4.7 Non-Friable Miscellaneous Materials	3-6

TABLE OF CONTENTS

(Continued)

	<u>Page</u>
3.4.8 Non-Friable Assumed Materials	3-6
3.5 AIR MONITORING FINDINGS	3-6

LIST OF APPENDICES

Appendix

- A-1 EXPLANATION OF HAZARD RANKS/ASSESSMENTS; DECISION TREE FLOW CHART
- A-2 STATEMENT OF LABORATORY PROTOCOLS
- B BULK SAMPLE LOG (TABLE B-1)
- C LABORATORY ANALYSIS DATA SHEETS AND CHAIN-OF-CUSTODY FORMS
- D SAMPLE LOCATION DRAWING (FIGURE 1)
- E EXTENT OF MATERIAL DRAWING (FIGURE 2)
- F BACKGROUND INFORMATION ON ASBESTOS
- G PERSONNEL CERTIFICATIONS
- H GLOSSARY/DEFINITION OF TERMS
- I AIR MONITORING RESULTS
- J LABORATORY CERTIFICATIONS AND QA/QC PROGRAMS

ASBESTOS-CONTAINING BUILDING MATERIAL SURVEY AND ASSESSMENT

FT. MYERS, FLORIDA GENERAL MAIL FACILITY

(Finance/Sub. No. 113077-G11)

EXECUTIVE SUMMARY

Dames & Moore, Inc. (Dames & Moore) has completed an asbestos-containing building material (ACBM) survey of the Ft. Myers, Florida General Mail Facility (Finance/Sub. No. 113077-G11). The survey was performed to generally identify and assess the condition of ACBM, and to provide recommended response actions based on the conditions of these materials. This report describes the survey tasks and presents our findings and recommendations.

During the asbestos survey a total of 56 bulk material samples were collected and analyzed for asbestos content. No friable ACBM was detected or assumed to be present at the facility. Non-friable asbestos was assumed to be present in the panels of the fume hood [Homogeneous Area (HA) 16] located in room E1-104.

Roofing materials (HA 19) were not sampled per the Scope of Work and should be assumed asbestos-containing until proven otherwise.

No inaccessible areas within the facility were identified during the survey.

The following recommendations are made based on the condition of the non-friable assumed ACBM and on the results of a hazard assessment performed by Dames & Moore.

- The roofing materials and fume hood panels should not be disturbed without prior verification that the materials are non-asbestos containing. The materials should be sampled by a qualified asbestos inspector and, if found to be asbestos containing, they should be removed by a Florida-licensed asbestos abatement contractor or handled in accordance with procedures outlined in a site-specific Operations and Maintenance Plan.

During the collection of bulk samples, 41 air samples were taken to measure airborne fiber levels at the time of the sampling. A field blank was also collected. The samples were analyzed using phase contrast microscopy (PCM). The air sample having the highest fiber concentration was subsequently analyzed by transmission electron microscopy (TEM). The PCM analyses indicated that the airborne fiber concentrations were less than or equal to 0.025 fibers per cubic centimeter of air (f/cc) at the time of the survey. The TEM analysis indicated that the structure concentration in the sample with the highest PCM result was less than 0.0090 structures per cubic centimeter (detection limit). No fibers were reported in the field blank. Based on these data, it can be concluded that the airborne asbestos fiber level in the facility during the survey did not exceed the permissible exposure limit of 0.1 fibers per cubic centimeter established by the Occupational Safety and Health Administration.

1.0 INTRODUCTION

The United States Postal Service (USPS) owns or leases nearly 35,000 buildings, any of which may contain a variety of asbestos-containing building material (ACBM) sources. ACBM in USPS buildings must be identified and controlled in order to ensure a safe and healthy work environment, and to meet Federal, state, and local regulations, as well as Postal Service policy.

The USPS contracted with Dames and Moore, Inc. (Dames & Moore) to perform ACBM surveys under Contract No. 475450-94-B-0322. General project scope requirements were outlined in Work Order No. 134.00, issued by Mr. Michael A. Fahlmark, Contracting Officer of the USPS Suncoast Florida District.

This report addresses the ACBM survey performed by Dames & Moore at the Ft. Myers, Florida General Mail Facility (Finance/Sub. No. 113077-G11).

1.1 PURPOSE AND SCOPE

The purpose of this project was to identify, quantify, and assess the ACBM in the facility and to provide recommendations for abatement (removal) or in-place management of these materials.

The scope of the ACBM survey was based upon the United States Environmental Protection Agency (EPA) Asbestos Hazard Emergency Response Act (AHERA) Regulations and the USPS's "Generic Statement of Work for Asbestos Surveys and Assessments," dated March 1995. Addition Scope of Work modifications were provided by Mr. Jim Braddy, USPS Project Manager.

1.2 FACILITY DESCRIPTION

The following general information regarding the facility was obtained from the Postmaster:

Facility Name: Ft. Myers, Florida General Mail Facility

Finance/Sub. No.: 113077-G11

Address: 14080 Jetport Loop
Ft. Myers, Florida 33913-9998

Site Contact's Name, Title, and Phone Number:

Robert Kirk
Supervisor, Maintenance Operations
(941) 768-8096

Use of Facility: Process and Distribution Center

Total No. Employees: 520

Number and Times of Employee Shifts: Three shifts/Open 24 hours:
11:30 p.m. to 8:00 a.m.; 7:00 a.m. to 3:30 p.m.;
6:00 p.m. to 2:30 a.m. (main shift)

Building Construction Date: 1991

Description and Dates of Building Modifications:

Currently remodeling the lobby area;
External smoke areas (screen with tin roof);
Roof (overhang) added to maintenance dock in
August/September 1995

Size of Facility: 208,051 sq ft

Description of Mechanical Systems:

Mail handling equipment

Description of HVAC Systems:

Suspect gasket, caulking and insulation sampled;
Rubber and fiberglass TSI - not sampled

Description of Plumbing:

Sampled two types of condensate insulation shield;
Fiberglass insulation on water heaters

Description of Electrical Systems:

Plastic jacket in conduit

Construction Materials of Building:

Concrete slab; concrete block; bar joist; metal ceiling

Roof Construction:

Roofing material consists of decking with rolled shingles

Roof Warranty:

Yes (10 years)

Is this a USPS-Maintained Facility?

No

2.0 METHODOLOGY

During the asbestos survey of the Ft. Myers, Florida General Mail Facility (Finance/Sub. No. 113077-G11), procedures were followed as outlined in the AHERA Regulations, the USPS's "Generic Statement of Work For Asbestos Surveys and Assessment" (version dated March 1995), and as directed by Mr. Jim Braddy, USPS Project Manager. This report section provides a brief description of the methodologies provided by the above-mentioned regulations and guidelines.

2.1 INFORMATION REVIEW AND INITIAL WALK-THROUGH INSPECTION

Dames & Moore personnel attended a project kick-off meeting at the Ft. Myers Page Field Branch on September 13, 1995. The purpose of the meeting was to review the proposed ACBM survey, schedule performance of the survey, and review the Scope of Work. The survey was conducted on September 21 and 22, 1995.

The Supervisor of Maintenance Operations was interviewed regarding knowledge of known or suspected ACBM, and to obtain general information about the construction, maintenance, and operation of the facility. Dames & Moore also inquired about written construction specifications, building drawings, and previous asbestos surveys of the facility. Written construction specifications and building drawings were available for review. No references to ACBM usage were included in these material. A copy of a report for sampling of the asphalt plank flooring for asbestos was provided for review. The material tested negative for asbestos.

An initial walk-through inspection of the building was performed. Special precautions and security/access requirements were coordinated with the on-site USPS personnel. Accessible areas of the facility were observed and the locations of suspected ACBM were noted on a floor plan of the building. No inaccessible areas were identified during the survey.

2.2 GROUPING OF SUSPECT ACBM

During the initial walk-through inspection, the suspect ACBM were grouped according to the type of material. These materials were then grouped by homogeneous area and functional space (see below). At the conclusion of the walk-through, a sampling plan was devised for the collection of bulk material samples. This sampling plan was based on the AHERA Regulation and the USPS Guidance Document.

The AHERA Regulations require that suspected ACBM be grouped according to homogeneous area and by functional spaces. The two terms are defined by the AHERA Regulations as follows:

- Homogeneous Area means an area of surfacing material, thermal system insulation material, or miscellaneous material that is uniform in color and in texture. For the purposes of this project, a homogeneous area consists of a group of offices or rooms with similar ceiling tile, insulation on various piping and mechanical systems, areas of similar floor tile, etc.
- Functional Space means a room or group of rooms or homogeneous areas that have been designated by a person accredited to prepare management plans, design abatement projects, or perform response actions. For the purposes of this project, functional spaces were identified as single offices or groups of similar offices, the main work floor, mechanical room, break room, locker rooms, loading dock areas, mezzanines, observation galleries, and other such similar locations.

2.3 PHYSICAL ASSESSMENT OF ACBM

During the collection of bulk samples the inspector completed physical and hazard assessments for each type of suspect ACBM. The assessment included: the type and amount of suspect ACBM; whether or not the material was friable; the current condition of the material; the accessibility of material to building occupants; and, the potential of the material to become damaged in the future.

The physical condition of the suspect ACBM was assessed in accordance with the methods outlined by AHERA. In the AHERA method, friable suspect ACBM is categorized according to the type of material and the amount of damage that the material has sustained or is likely to sustain in the future. The AHERA method contains seven possible assessment categories for friable ACBM (friable ACBM is defined as "able to be reduced to powder by hand pressure"). The assessment categories are defined in Appendix A-1.

2.4 HAZARD ASSESSMENT OF ACBM

Dames & Moore utilized the Hazard Ranking Decision Tree Method to complete a hazard assessment for the ACBM identified at the facility. The Decision Tree Flow Chart is presented in Appendix A-1. Using the Hazard Rank Decision Tree Method, an ACBM is placed into one of seven hazard rank categories. An ACBM that is placed into Hazard Rank Category 1 represents the highest potential health hazard that can be assigned by this method and an ACBM that is placed into Hazard Rank Category 7 represents the least potential health hazard that can be assigned using the method.

The seven hazard rank categories used for assessing the asbestos-related hazards are similar to, but not the same as, the seven AHERA physical assessment classifications that were used during the bulk survey to describe the type and condition of the ACBM identified in the building. A description of the hazard ranking methods is presented in Appendix A-1.

2.5 ACBM SAMPLING STRATEGY

2.5.1 Collection Survey

The sample collection strategy followed during the survey was based on the strategy outlined by the AHERA Regulations and the USPS's Generic Statement of Work. The number of samples collected from each separate homogeneous area is based on the area size and type of material as follows:

Thermal System Insulation

A minimum of three samples are collected from each type of TSI that is suspected to contain asbestos, such as pipe and pipe-fitting insulation, boiler insulation, tank insulation, etc. One sample is collected from each patched area of TSI. No samples are collected from TSI that is obviously fiberglass, foamglass, or rubber.

Homogeneous Area of Friable Surfacing Material

The number of samples collected is based on the area size, as follows:

- If the area is less than 1,000 square feet, a minimum of three samples are collected.
- If the area is 1,000 square feet to 5,000 square feet, a minimum of five samples are collected.
- If the area is greater than 5,000 square feet, a minimum of seven samples are collected.

Homogeneous Area of Non-Friable Surfacing Material

A minimum of three samples are collected from non-friable surfacing material, such as wall plaster and textured ceilings.

Miscellaneous Suspected Areas

A minimum of two samples are collected from miscellaneous suspected ACM, such as floor tile, floor tile mastic, gypsum wallboard, drywall/joint compound, etc.

In addition to the above sampling strategy, materials are assumed to be ACM and not sampled if original building specifications or "as-built" drawings indicate the materials contain ACM.

2.5.4 Quality Control Sampling

Project requirements stipulate collection of one quality control (QC) duplicate sample for every 20 bulk asbestos samples. Each QC sample is collected adjacent to the primary sample. Three QC samples were collected during the survey.

2.5.5 Laboratory Analytical Methods

At the conclusion of the asbestos survey, chain-of-custody forms were completed, and the forms and samples were shipped to the subcontracted laboratory for analysis.

The bulk asbestos samples collected during this survey were submitted to AMA Analytical Services, Inc. (AMA) of Lanham, Maryland. AMA is accredited by the American Industrial Hygiene Association and participates in the National Voluntary Laboratory Accreditation Program (NVLAP) for analysis of bulk asbestos and air samples.

The asbestos samples were analyzed using polarized light microscopy with dispersion staining (PLM/DS) in accordance with the EPA "Interim Method for the Determination of Asbestos in Bulk Building Materials," EPA/600/R-93/116, July 1993. One sample originally analyzed by PLM/DS detected trace quantities of asbestos. At the request of Dames & Moore, a representative sample was prepared using gravimetric reduction techniques to remove the potential asbestos fibers from the matrix and the reduced sample was reanalyzed by transmission electron microscopy (TEM). A statement of the laboratory protocols used by AMA is presented in Appendix A-2.

2.6 AIR SAMPLING

2.6.1 Air Sampling Strategy

A total of 41 air samples were collected during the survey. One air sample was collected per every 5,000 square feet of interior building space (minimum of two samples per facility). These indoor

air samples were collected throughout the facility and were collected at the same time as the bulk asbestos samples. The sampling locations were noted in the field on drawings of the facility. An unopened field blank was also submitted to the laboratory with the samples.

2.6.2 Air Sampling Procedures

The air sampling procedures followed those outlined by National Institute for Occupational Safety and Health (NIOSH) Method 7400 for collecting air samples. High volume sampling pumps were used to collect air samples on 25 millimeter (mm) mixed cellulose ester (MCE) filter cassettes with preassembled 50 mm extension cowl and a 0.8 micron pore size. Prior to sample collection, each air sampling pump was calibrated with a rotameter that had been calibrated against a primary standard in the laboratory prior to its use in the field. The flow rate set for the pumps was 15 liters of air per minute (L/m). The air samples were collected for the duration of the bulk sample collection portion of the asbestos survey. At the end of the sampling event, the flow rate of each pump was rechecked using the rotameter. The average of the two flow rates was reported as the flow rate for the entire sampling period.

2.6.3 Air Sample Identification

The air samples were each assigned a unique ID similar to the ID used for the bulk asbestos samples. The ID consisted of an alphanumeric designation beginning with the prefix "FMG-A-" and the sample number.

2.6.4 Laboratory Analytical Methods

At the conclusion of the sampling effort, chain-of-custody forms were completed and the forms and samples were shipped to AMA. The air samples were analyzed using phase contrast microscopy

(PCM) in compliance with NIOSH Method 7400. In accordance with the Scope of Work, the sample having the highest fiber concentration was also analyzed by TEM per NIOSH Method 7402 protocol. A statement of the laboratory protocols for both the PCM and TEM methods is included in Appendix A-2.

3.0 FINDINGS AND RECOMMENDATIONS

The findings of the ACBM survey and air monitoring are presented in this section. Sections 3.1 through 3.3 describe the findings of the ACBM survey and Section 3.4 describes the recommendations based upon the findings of the survey. Section 3.5 describes the findings of the air monitoring.

Table B-1 (in Appendix B) presents a bulk sample log, listing each homogeneous material sampled, the sample ID, percent and type of asbestos, and estimated quantities. The AHERA physical assessment category and hazard rankings assigned to the ACBM detected at the Ft. Myers, Florida General Mail Facility (Finance/Sub. No. 113077-G11), the appropriate response action, and the National Emission Standards for Hazardous Air Pollutants (NESHAP) classification are also included on this table. The response actions required by AHERA are based on the Hazard Ranking category to which an ACBM is assigned. Descriptions of the AHERA assessment categories, hazard rankings, and AHERA response actions for each hazard rank category are presented in Appendix A-1.

The bulk sample laboratory analytical data sheets and chain-of-custody forms are included in Appendix C. Figures showing the locations where bulk asbestos and air samples were collected and the extent of ACBM are presented in Appendices D and E, respectively. Background information on asbestos is provided in Appendix F. Copies of the personnel certifications of the inspector and project manager are included in Appendix G. Appendix H presents a glossary of terms related to the survey. Appendix I presents a summary of the air monitoring results, Table I-1, which is a log of the air samples and the corresponding air monitoring laboratory data sheets and chain-of-custody forms. Copies of the laboratory's certifications and a description of their Quality Assurance (QA)/QC program are included in Appendix J.

3.1 FRIABLE ASBESTOS-CONTAINING BUILDING MATERIALS

3.1.1 Thermal System Insulation

No friable asbestos-containing TSI was identified during the survey.

3.1.2 Surfacing Materials

No friable asbestos-containing surfacing materials were identified during the survey.

3.1.3 Miscellaneous Materials

No friable asbestos-containing miscellaneous materials were identified during the survey.

3.1.4 Assumed Materials

During the survey, no materials were identified that were assumed to contain asbestos and be friable.

3.2 NON-FRIABLE ASBESTOS-CONTAINING BUILDING MATERIALS

3.2.1 Thermal System Insulation

No non-friable asbestos-containing TSI was identified during the survey.

3.2.2 Surfacing Materials

No non-friable asbestos-containing surfacing materials were identified during the survey.

3.2.3 Miscellaneous Materials

No non-friable asbestos-containing miscellaneous materials were identified during the survey.

3.2.4 Assumed Materials

The panels (gray) located in the fume hood in room E1-104 (Photo 1) were not sampled and are assumed to contain asbestos [Homogeneous Area (HA) 16]. These panels were cementitious and fibrous in nature. This material was not sampled due to concern regarding the operation and integrity of the fume hood if the material was damaged by sampling.

The roofing materials (HA 19) consisted of decking with rolled shingles. The materials were in good condition and were not sampled per the Scope of Work. The roofing materials may contain asbestos.

3.3 NON-ASBESTOS-CONTAINING MATERIALS

The following materials were sampled and were found to be non-asbestos containing:

- Asphalt plank flooring (HA 01) located throughout the workroom (Photo 2). Four samples of this material were collected.
- Drywall/joint compound (HA 02) located throughout the facility (Photo 3). Four samples of this system were collected.
- Pipe insulation (HA 03) located throughout the facility (Photo 4). Three samples of this material were collected.
- Cove base mastic (HA 04) located throughout the facility (Photo 5). Four samples of this material were collected.
- 2-foot by 2-foot ceiling tile (HA 05) located throughout areas A, F1, and F2 (Photo 6). Four samples of this material were collected.

- 12-inch by 12-inch gray floor tile and associated mastic (HA 06) located throughout areas A, F1, and F2 (Photo 7). Four samples and one QC sample of the floor tile were collected. Four samples of the associated mastic were collected.
- Window and door caulk (HA 07) located throughout the facility (Photo 8). Three samples of this material were collected.
- 2-foot by 4-foot ceiling tile (HA 08) located throughout areas A, B, F1, and F2 (Photo 9). Four samples of this material were collected.
- HVAC gasket (HA 09) located on the air handling units (AHUs) throughout the facility (Photo 10). Three samples and one QC sample of this material were collected.
- Putty (HA 10) located on the air ducts throughout the facility (Photo 11). Three samples of this material were collected.
- HA 11, caulk (gray), located on the AHUs throughout the facility (Photo 12). Three samples of this material were collected.
- HA 13, condensate insulation shield (blue), located on the bottom of metal sinks in the facility (Photo 13). Two samples and one QC sample of this material were collected.
- Wall covering (HA 14) located throughout areas A and B (Photo 14). Two samples of this material were collected.
- HA 15, condensate insulation shield (black), located on the bottom of the metal sinks located in rooms E1-104 and E1-105 (Photo 15). Two samples of this material were collected. Trace amounts of chrysotile were reported in one of the samples analyzed by PLM; no asbestos was reported to be present in the second sample. The first sample was subsequently reanalyzed by using gravimetric reduction and TEM. No

asbestos was reported to be present in the sample. Therefore, the material was considered to be non-asbestos containing.

- HA 17, caulk (white), located on the AHU in room F1-116 (Photo 16). Two samples of this material were collected.
- Caulk (HA 18) located on the exterior joints and seams (Photo 17). Two samples of this material were collected.

3.4 RECOMMENDATIONS

3.4.1 Friable Thermal System Insulation

During the survey, no friable asbestos-containing TSI was identified; therefore, no recommendations for this material are made.

3.4.2 Friable Surfacing Materials

During the survey, no friable asbestos-containing surfacing materials were identified; therefore, no recommendations for these materials are made.

3.4.3 Friable Miscellaneous Materials

During the survey, no friable asbestos-containing miscellaneous materials were identified; therefore, no recommendations for these materials are made.

3.4.4 Friable Assumed Materials

During the survey, no friable materials assumed to contain asbestos were identified; therefore, no recommendations for these materials are made.

3.4.5 Non-Friable Thermal System Insulation

During the survey, no non-friable asbestos-containing TSI was identified; therefore, no recommendations for these materials are made.

3.4.6 Non-Friable Surfacing Materials

During the survey, no non-friable asbestos-containing surfacing materials were identified; therefore, no recommendations for these materials are made.

3.4.7 Non-Friable Miscellaneous Materials

During the survey, no non-friable asbestos-containing miscellaneous materials were identified; therefore, no recommendations for these materials are made.

3.4.8 Non-Friable Assumed Materials

The roofing materials and fume hood panels should not be disturbed without prior verification that the materials are non-asbestos containing. The materials should be sampled by a qualified asbestos inspector, and if found to be asbestos-containing, they should be removed by a Florida-licensed asbestos abatement contractor or handled in accordance with procedures outlined in a site-specific Operations and Maintenance Plan.

3.5 AIR MONITORING FINDINGS

During the collection of bulk samples, 41 air samples were taken to measure airborne fiber levels at the time of the sampling. A field blank sample was also analyzed by the laboratory. The air sample locations and the corresponding laboratory results are presented on Table I-1. Photos 18 through 21 show representative air pump set-ups and locations. The results of the PCM analyses indicate that the airborne fiber concentrations were less than or equal to 0.025 fibers per cubic centimeter of air during the survey. The TEM analysis indicated that the structure concentration in the sample with the highest PCM result was less than 0.0080 structures per cubic centimeter (detection limit). No fibers were reported in the field blank. Based on these data, it can be concluded that the airborne asbestos fiber level in the facility during the survey did not exceed the permissible exposure limit of 0.1 fibers per cubic centimeter established by the Occupational Safety and Health Administration.



PHOTO 1. Homogeneous Area 16: Panel, as found in the fume hood located in room E1-104 (assumed ACBM)



PHOTO 2. Homogeneous Area 1: Asphalt plank flooring, as found in the workshop (non-ACBM)

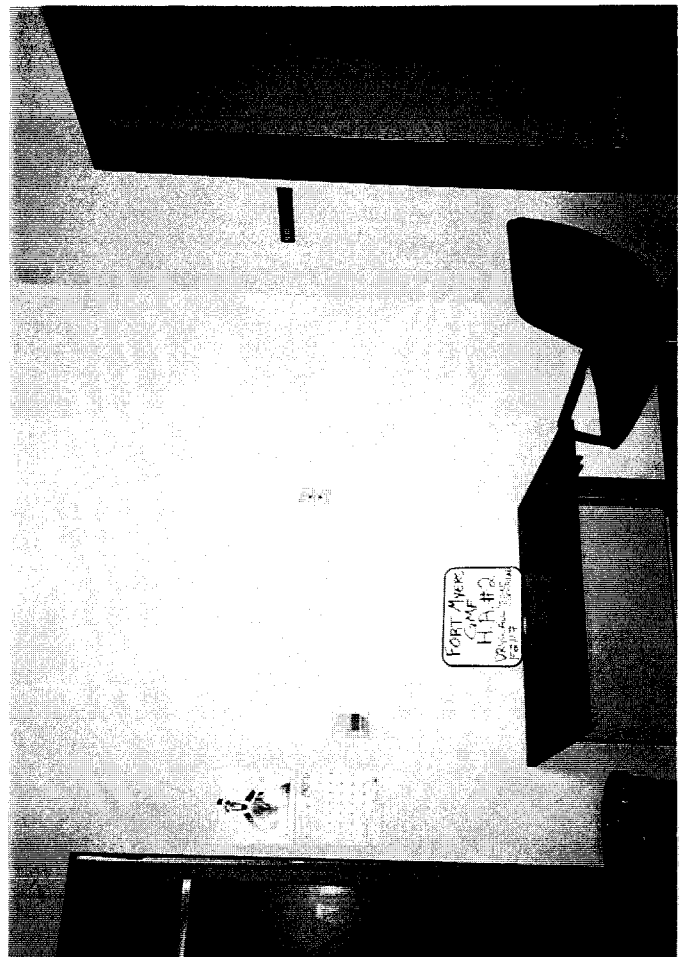


PHOTO 3. Homogeneous Area 2: Drywall/joint compound, as found in room F2-117 (non-ACBM)

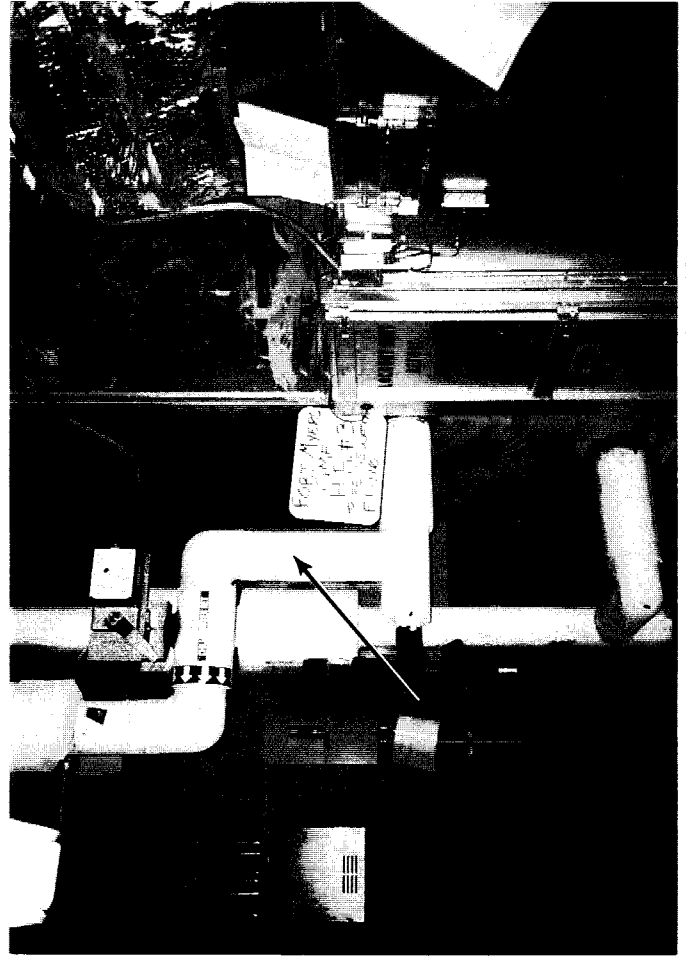


PHOTO 4. Homogeneous Area 3: Pipe insulation, as found in room F1-116 (non-ACBM)



PHOTO 5. Homogeneous Area 4: Cove base mastic, as found in F2-Hall (non-ACBM)



PHOTO 6. Homogeneous Area 5: 2-foot by 2-foot ceiling tile, as found in A-Hall (non-ACBM)

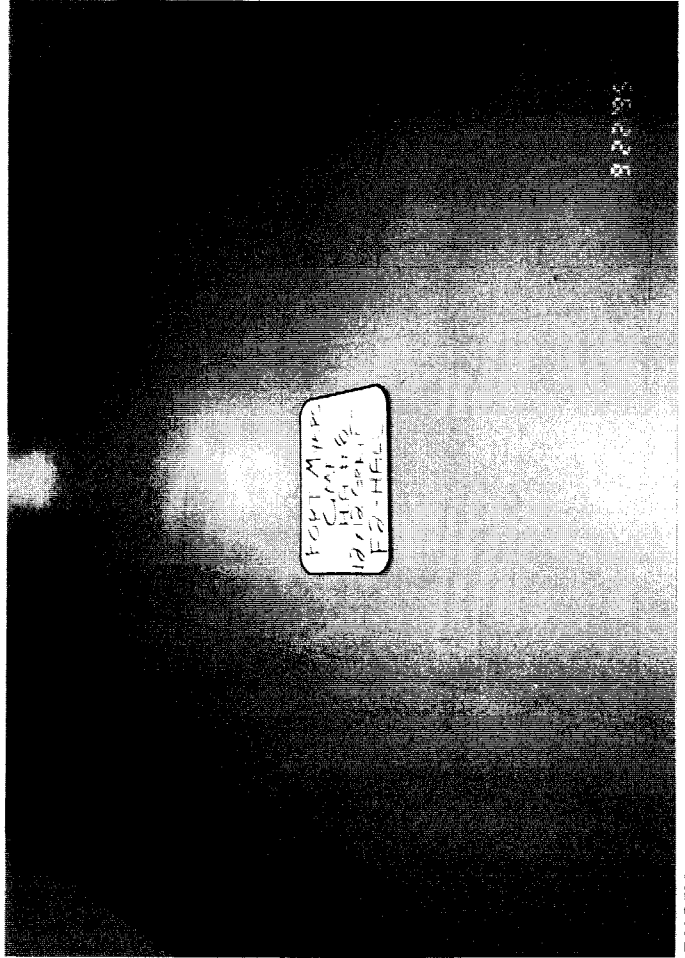


PHOTO 7. Homogeneous Area 6: 12-inch by 12-inch gray floor tile and associated mastic, as found in F2-Hall (non-ACBM)



PHOTO 8. Homogeneous Area 7: Window and door caulk, as found in room A-134 (non-ACBM)



PHOTO 9. Homogeneous Area 8: 2-foot by 4-foot ceiling tile, as found in room F1-112 (non-ACBM)



PHOTO 10. Homogeneous Area 9: HVAC gasket, as found in room F1-116 (non-ACBM)

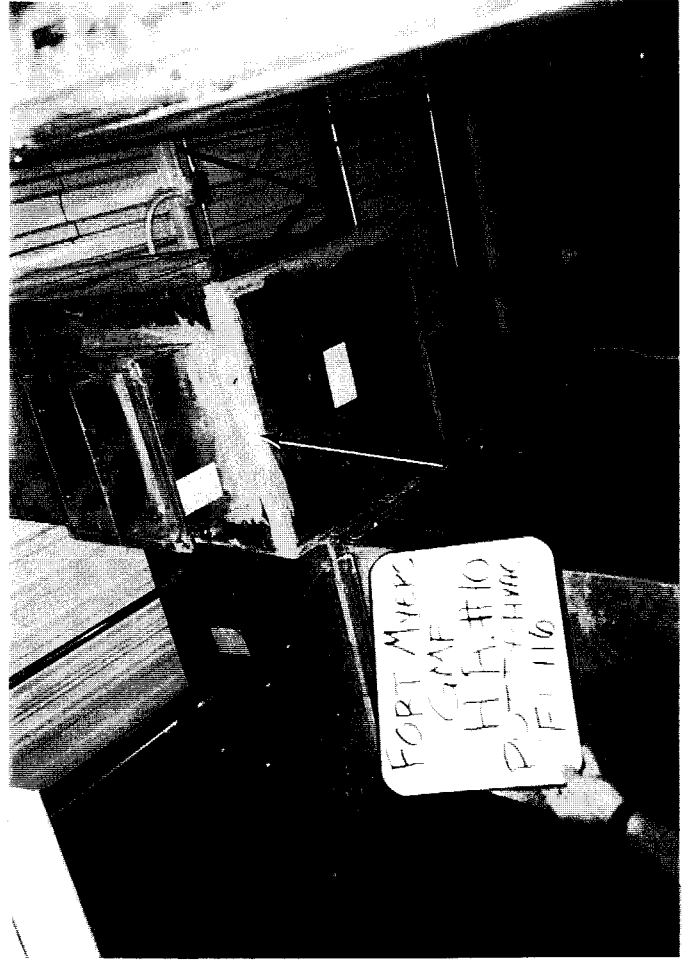


PHOTO 11. Homogeneous Area 10: Putty, as found in room F1-116 (non-ACBM)



PHOTO 12. Homogeneous Area 11: Caulk (gray), as found in room F1-116 (non-ACBM)

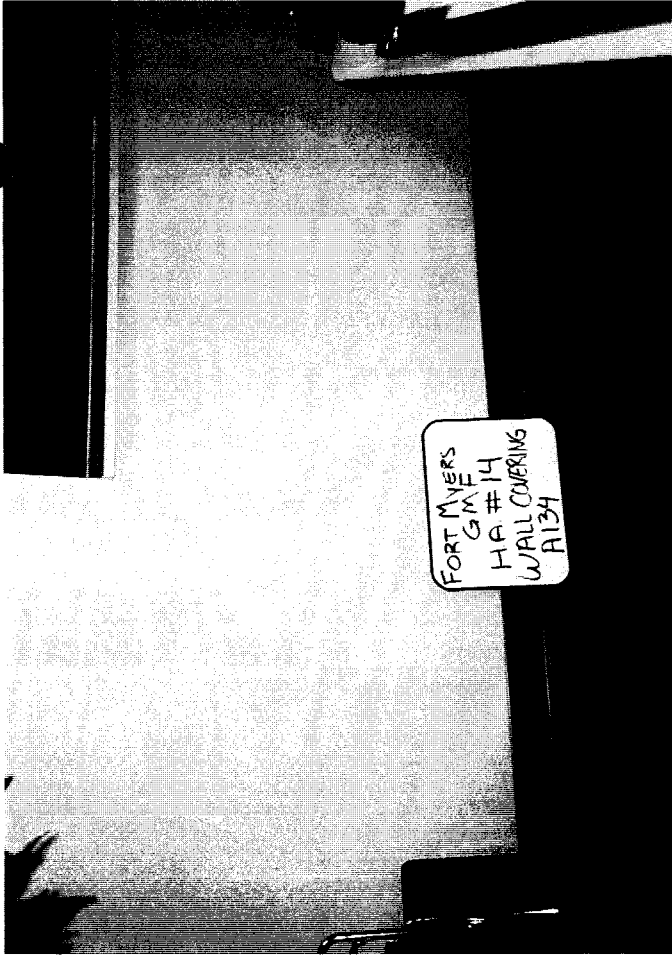


PHOTO 14. Homogeneous Area 14: Wall covering, as found in room A-134 (non-ACBM)



PHOTO 16. Homogeneous Area 17: Caulk (white), as found in room F1-116 (non-ACBM)

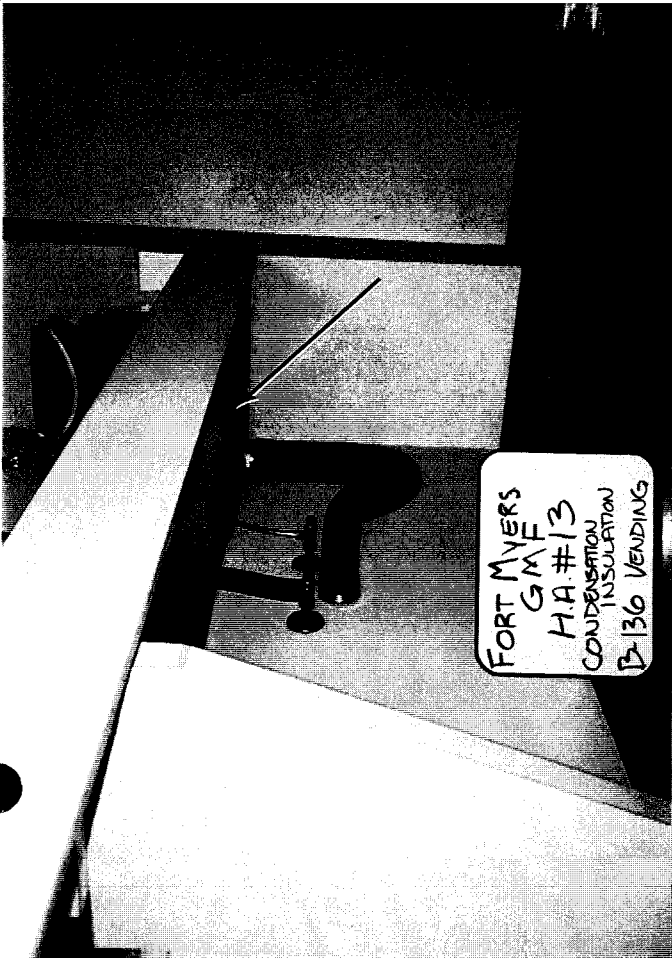


PHOTO 13. Homogeneous Area 13: Condensate insulation shield (blue), as found in room B-136 (non-ACBM)

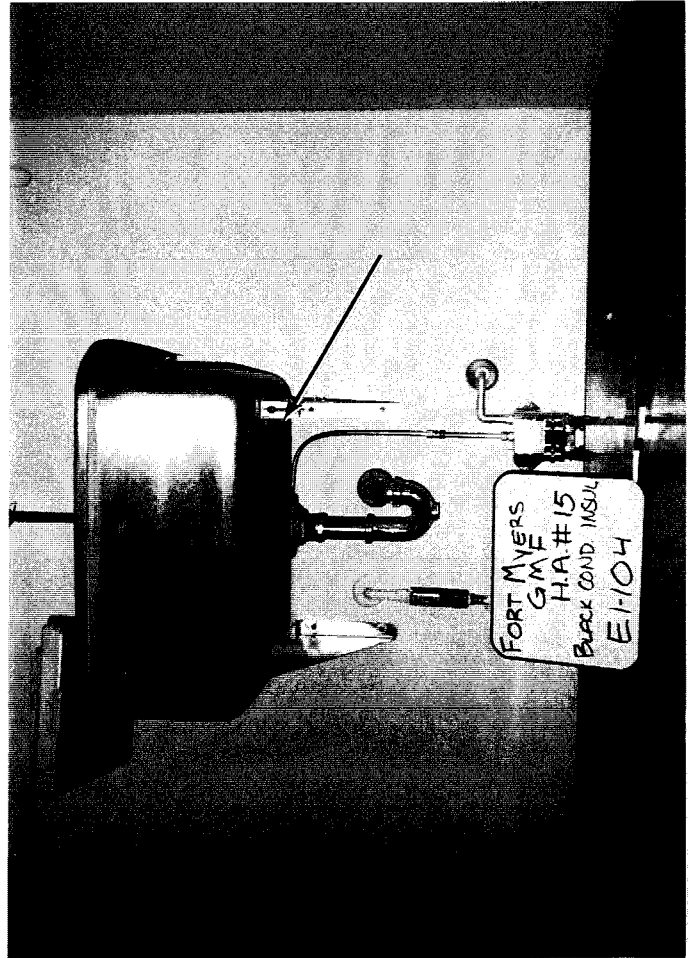


PHOTO 15. Homogeneous Area 15: Condensate insulation shield (black), as found in room E1-104 (non-ACBM)



PHOTO 18. Air sample FMG-A-04 in room F2-105



PHOTO 17. Homogeneous Area 18: Caulk, as found in the exterior joints and seams (non-ACBM)

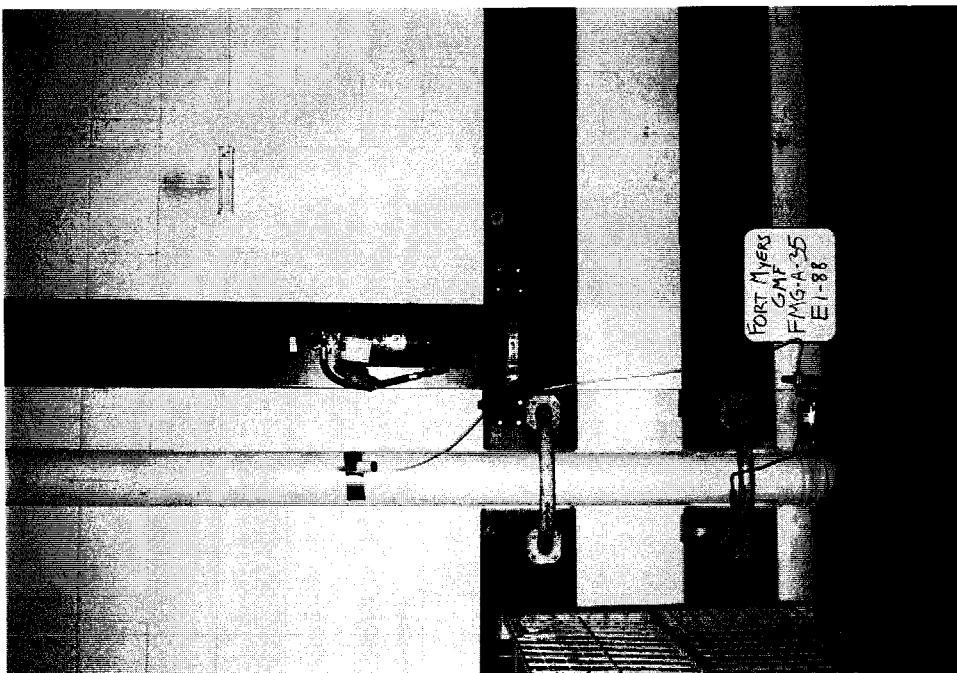


PHOTO 20. Air sample FMG-A-35 in room E1-88



PHOTO 19. Air sample FMG-A-12 in room F1-109



PHOTO 21. Air sample FMG-A-42 in the workshop

APPENDIX A-1

**EXPLANATION OF HAZARD RANKS/ASSESSMENTS;
DECISION TREE FLOW CHART**

APPENDIX A-1
AHERA ASSESSMENT CATEGORIES, HAZARD RANKS,
AND DECISION TREE FLOW CHART

1. AHERA ASSESSMENT CATEGORIES

In the AHERA method, friable suspect ACBM is categorized according to the type of material and the amount of damage that the material has sustained or is likely to sustain in the future. The AHERA method contains seven possible assessment categories for friable ACBM. The seven AHERA Assessment Categories are as follows:

1. Damaged or Significantly Damaged Thermal System Insulation (TSI)
2. Damaged Friable Surfacing Material
3. Significantly Damaged Friable Surfacing Material
4. Damaged or Significantly Damaged Friable Miscellaneous Material
5. ACBM with Potential for Significant Damage
6. ACBM with Potential for Damage
7. Any Remaining Friable ACBM or Friable Suspect ACBM

The AHERA physical assessment method defines "significant damage" as evenly distributed damage to greater than 10 percent of a material's surface or localized damage to greater than 25 percent of the material's surface. An ACBM is classified as "damaged" if the material's surface is crumbling, blistered, water stained, or gouged over less than 10 percent (but more than 1 percent) of the surface (if the damage is evenly distributed); or less than 25 percent if the damage is localized. Material that is classified as being in good condition shows only "very limited" (less than 1 percent) damage or deterioration.

Non-friable ACBM is not required to be assessed under the AHERA method. However, for the purpose of this project, all non-friable materials were placed into Assessment Categories 5 or 6. The Physical Assessment Categories were assigned to suspect materials at the time samples were collected. Subsequent laboratory analysis indicated some of the materials did not contain asbestos.

Therefore, Physical Assessment Categories assigned to these non-asbestos-containing materials are, in retrospect, not applicable.

2. HAZARD RANKS

When assigning ACBM to a hazard rank category, the initial factor considered is the condition of the material. The potential for the ACBM to be disturbed by building occupants is then evaluated. A material that is classified as being "significantly damaged" during the survey is placed into Hazard Rank Category #1. Hazard Rank Categories #2 through #4 reflect ACBM that is "damaged" as defined by AHERA with Hazard Rank #2 indicating a potential for significant damage, Hazard Rank #3 indicating a potential for damage, and Hazard Rank #4 indicating a low potential for additional damage. Hazard Rank Categories #5 through #7 are reserved for ACBM that is currently in good condition, but with a range in the likelihood for future disturbance. A copy of the Hazard Rank Decision Tree is provided as Figure A-1.

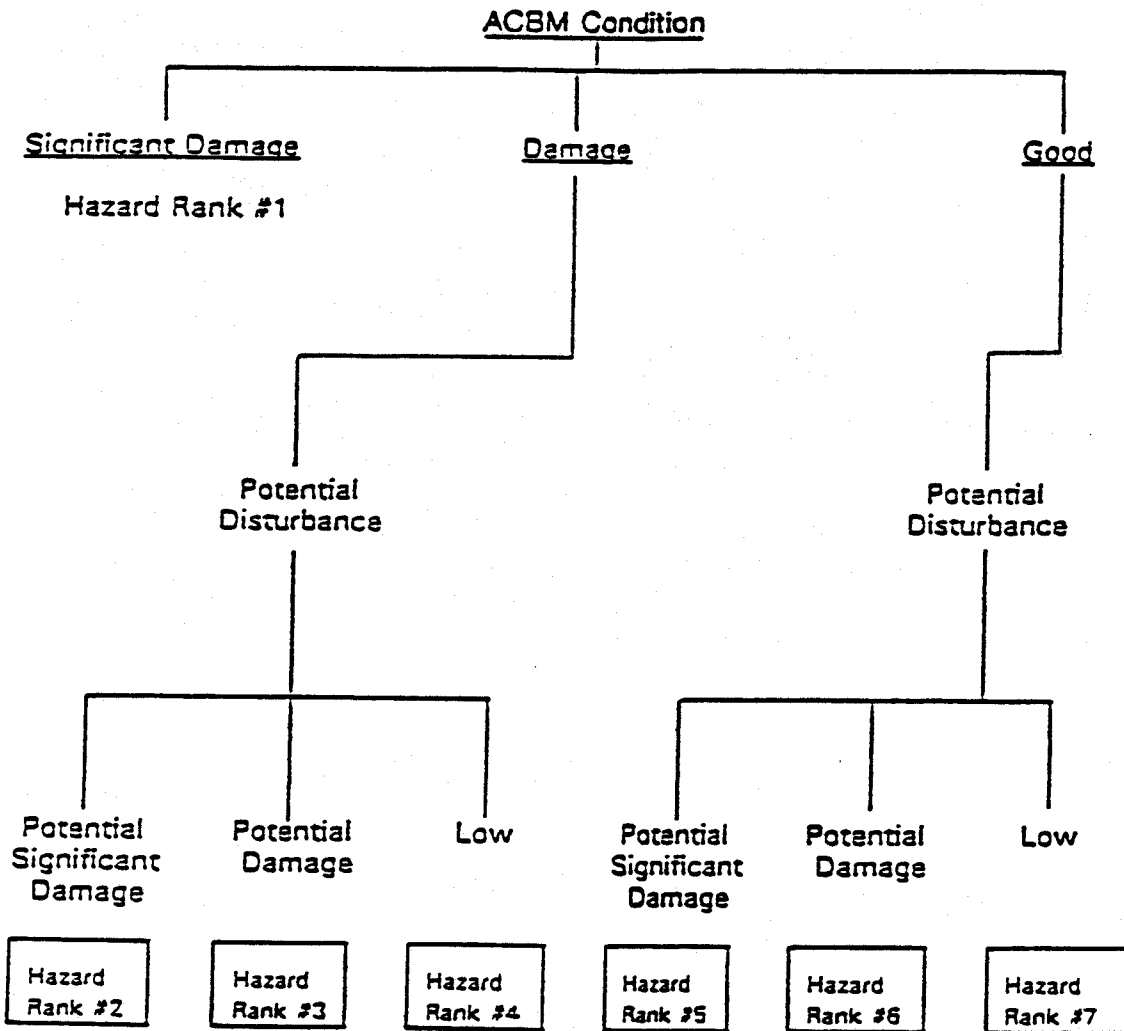
The response actions required by AHERA are based on the Hazard Ranking category to which an ACBM is assigned. The AHERA response actions for each hazard rank category are as follows:

<u>Hazard Rank Category</u>	<u>AHERA Categories</u>	<u>Response Actions Required by AHERA</u>
1	Significantly Damaged	Evacuate or isolate the area if needed. Remove the ACBM (or enclose or encapsulate if sufficient to contain fibers). Repair of thermal system insulation is allowed if feasible and safe. O&M required for all friable ACBM.
2	Damaged with a Potential for Significant Damage	Evacuate or isolate the area if needed. Remove, enclose, encapsulate, or repair to correct damage. Take steps to reduce potential for disturbance. O&M required for all friable ACBM.
3	Damaged with a Potential for Damage	Remove, enclose, encapsulate, or repair to correct damage. O&M required for all friable ACBM.
4	Damaged	Same as hazard rank 3.

- | | | |
|---|----------------------------------|--|
| 5 | Potential for Significant Damage | Evacuate or isolate the area if needed. Take steps steps to reduce potential for disturbance. O&M required for all friable ACBM. |
| 6 | Potential for Damage | O&M required for all friable ACBM. |
| 7 | All Remaining ACBM | O&M required for all friable ACBM, but measures need not be as extensive as above. |

3. DECISION TREE FLOW CHART

HAZARD RANKING DECISION TREE



As obtained from the Georgia Institute of Technology Research Institute's Managing Asbestos In Buildings. Course Manual 1992.

HAZARD RANKING DECISION TREE
FOR ASBESTOS-CONTAINING
BUILDING MATERIALS
United States Postal Service

DAMES & MOORE

APPENDIX A-2
STATEMENT OF LABORATORY PROTOCOLS



AMA Analytical Services, Inc.

Electron & Optical Microscopy Services



Statement of PCM Method Used (Air Samples)

PCM samples are analyzed following the NIOSH 7400 Method, Revision 3 (05/15/89), "A" counting rules. All personal samples are analyzed following the OSHA Reference Method.

Statement of PLM Method Used (Friable Bulk Samples)

EPA Test Method for the determination of Asbestos in Bulk Building Material is EPA Document 600/R-93/116, July 1993)

(Non-friable Bulk Samples)

Analytical procedures used meet or exceed the ELAP Method 198.1 as specified in the New York State Department of Health Environmental Laboratory Program (ELAP) Certification Manual (04/15/95).

Statement of TEM Method Used (Air Samples)

AHERA

Analytical procedures used meet to exceed the AHERA "Interim Transmission Electron Microscopy Analytical Methods" protocol described in Appendix A to Subpart E of 40 CRF Part 763.

NIOSH 7402

Analytical procedures used meet or exceed the NIOSH 7402, Revision #1, (05/15/89) Method.

EPA LEVEL II

Analytical procedures used meet or exceed the EPA Level II Protocol as specified in EPA Document 600/4-85-049.

Statement of TEM Method Used (Non-friable Bulk Samples)

Analytical procedures used meet or exceed the ELAP Method 198.4 as specified in the NEW York State Department of Health Environmental Laboratory Approval Program (ELAP) Certification Manual (04/15/94).

An AIHA (#8863), NVLAP (#1143) & New York ELAP (#10920) Accredited Laboratory

4485 Forbes Boulevard • Lanham, MD 20706 • (301)459-2640 • (800)346-0961 • FAX (301)459-2643

APPENDIX B

BULK SAMPLE LOG (TABLE B-1)

TABLE B-1

BULK SAMPLE LOG
 UNITED STATES POSTAL SERVICE
 FT. MYERS, FLORIDA GENERAL MAIL FACILITY
 (Finance/Sub. No. 113077-G11)

Homogeneous Area Number (a)	Location	Homogeneous Material	Type of Material	Sample Identification	Percent and Type of Asbestos	Estimated Quantities	AHERA Physical Assessment Category	Hazard Rank Category	Recommendation	NESHAP Classification
01	Room E2-105	Asphalt plank flooring	M	FMG-01-40	NAD	150,000 sq ft	NA	NA	NA	NA
01	Workroom - north	Asphalt plank flooring	M	FMG-01-41	NAD	150,000 sq ft	NA	NA	NA	NA
01	Workroom - northeastern corner	Asphalt plank flooring	M	FMG-01-42	NAD	150,000 sq ft	NA	NA	NA	NA
01	Room B-130	Asphalt plank flooring	M	FMG-01-43	NAD	150,000 sq ft	NA	NA	NA	NA
02	Corridor F2-107	Drywall/joint compound	M	FMG-02-09	NAD	200,000 sq ft	NA	NA	NA	NA
02	Room F2-119	Drywall/joint compound	M	FMG-02-10	NAD	200,000 sq ft	NA	NA	NA	NA
02	Room B-121	Drywall/joint compound	M	FMG-02-23	NAD	200,000 sq ft	NA	NA	NA	NA
02	Room A-143	Drywall/joint compound	M	FMG-02-24	NAD	200,000 sq ft	NA	NA	NA	NA
03	Room F1-116 (AHU #7)	Pipe insulation	TSI	FMG-03-15	NAD	5,000 ln ft	NA	NA	NA	NA
03	Room F1-116 (AHU #7)	Pipe insulation	TSI	FMG-03-16	NAD	5,000 ln ft	NA	NA	NA	NA
03	Room B-126 (AHU #13)	Pipe insulation	TSI	FMG-03-37	NAD	5,000 ln ft	NA	NA	NA	NA
04	Room F1-121	Cove base mastic	M	FMG-04-11	NAD	5,000 ln ft	NA	NA	NA	NA
04	Room F1-103	Cove base mastic	M	FMG-04-12	NAD	5,000 ln ft	NA	NA	NA	NA
04	Room A-143	Cove base mastic	M	FMG-04-28	NAD	5,000 ln ft	NA	NA	NA	NA
04	Room B-125	Cove base mastic	M	FMG-04-29	NAD	5,000 ln ft	NA	NA	NA	NA
05	Room F1-121	2-foot by 2-foot ceiling tile	M	FMG-05-13	NAD	<10,000 sq ft	NA	NA	NA	NA
05	Room F2-133	2-foot by 2-foot ceiling tile	M	FMG-05-14	NAD	<10,000 sq ft	NA	NA	NA	NA
05	Room B-102	2-foot by 2-foot ceiling tile	M	FMG-05-34	NAD	<10,000 sq ft	NA	NA	NA	NA
05	Room A-129	2-foot by 2-foot ceiling tile	M	FMG-05-35	NAD	<10,000 sq ft	NA	NA	NA	NA
06	Room F1-109	12-inch by 12-inch gray floor tile	M	FMG-06-04	NAD	40,000 sq ft	NA	NA	NA	NA
06	Room F1-109	12-inch by 12-inch gray floor tile mastic	M	FMG-06-05M	NAD	40,000 sq ft	NA	NA	NA	NA
06	Corridor F2-107	12-inch by 12-inch gray floor tile	M	FMG-06-06	NAD	40,000 sq ft	NA	NA	NA	NA
06	Corridor F2-107	12-inch by 12-inch gray floor tile mastic	M	FMG-06-07M	NAD	40,000 sq ft	NA	NA	NA	NA
06	QC sample of sample FMG-06-06	12-inch by 12-inch gray floor tile	M	FMG-06-08	Trace chrysotile (PLM); NAD (TEM)	40,000 sq ft	NA	NA	NA	NA
06	Room B-125	12-inch by 12-inch gray floor tile	M	FMG-06-30	NAD	40,000 sq ft	NA	NA	NA	NA
06	Room B-125	12-inch by 12-inch gray floor tile mastic	M	FMG-06-31M	NAD	40,000 sq ft	NA	NA	NA	NA
06	Room B-102	12-inch by 12-inch gray floor tile	M	FMG-06-32	NAD	40,000 sq ft	NA	NA	NA	NA

TABLE B-1
BULK SAMPLE LOG
UNITED STATES POSTAL SERVICE
FT. MYERS, FLORIDA GENERAL MAIL FACILITY
(Finance/Sub. No. 113077-G11)

Homogeneous Area Number (#)	Location	Homogeneous Material	Type of Material	Sample Identification	Percent and Type of Asbestos	Estimated Quantities	ASHERA Physical Assessment Category	Hazard Rank Category	Recommendation	NESHAP Classification
06	Room B-102	12-inch by 12-inch gray floor tile mastic	M	FMG-06-33M	NAD	40,000 sq ft	NA	NA	NA	NA
07	Room F1-103	Window/door caulk	M	FMG-07-20	NAD	2,000 ln ft	NA	NA	NA	NA
07	Corridor B-129	Window/door caulk	M	FMG-07-21	NAD	2,000 ln ft	NA	NA	NA	NA
07	Room A-129	Window/door caulk	M	FMG-07-22	NAD	2,000 ln ft	NA	NA	NA	NA
08	Room F2-120	2-foot by 4-foot ceiling tile	M	FMG-08-01	NAD	20,000 sq ft	NA	NA	NA	NA
08	Room F1-109	2-foot by 4-foot ceiling tile	M	FMG-08-02	NAD	20,000 sq ft	NA	NA	NA	NA
08	Room A-143	2-foot by 4-foot ceiling tile	M	FMG-08-27	NAD	20,000 sq ft	NA	NA	NA	NA
08	Room B-132	2-foot by 4-foot ceiling tile	M	FMG-08-52	NAD	20,000 sq ft	NA	NA	NA	NA
09	Room F1-116 (AHU #7)	HVAC gasket	M	FMG-09-17	NAD	1,000 ln ft	NA	NA	NA	NA
09	Room E2-108	HVAC gasket	M	FMG-09-44	NAD	1,000 ln ft	NA	NA	NA	NA
09	Room E2-108	HVAC gasket	M	FMG-09-45	NAD	1,000 ln ft	NA	NA	NA	NA
09	QC sample of sample FMG-09-45	HVAC gasket	M	FMG-09-46	NAD	1,000 ln ft	NA	NA	NA	NA
10	Room F1-109	Putty	M	FMG-10-03	NAD	3,000 ln ft	NA	NA	NA	NA
10	Room A-143	Putty	M	FMG-10-39	NAD	3,000 ln ft	NA	NA	NA	NA
10	Room F2-118	Putty	M	FMG-10-53	NAD	3,000 ln ft	NA	NA	NA	NA
11	Room F1-116 (AHU #7)	Caulk (gray)	M	FMG-11-18	NAD	1,000 ln ft	NA	NA	NA	NA
11	Room B-126 (AHU #14)	Caulk (gray)	M	FMG-11-38	NAD	1,000 ln ft	NA	NA	NA	NA
11	Room E2-108	Caulk (gray)	M	FMG-11-47	NAD	1,000 ln ft	NA	NA	NA	NA
13	Room B-136	Condensate insulation shield (blue)	M	FMG-13-36	NAD	<100 sq ft	NA	NA	NA	NA
13	Room E2-109	Condensate insulation shield (blue)	M	FMG-13-48	NAD	<100 sq ft	NA	NA	NA	NA
13	QC sample of sample FMG-13-48	Condensate insulation shield (blue)	M	FMG-13-49	NAD	<100 sq ft	NA	NA	NA	NA
14	Room B-121	Wall covering	M	FMG-14-25	NAD	<5,000 sq ft	NA	NA	NA	NA
14	Room A-143	Wall covering	M	FMG-14-26	NAD	<5,000 sq ft	NA	NA	NA	NA
15	Room E1-104	Condensate insulation shield (black)	M	FMG-15-50	Trace chrysotile (PLM); NAD (TEM)	<50 sq ft	NA	NA	NA	NA
15	Room E1-105	Condensate insulation shield (black)	M	FMG-15-51	NAD	<50 sq ft	NA	NA	NA	NA
16	Room E1-104 (fume hood)	Panel	M	Not Sampled	Assumed ACBM	<50 sq ft	6	7	O&M Program	Category II; non-regulated

TABLE B-1

**BULK SAMPLE LOG
UNITED STATES POSTAL SERVICE
FT. MYERS, FLORIDA GENERAL MAIL FACILITY
(Finance/Sub. No. 113077-G11)**

Homogeneous Area Number (a)	Location	Homogeneous Material	Type of Material	Sample Identification	Percent and Type of Asbestos	Estimated Quantities	AHERA Physical Assessment Category	Hazard Rank Category	Recommendation	NESHAP Classification
17	Room F1-116 (AHU #7)	Caulk (white)	M	FMG-17-19	NAD	100 ln ft	NA	NA	NA	NA
17	Room F1-116 (AHU #7)	Caulk (white)	M	FMG-17-54	NAD	100 ln ft	NA	NA	NA	NA
18	Rear - western exterior	Caulk	M	FMG-18-55	NAD	<5,000 ln ft	NA	NA	NA	NA
18	Rear - western exterior	Caulk	M	FMG-18-56	NAD	<5,000 ln ft	NA	NA	NA	NA
19	Entire facility - roof	Decking with rolled shingles	M	Not Sampled	Assumed ACBM	208,000 sq ft	Not Assessed	Not Assessed	Do Not Disturb	Category II; non-regulated

M - miscellaneous material
 TSI - thermal system insulation
 S - surfacing material
 ACBM - asbestos-containing building material
 NAD - no asbestos detected
 NA - not applicable; non-asbestos-containing material
 sq ft - square feet
 ln ft - linear feet
 O&M Program - operations and maintenance program
 QC - quality control
 PLM - polarized light microscopy
 TEM - transmission electron microscopy

(a) No Homogeneous Area 12 was assigned

APPENDIX C

**LABORATORY ANALYSIS DATA SHEETS AND
CHAIN-OF-CUSTODY FORMS**

Dames & Moore
3525 Piedmont Road #500
Building 6
Atlanta, GA 30305
ATTENTION: Patty Westermann

U.S.P.S.; Ft. Myers GMF
JOB SITE: 03711-386-5008
JOB NUMBER: Dames & Moore
SUBMITTED BY:

DATE ANALYZED: 09/27/95
CHAIN OF CUSTODY #: 38452
PERSON SUBMITTING: Brian Queen

SUMMARY OF POLARIZED LIGHT MICROSCOPY

CUST SAMPLE ID	AMA SAMPLE NUMBER	ANALYSIS METHOD*	ASBESTOS %			OTHER FIBROUS MATERIAL %			NON-FIBROUS MATERIAL %			ID**	COMMENTS		
			TOTAL	CHRYSO-TILE	AMOSITE	LITE	OTHER	MINERAL	WOOL	GLASS	FIBERS			OTHER	PART.
FMG-08-01	9539307	PIMEPA93	NAD						18.00%				47.00%	ML	
FMG-08-02	9539308	PIMEPA93	NAD						20.00%				35.00%	ML	
FMG-10-03	9539309	PIMEPA93	NAD										100.00%	ML	
FMG-06-04	9539310	PIMEPA93	NAD										100.00%	ML	SEE NOTE 1
FMG-06-05M	9539311	PIMEPA93	NAD										100.00%	ML	OTHER = SYNTHETIC
FMG-06-06	9539312	PIMEPA93	NAD										100.00%	ML	SEE NOTE 1
FMG-06-07M	9539313	PIMEPA93	NAD										100.00%	ML	SEE NOTE 1
FMG-06-08	9539314	PIMEPA93	TRACE										100.00%	ML	SEE NOTE 1
FMG-02-09	9539315	PIMEPA93	NAD						2.00%				95.00%	ML	
FMG-02-10	9539316	PIMEPA93	NAD						2.00%				94.00%	ML	
FMG-04-11	9539317	PIMEPA93	NAD										98.00%	ML	

COMMENTS: * SEE KEY FOR DESCRIPTION ** ANALYST ID CODE (SEE LAST PAGE)
NAD = No asbestos detected.
TRACE = Trace quantity (<1%) of this component detected.

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public and these Laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from us. Sample types, locations and collection protocols are based upon the information provided by the persons submitting them and, unless collected by personnel of these Laboratories, we expressly disclaim any knowledge and liability for the accuracy and completeness of this information. Residual sample material will be discarded in accordance with the appropriate regulatory guidelines, unless otherwise requested by the client. NVLAP Accreditation applies only to polarized light microscopy of bulk samples and transmission electron microscopy of air samples.

CERTIFICATE OF ANALYSIS

Dames & Moore
 3525 Piedmont Road #500
 Building 6
 Atlanta, GA 30305

JOB SITE: U.S.P.S.; Ft. Myers GMF
 JOB NUMBER: 03711-386-5008
 SUBMITTED BY: Dames & Moore

DATE ANALYZED: 09/27/95
 CHAIN OF CUSTODY #: 38452
 PERSON SUBMITTING: Brian Queen

ATTENTION: Patty Westermann

SUMMARY OF POLARIZED LIGHT MICROSCOPY

CUST SAMPLE ID	AMA SAMPLE NUMBER	ANALYSIS METHOD*	ASBESTOS %			CROCIDO-			OTHER FIBROUS MATERIAL %			NON-FIBROUS-			ANL. ID**	COMMENTS
			TOTAL ASBESTOS	CHRYSO-TILE	AMOSITE	LITE	OTHER	MINERAL FIBROUS	ORGANIC FIBERS	GLASS FIBERS	WOOL	PART. MATERIAL	OTHER			
FMG-04-12	9539318	PLMEPA93	NAD												ML	
FMG-05-13	9539319	PLMEPA93	NAD						18.00%						ML	
FMG-05-14	9539320	PLMEPA93	NAD						22.00%						ML	
FMG-03-15	9539321	PLMEPA93	NAD												ML	
FMG-03-16	9539322	PLMEPA93	NAD												ML	
FMG-09-17	9539323	PLMEPA93	NAD												ML	
FMG-11-18	9539324	PLMEPA93	NAD												ML	
FMG-17-19	9539325	PLMEPA93	NAD												ML	
FMG-07-20	9539326	PLMEPA93	NAD												ML	
FMG-07-21	9539327	PLMEPA93	NAD												ML	
FMG-07-22	9539328	PLMEPA93	NAD												ML	

COMMENTS: * SEE KEY FOR DESCRIPTION ** ANALYST ID CODE (SEE LAST PAGE)
 NAD = No asbestos detected.
 TRACE = Trace quantity (<1%) of this component detected.

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Dames & Moore
 3525 Piedmont Road #500
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 ATTENTION: Patty Westermann

JOB SITE: U.S.P.S.; Ft. Myers GMF
 JOB NUMBER: 03711-386-5008
 SUBMITTED BY: Dames & Moore

DATE ANALYZED: 09/27/95
 CHAIN OF CUSTODY #: 38452
 PERSON SUBMITTING: Brian Queen

CERTIFICATE OF ANALYSIS

SUMMARY OF POLARIZED LIGHT MICROSCOPY

CUST SAMPLE ID	AMA SAMPLE NUMBER	ANALYSIS METHOD*	ASBESTOS %		CHRYSO-		CROCIDO-		OTHER FIBROUS MATERIAL %			NON-FIBROUS-		ANL. ID**	COMMENTS	
			TOTAL	TILE	AMOSITE	LIITE	OTHER	MINERAL	FIBROUS	ORGANIC	WOOL	GLASS	FIBERS			OTHER
FMG-02-23	9539329	PLMEPA93	NAD												ML	
FMG-02-24	9539330	PLMEPA93	NAD						3.00%						ML	
FMG-14-25	9539331	PLMEPA93	NAD												ML	OTHER = SYNTHETIC
FMG-14-26	9539332	PLMEPA93	NAD												ML	OTHER = SYNTHETIC
FMG-08-27	9539333	PLMEPA93	NAD						15.00%						ML	
FMG-04-28	9539334	PLMEPA93	NAD												ML	
FMG-04-29	9539335	PLMEPA93	NAD												ML	
FMG-06-30	9539336	PLMEPA93	NAD												ML	SEE NOTE 1
FMG-06-31M	9539337	PLMEPA93	NAD						2.00%						ML	
FMG-06-32	9539338	PLMEPA93	NAD												ML	SEE NOTE 1
FMG-06-33M	9539339	PLMEPA93	NAD												ML	

COMMENTS: * SEE KEY FOR DESCRIPTION ** ANALYST ID CODE (SEE LAST PAGE)

NAD = No asbestos detected.

TRACE = Trace quantity (<1%) of this component detected.

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CERTIFICATE OF ANALYSIS

Dames & Moore
 3525 Piedmont Road #500
 Building 6
 Atlanta, GA 30305
 ATTENTION: Patty Westermann

JOB SITE: U.S.P.S.; Ft. Myers GMF
 JOB NUMBER: 03711-386-5008
 SUBMITTED BY: Dames & Moore

DATE ANALYZED: 09/27/95
 CHAIN OF CUSTODY #: 38452
 PERSON SUBMITTING: Brian Queen

SUMMARY OF POLARIZED LIGHT MICROSCOPY

CUST SAMPLE ID	AMA SAMPLE NUMBER	ANALYSIS METHOD*	ASBESTOS			CROCIDO-			OTHER FIBROUS MATERIAL			NON-FIBROUS-			COMMENTS	
			TOTAL	CHRYSO-	TILE	AMOSITE	LITE	OTHER	MINERAL	FIBROUS	ORGANIC	WOOL	GLASS	FIBERS		OTHER
FMG-05-34	9539340	PLMEPA93	NAD						16.00%			37.00%			47.00%	ML
FMG-05-35	9539341	PLMEPA93	NAD						20.00%			45.00%			35.00%	ML
FMG-13-36	9539342	PLMEPA93	NAD									20.00%			80.00%	ML
FMG-03-37	9539343	PLMEPA93	NAD							5.00%	TRACE	12.00%			83.00%	ML OTHER = WOLLASTONITE
FMG-11-38	9539344	PLMEPA93	NAD							TRACE					100.00%	ML
FMG-10-39	9539345	PLMEPA93	NAD							TRACE	TRACE				100.00%	ML
FMG-01-40	9539346	PLMEPA93	NAD							TRACE	8.00%				92.00%	ML
FMG-01-41	9539347	PLMEPA93	NAD								2.00%	5.00%	TRACE		93.00%	ML OTHER = SYNTHETIC
FMG-01-42	9539348	PLMEPA93	NAD								5.00%	12.00%			83.00%	ML
FMG-01-43	9539349	PLMEPA93	NAD								2.00%	10.00%			88.00%	ML
FMG-09-44	9539350	PLMEPA93	NAD									15.00%			85.00%	ML

COMMENTS: * SEE KEY FOR DESCRIPTION ** ANALYST ID CODE (SEE LAST PAGE)

NAD = No asbestos detected.

TRACE = Trace quantity (<1%) of this component detected.

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public and these Laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from us. Sample types, locations and collection protocols are based upon the information provided by the persons submitting them and, unless collected by personnel of these Laboratories, we expressly disclaim any knowledge and liability for the accuracy and completeness of this information. Residual sample material will be discarded in accordance with the appropriate regulatory guidelines, unless otherwise requested by the client. NVLAP Accreditation applies only to polarized light microscopy of bulk samples and transmission electron microscopy of air samples.

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An AIHA (# 8863), NVLAP (# 1143), & New York ELAP (# 10920) Accredited Laboratory

4485 Forbes Blvd., • Lanham MD 20706 • (301) 459-2640 • Toll Free (800) 346-0961 • Fax (301)459-2643

Dames & Moore
3525 Piedmont Road #500
Building 6
Atlanta, GA 30305
ATTENTION: Patty Westermann

JOB SITE: U.S.P.S.; Ft. Myers GMF
JOB NUMBER: 03711-386-5008
SUBMITTED BY: Dames & Moore

DATE ANALYZED: 09/27/95
CHAIN OF CUSTODY #: 38452
PERSON SUBMITTING: Brian Queen

SUMMARY OF POLARIZED LIGHT MICROSCOPY

CUST SAMPLE ID	AMA SAMPLE NUMBER	ANALYSIS METHOD*	ASBESTOS			CROCIDOLITE			OTHER FIBROUS MATERIAL			NON-FIBROUS MATERIAL			ID**	COMMENTS
			TOTAL	CHRYSO-TILE	AMOSITE	ASBESTOS	CHRYSO-LITE	OTHER	MINERAL	WOOL	GLASS	FIBERS	OTHER	PART.		
FMG-09-45	9539351	PIMEPA93	NAD													ML
FMG-09-46	9539352	PIMEPA93	NAD													ML
FMG-11-47	9539353	PIMEPA93	NAD													ML
FMG-13-48	9539354	PIMEPA93	NAD													ML
FMG-13-49	9539355	PLMEPA93	NAD													ML
FMG-15-50	9539356	PLMEPA93	TRACE													ML
FMG-15-51	9539357	PLMEPA93	NAD													ML
FMG-08-52	9539358	PLMEPA93	NAD													ML
FMG-10-53	9539359	PLMEPA93	NAD													ML
FMG-17-54	9539360	PLMEPA93	NAD													ML
FMG-18-55	9539361	PLMEPA93	NAD													ML

COMMENTS: * SEE KEY FOR DESCRIPTION ** ANALYST ID CODE (SEE LAST PAGE)

NAD = No asbestos detected.

TRACE = Trace quantity (<1%) of this component detected.

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Dames & Moore
 3525 Piedmont Road #500
 Building 6
 Atlanta, GA 30305
 ATTENTION: Patty Westermann

JOB SITE: U.S.P.S.; Ft. Myers GMF
 JOB NUMBER: 03711-386-5008
 SUBMITTED BY: Dames & Moore

DATE ANALYZED: 09/27/95
 CHAIN OF CUSTODY #: 38452
 PERSON SUBMITTING: Brian Queen

SUMMARY OF POLARIZED LIGHT MICROSCOPY

CUST SAMPLE ID	AMA SAMPLE NUMBER	ANALYSIS METHOD*	TOTAL ASBESTOS	CHRYSO- TILE	AMOSITE LITE	CROCIDO- OTHER	OTHER FIBROUS MATERIAL % MINERAL FIBROUS ORGANIC	Wool GLASS	FIBERS OTHER	OTHER OTHER	NON-FIBROUS-/ MATERIAL % ANL.	COMMENTS ID**
FMG-18-56	9539362	PLMPEA93	NAD								100.00%	ML

COMMENTS: * SEE KEY FOR DESCRIPTION ** ANALYST ID CODE (SEE LAST PAGE)

NAD = No asbestos detected.

Trace = Trace quantity (<1%) of this component detected.

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public and these Laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from us. Sample types, locations and collection protocols are based upon the information provided by the persons submitting them and, unless collected by personnel of these Laboratories, we expressly disclaim any knowledge and liability for the accuracy and completeness of this information. Residual sample material will be discarded in accordance with the appropriate regulatory guidelines, unless otherwise requested by the client. NVLAP Accreditation applies only to polarized light microscopy of bulk samples and transmission electron microscopy of air samples.

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Dames & Moore
3525 Piedmont Road #500
Building 6
Atlanta, GA 30305
ATTENTION: Patty Westermann

JOB SITE: U.S.P.S.; Ft. Myers GMF
JOB NUMBER: 03711-386-5008
SUBMITTED BY: Dames & Moore

DATE ANALYZED: 09/27/95
CHAIN OF CUSTODY #: 38452
PERSON SUBMITTING: Brian Queen

SUMMARY OF POLARIZED LIGHT MICROSCOPY

Analytical results reported are estimated as whole numbers with zero decimal places, rather than two decimal places.

NOTE 1: TEM RECOMMENDATION - Please note, due to resolution limitations with optical microscopy and/or interference from matrix components of this sample, results which are reported via PLM as negative or trace (<1%) for asbestos may contain a significant quantity of asbestos. It is recommended that additional analytical techniques including TEM be used.

NOTE 2: MATRIX REDUCTION RECOMMENDATION - Please note, due to interference from the matrix components of this sample, results which are reported via PLM as negative or trace (<1%) for asbestos may contain a significant quantity of asbestos, which is obscured from view. It is recommended that the additional preparation technique of gravimetric reduction be performed on this sample prior to re-analysis by PLM.

Analysis method codes:

PLMEPA93 - EPA "Test Method" - EPA/600/R-93/116 dated July 1993

Meg Lim
Meg Lim

LAST PAGE OF 7 PAGE(S)

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public and these Laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from us. Sample types, locations and collection protocols are based upon the information provided by the persons submitting them and, unless collected by personnel of these Laboratories, we expressly disclaim any knowledge and liability for the accuracy and completeness of this information. Residual sample material will be discarded in accordance with the appropriate regulatory guidelines, unless otherwise requested by the client. NVLAP Accreditation applies only to polarized light microscopy of bulk samples and transmission electron microscopy of air samples.

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Client: Dames & Moore
Address: 6 Piedmont Center
Atlanta, Georgia 30305
Attention: Paty Westermann

Job Name:
Job Location:
Job Number:
Submitted By:

USPS
Ft. Myers, GMF
03711-386-5008
Dames & Moore

Chain of Custody:
Date Received:
Person Submitting:
Microscopist Name:

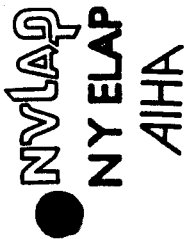
38452
10/02/95
Paty Westermann
Luis Bustillos

Summary of Asbestos Analysis of Non-Friable Organically Bound (NOB) Bulk Samples

Sample Identification			Asbestos Data**				Non-Asbestos Data			Comments	
Client	AMA Sample ID #	Sample Type*	% Asbestos by PLM***	% Asbestos by TEM***	% by Type Chrysotile	% by Type Amosite	% by Type Crocidolite	% Organics	% Acid Soluble	% Other	
FMG-06-08	9339314	Whole	NAD	NAD				31.8	46.1	22.0	

* Whole = Whole sample submitted and gravimetric reduction performed by AMA Analytical Services. Residue = Gravimetric reduction of sample performed by client and residue only submitted for analysis.
 ** NAD = "No Asbestos Detected" TR = "Trace of asbestos detected at less than 1%"
 *** PLM = Polarized Light Microscopy after gravimetric reduction (NY ELAP Method 198.1) TEM = Transmission Electron Microscopy after Gravimetric Reduction (NY ELAP Method 198.4)
 NOTE #1: Amounts (%) reported have an analytical significance of only two (2) significant digits, rather than an accuracy to one (1) decimal place.

CERTIFICATE OF ANALYSIS



Client: Dames & Moore
Address: 3525 Piedmont Road
Atlanta, Georgia 30305
Attention: Patti Westermann

FL-GMF
Job Name: Ft. Myers
Job Location: 03711-386-5008
Job Number: Dames & Moore
Submitted By:

Chain of Custody:
Date Received: 03/04/96
Person Submitting: Patti Westermann
Microscopist Name: Luis Bustillos

Summary of Asbestos Analysis of Non-Friable Organically Bound (NOB) Bulk Samples

Sample Identification			Asbestos Data**				Non-Asbestos Data				Comments	
Client	AMA Sample ID #	Sample Type*	% Total Asbestos	% Asbestos by PLM***	% Asbestos by TEM***	% by Type Chrysotile	% by Type Amosite	% by Type Crocidolite	% Organics	% Acid Soluble	% Other	
FMG-15-50	9539356	Whole	NAD		NAD				19.5	11.2	69.2	

* Whole = Whole sample submitted and gravimetric reduction performed by AMA Analytical Services Residue = Gravimetric reduction of sample performed by client and residue only submitted for analysis.
 ** NAD = "No Asbestos Detected" TR = "Trace of asbestos detected at less than 1%"
 *** PLM = Polarized Light Microscopy after gravimetric reduction (NY ELAP Method 198.1) TEM = Transmission Electron Microscopy after Gravimetric Reduction (NY ELAP Method 198.4)
 NOTE #1: Amounts (%) reported have an analytical significance of only two (2) significant digits, rather than an accuracy to one (1) decimal place.
 NOTE #2: The asbestos results reported represent the relative amount of asbestos in the residue; not the total amount of asbestos in the entire sample!

Date Analyzed: 03/07/96 Signed: _____ Date Signed: 03/07/96 Page 1 of 1

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public and these Laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from us. Sample types, locations and collection protocols are based upon the information provided by the persons submitting them and, unless collected by personnel of these Laboratories, we expressly disclaim any knowledge and liability for the accuracy and completeness of this information. Residual sample material will be discarded in accordance with the appropriate regulatory guidelines, unless otherwise requested by the client. NVLAP Accreditation applies only to polarized light microscopy of bulk samples and transmission electron microscopy of air samples.

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MAILING ADDRESS:
 1. Submittal Date: September 26, 1995 Job Name/Location: USPS: Ft. Meigs GMF
 2. Client Name: Davee Moore Job #: 03711-386-5008 P.O. #:
 3. Street/RFD/P.O. Box: 3525 Dornout Rd Bill To:
 4. City, State, Zip: Atlanta GA 30305 Phone #:
 5. Contact Person: Patty Westerman Submitted By: Brian Quinn (Print) (Signature)
 6. DATE & TIME RESULTS REQUIRED: 9/27/95 AM IMMED. 24HR 48HR 72HR 5-DAY OTHER(Specify):

SAMPLE DATA:
 1. Analysis Type: Asbestos Lead NOB - Whole (PLM/TEM) NOB Res. Ash (TEM) Other(Specify)
 2. Total Number Of Samples: TEM 50 PCM 50 LEAD 50 OTHER(Specify)
 3. ELECTRON MICROSCOPY SAMPLES:
 A. Filter Type: PC MCE B. Porosity: Micron 37mm 37mm 25mm
 C. Diameter: 37mm 25mm
 4. Release Criteria/Analytical Sensitivity: 0.010 f/cc 0.005 f/cc AHERA % ASBESTOS SIFT OTHER
 5. Field Sheet Attached? YES NO If No Then Please Complete The Following:

CLIENT ID NUMBER	AMA ID NUMBER	SAMPLE LOCATION	DATE	VOLUME (LITERS)	ANALYSIS								MATRIX						
					TEM	PCM	PLM	LEAD	OTHER	AIR	BLANK	BULK	WIPE	OTHER					
	1531307																		

REPORTING DATA:
 1. Verbal Results To Whom? Name: Patty Westerman Done: Beeper:
 2. Date Written Results Required
LABORATORY STAFF ONLY - (CUSTODY)
 1. Date/Time RCVD: 9/20/95 @ 1000 via: UPS By(Print): Stan Mann Sign: J Mann
 2. Date/Time Analyzed: 9/27/95 @ 1100 By(Print): Lee Lion Sign: Lee Lion Time: 1316 Initials: ML
 3. Results Reported To: Patty Westerman Via: fax Date: 9/29/95 Time: 1316
 4. Comments:



AIHA (#8863) NVLAP (#1143) NY ELAP (10920)
 4485 Forbes Blvd. • Lanham MD, 20706
 (301) 459-2640 • (800) 346-0961 • Fax(301) 459-2643

CHAIN OF CUSTODY

(Please Refer To This
 Number For Inquiries)

39450

MAILING ADDRESS:

1. Submittal Date: September 26, 1995 Job Name/location: USPS: Ft. Meyers GMF
 2. Client Name: Davee Noan Job #: 03711-386-5208 P.O. #:
 3. Street/RFD/P.O. Box: 3035 Piedmont Rd
 4. City, State, Zip: Atlanta GA 30305
 5. Contact Person: Patty Westerman Phone #: Fax:
 Submitted By: Brian Noan (Print) (Signature)
 6. DATE & TIME RESULTS REQUIRED: 9/29/95, Time: AM PM IMMED. 24HR 48HR 72HR 5-DAY OTHER(Specify):

SAMPLE DATA:

1. Analysis Type: Asbestos Lead NOB - Whole (PLM/TEM) NOB Res. Ash (TEM) Other(Specify)
 2. Total Number Of Samples: TEM PCM PLM 50 LEAD OTHER(Specify)
 3. ELECTRON MICROSCOPY SAMPLES:
 A. Filter Type: PC MCE B. Porosity: Micron C. Diameter: 37mm 25mm
 4. Release Criteria/Analytical Sensitivity: 0.010 f/cc 0.005 f/cc AHERA % ASBESTOS SIFT² OTHER
 5. Field Sheet Attached? YES NO IF No Then Please Complete The Following:

SAMPLE ANALYSIS INFORMATION

ANALYSIS

MATRIX

CLIENT ID NUMBER	AMA ID NUMBER	SAMPLE LOCATION	DATE	VOLUME (LITERS)	TEM	PCM	PLM	LEAD	OTHER	AIR	BLANK	BULK	WIPE	OTHER
	9539307													

REPORTING DATA:

1. Verbal Results To Whom? Name: Patty Westerman Phone: Beeper:
 2. Date Written Results Required / /

LABORATORY STAFF ONLY (CUSTODY)

1. Date/Time RCVD: 9/26/95 @ 10:00 AM Via: UPS By (Print): Shari Mann Sign:
 2. Date/Time Analyzed: 9/27/95 @ 1:00 By (Print): Lee Ann Mae Sign:
 3. Results Reported To: Patty Westerman Via: fax Date: 9/29/95 Time: 1316 Initials: MC
 4. Comments:

Dames & Moore, Inc.
Chain-of-Custody
Asbestos Bulk Sampling

Six Piedmont Center
 3525 Piedmont Road
 Atlanta, Georgia 30305

Phone: (404) 262-2915
 Fax: (404) 233-2271

Page 10 of 5

Sample Source & Client: **Ft. Myers GMF**

Signature: *B.C. De*

Project Title: **USPS - Asbestos Survey**

Job No.: **03711-380-5008**

Date	Sample Number	Sample Location	Type of Material Sampled	Analysis Requested
9.22.95	FMG-08-01	F2-120	2' x 4' WHITE CT	PLM
	✓ 1-02	F1-110	" "	
	-10-03	" "	PUTTY	
	-06-04	" "	12" x 12" GRAY FT	
	✓ 05M	" "	" " - MASTIC	
	-04	F2- HALLWAY	" "	
	-07M	" "	" " - MASTIC	
	✓ 08	" "	" "	
	-02-09	" "	DRYWALL	
	✓ -10	F2-119	" "	
	-04-11	F1-121	CONCRETE BASE MASTIC	
✓	✓ -12	F1-103	" " "	

Turn-Around Time Requested: 72-hour (Normal) 48-hour 24-hour

Relinquished By: *B.C. De* Date: 9.25.95 Time: 1642

Received By: *J. Mann* Date: 9-26-95 Time: 1000

Please submit sample results, copy of chain-of-custody form, and invoice to P. Westermann (D&M ATL)

Dames & Moore, Inc.
Chain-of-Custody
Asbestos Bulk Sampling

Six Piedmont Center
 3525 Piedmont Road
 Atlanta, Georgia 30305
 Phone: (404) 262-2915
 Fax: (404) 233-2271

Page 2 of 5

Sample Source & Client: Ft. Myers GMF

Signature: *B. C. W.*

Project Title: USPS - Asbestos Survey

Job No.: 03711-386-5008

Date	Sample Number	Sample Location	Type of Material Sampled	Analysis Requested
9-22-95	FMG-05-13	F1-121	2' X 2' WHITE CT	PLM
	✓ -14	F2-133	"	
	-03-15	F1-116 - AHU 7	PIPE INSULATION	
	✓ -16	"	"	
	-09-17	"	HVAC GASKET	
	-11-18	"	CAULK - GRAY	
	-17-19	"	CAULK - WHITE	
	-07-20	F1-103	CAULK -	
	✓ 21	B - Railway	"	
	✓ 22	A-129	"	
	-02-23	B-121	DRYWALL	
✓	✓ -24	A-143	"	✓

Turn-Around Time Requested: 72-hour (Normal) 48-hour 24-hour

Relinquished By: *B. C. W.* Date: 9-25-95 Time: 1642

Received By: *J. Mann* Date: 9-26-95 Time: 1000

Please submit sample results, copy of chain-of-custody form, and invoice to P. Westermann (D&M ATL)

Dames & Moore, Inc.
Chain-of-Custody
Asbestos Bulk Sampling

Six Piedmont Center
 3525 Piedmont Road
 Atlanta, Georgia 30305
 Phone: (404) 262-2915
 Fax: (404) 233-2271

Page 3 of 5

Sample Source & Client: P. Myrs GMF
 Signature: [Signature]
 Project Title: USPS - Asbestos Survey
 Job No.: 03711-386-5008

Date	Sample Number	Sample Location	Type of Material Sampled	Analysis Requested
9-22-95	FNG-14-25	B-121	WALL COVERING #1	PLM
	V-26	A-143	"	
	-08-27	"	2'x4' WHITE CT	
	-04-28	"	COVE BASE MASTIC	
	V-29	B-125	"	
	-06-30	"	12"x12' GRAY FT	
	31M	"	" - MASTIC	
	32	B-102	"	
	33M	"	" - MASTIC	
	05-34	"	2'x2' WHITE CT	
	V-35	A-129	"	
	V-13-34	B-134	CONDENSATE INSULATION Shield	✓

Turn-Around Time Requested: 72-hour (Normal) 48-hour 24-hour

Relinquished By: [Signature] Date: 9-25-95 Time: 1642

Received By: [Signature] Date: 9-26-95 Time: 1000

Please submit sample results, copy of chain-of-custody form, and invoice to P. Westermann (D&M ATL)

Dames & Moore, Inc.
Chain-of-Custody
Asbestos Bulk Sampling

Six Piedmont Center
 3525 Piedmont Road
 Atlanta, Georgia 30305
 Phone: (404) 262-2915
 Fax: (404) 233-2271

Page 4 of 5

Sample Source & Client: Ft. Myers GMF

Signature: *B. C. Carr*

Project Title: USPS - Asbestos Survey

Job No.: 03711-386 -5008

Date	Sample Number	Sample Location	Type of Material Sampled	Analysis Requested
9-22-95	FM603-37	B-1240	PIPE INSULATION	PLM
	-11-38	"	CAULK - GRAY	
	-10-39	A-143	PUTTY	
	-01-40	EZ-105	ASPHALT PLANK	
	41	WORKROOM - NORTH	" "	
	42	" N.E. CORNER	" "	
	43	B-130	" "	
	09-44	EZ-108	HVAC GASKET	
	45	"	" "	
	46	"	" "	
	11-47	"	CAULK	
✓	1-13-48	EZ-109	CONDENSATE INSUL SHIELD	✓

Turn-Around Time Requested: 72-hour (Normal) 48-hour 24-hour

Relinquished By: *B. C. Carr* Date: 9-25-95 Time: 1642

Received By: *J. Mann* Date: 9-26-95 Time: 1000

Please submit sample results, copy of chain-of-custody form, and invoice to P. Westermann (D&M ATL)

Dames & Moore, Inc.
Chain-of-Custody
Asbestos Bulk Sampling

Six Piedmont Center
 3525 Piedmont Road
 Atlanta, Georgia 30305
 Phone: (404) 262-2915
 Fax: (404) 238-2271

Page 5 of 5

Sample Source & Client: Ft. Myers GMF

Signature: *P.C.D.*

Project Title: USPS - Asbestos Survey

Job No.: 03711-386-5008

Date	Sample Number	Sample Location	Type of Material Sampled	Analysis Requested
9-22-95	FMG-13-49	E2-109	COND. INSUL. SHIELD	PLM
	-15-50	E1-104	" "	
	1-51	E1-105	" "	
	-08-52	B-132	2'x4' WHITE CT	
	-10-53	F2-118	PUTTY	
	-17-54	F1-116	CAULK - WHITE	
	-18-55	REAR - WEST	CAULK - EXTERIOR	
	1-56	" "	" "	

Turn-Around Time Requested: 72-hour (Normal) 48-hour 24-hour

Relinquished By: <i>P.C.D.</i>	Date: 9-25-95	Time: 1642
--------------------------------	---------------	------------

Received By: <i>J. Mann</i>	Date: 9-26-95	Time: 1000
-----------------------------	---------------	------------

Please submit sample results, copy of chain-of-custody form, and invoice to P. Westermann (D&M ATL)

Dames & Moore, Inc.
Chain-of-Custody
Asbestos Bulk Sampling

Six Piedmont Center
 3525 Piedmont Road
 Atlanta, Georgia 30305
 Phone: (404) 262-2915
 Fax: (404) 233-2271

Sample Source & Client: USPS - Ft. Myers GMF Signature: P. Westermann 10/2/95

Project Title: USPS - Asbestos Survey Job No.: 03711-386-5008

Date	Sample Number	Sample Location	Type of Material Sampled	Analysis Requested
	FMC-06-08		Floor tile	TEM

Turn-Around Time Requested: 72-hour (Normal) 48-hour 24-hour

Relinquished By: (see C-0-C# 38452) Date: Time:

Received By: P. Westermann Date: 10/2/95 Time: 1545

Please submit sample results, copy of chain-of-custody form, and invoice to P. Westermann (D&M ATL)

Dames & Moore, Inc.
Chain-of-Custody
Asbestos Bulk Sampling

Six Piedmont Center
 3525 Piedmont Road
 Atlanta, Georgia 30305
 Phone: (404) 262-2915
 Fax: (404) 233-2271

Sample Source & Client: FA. Myers, FL- GMF

Signature: *P. Westermann*

Project Title: USPS - Asbestos Survey

Job No.: 03711- 386 -5008 3/4/96

Date	Sample Number	Sample Location	Type of Material Sampled	Analysis Requested
	FMG - 15-50	Room E1-104	Condensate insulation shield	TEM

Turn-Around Time Requested: 72-hour (Normal) 48-hour 24-hour

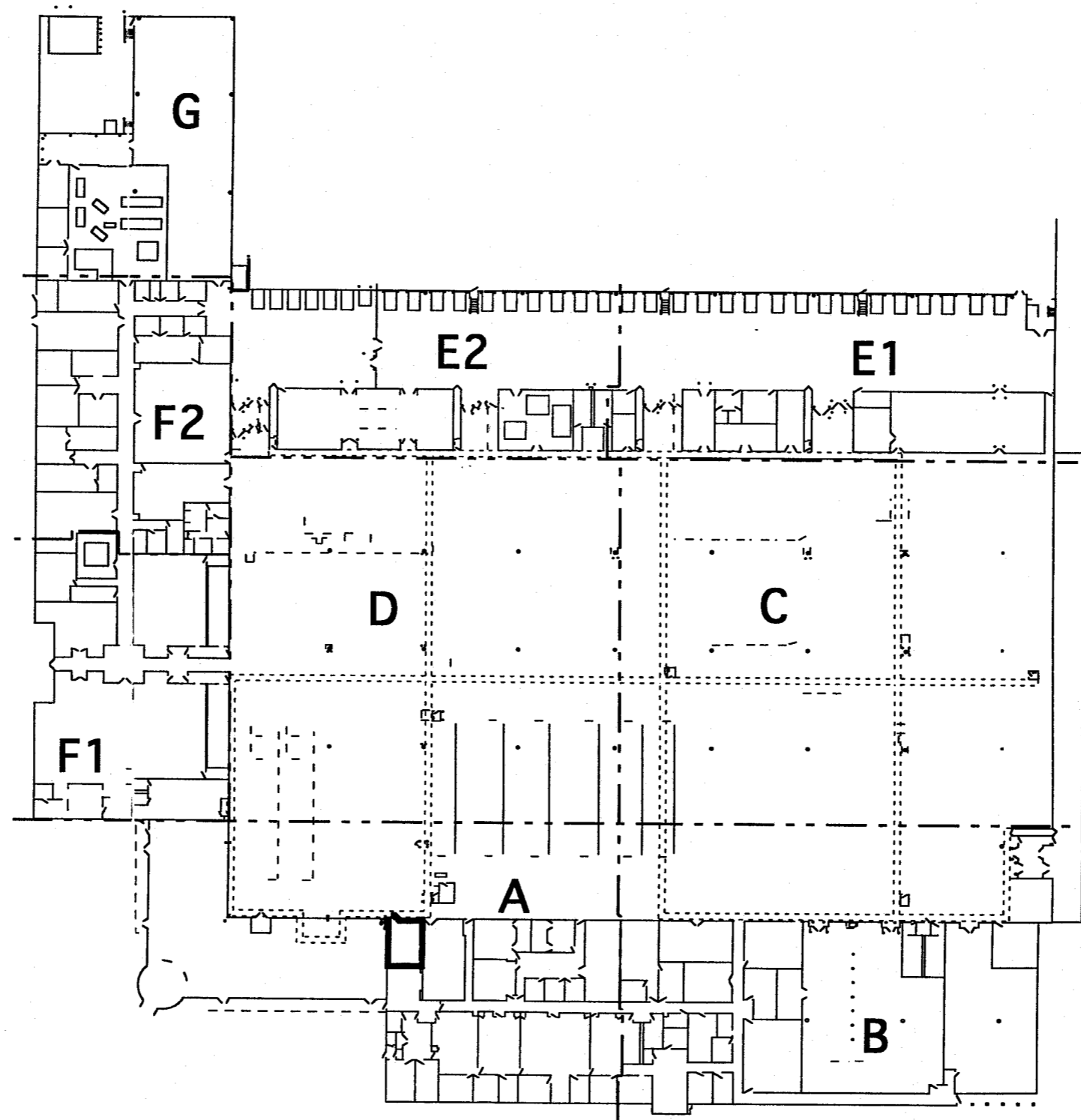
Relinquished By: _____ Date: _____ Time: _____
(Refer to C-O-C # 38452)

Received By: _____ Date: _____ Time: _____

Please submit sample results, copy of chain-of-custody form, and invoice to P. Westermann (D&M ATL)

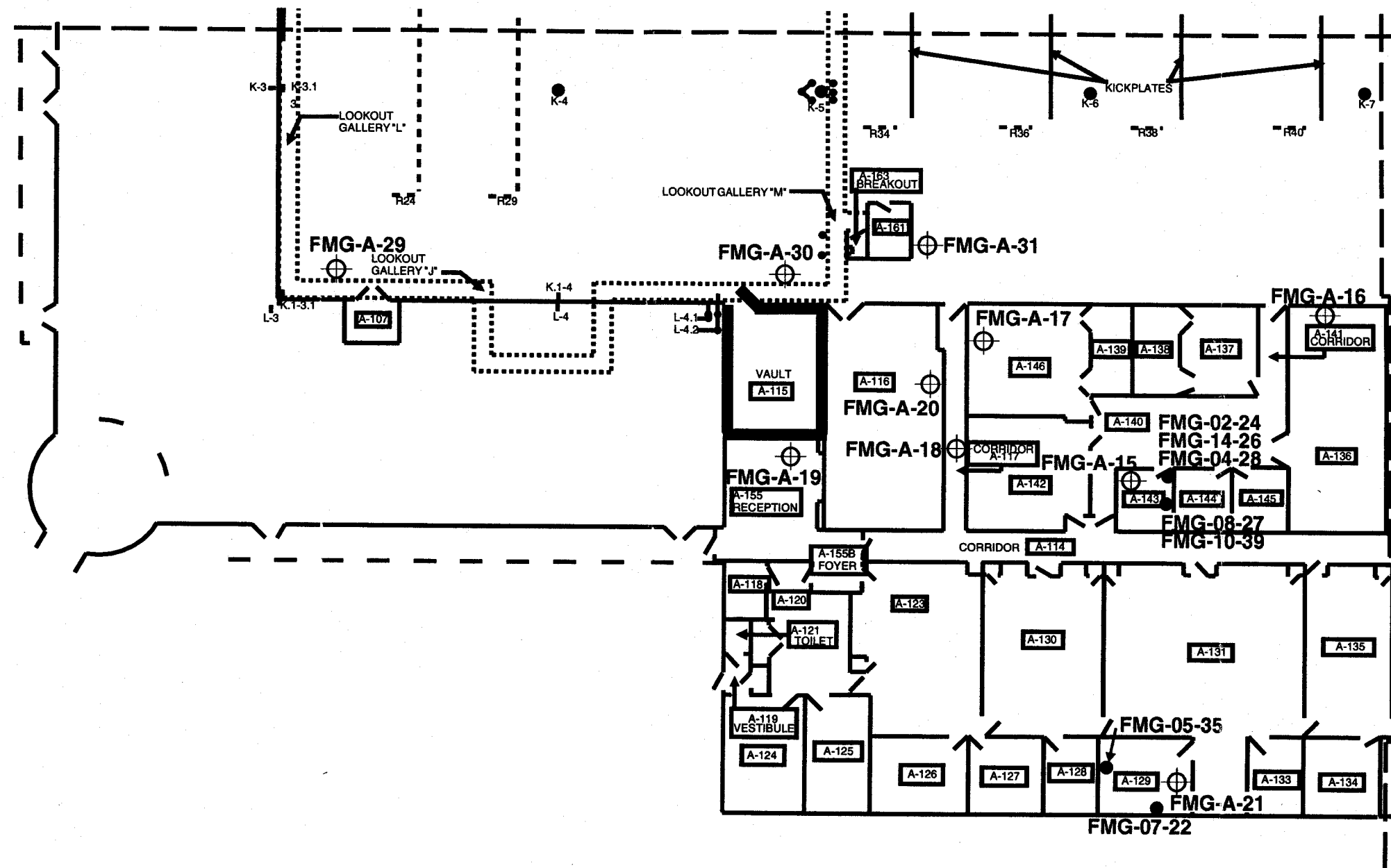
APPENDIX D

SAMPLE LOCATION DRAWING (FIGURE 1)



Scale: Estimated as approximately 1" = 80'

Figure 1
FACILITY LAYOUT
 Ft. Myers, Florida General Mail Facility
 113077-G11
 United States Postal Service
 Contract No. 475450-94-B-0322
 Work Order No. 134.00
 ACBM Survey and Assessment
 November 1995



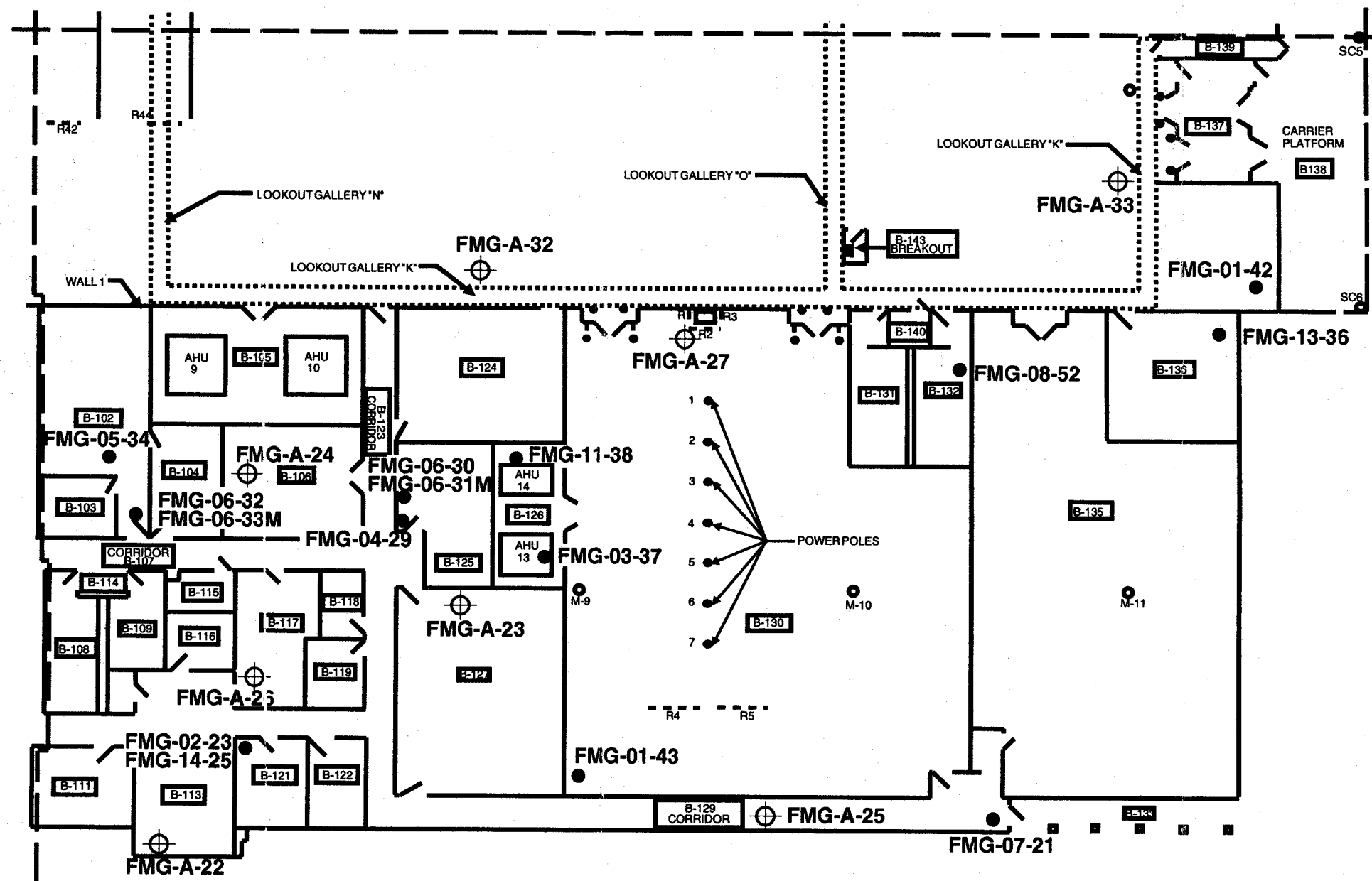
AREA A

Scale: Estimated as approximately 1" = 24'

LEGEND:

- ⊕ Air Sample Locations
- Bulk Sample Locations

Figure 1a
LOCATIONS OF BULK MATERIAL
AND AIR SAMPLES
 Ft. Myers, Florida General Mail Facility
 113077-G11
 United States Postal Service
 Contract No. 475450-94-B-0322
 Work Order No. 134.00
 ACBM Survey and Assessment
 November 1995



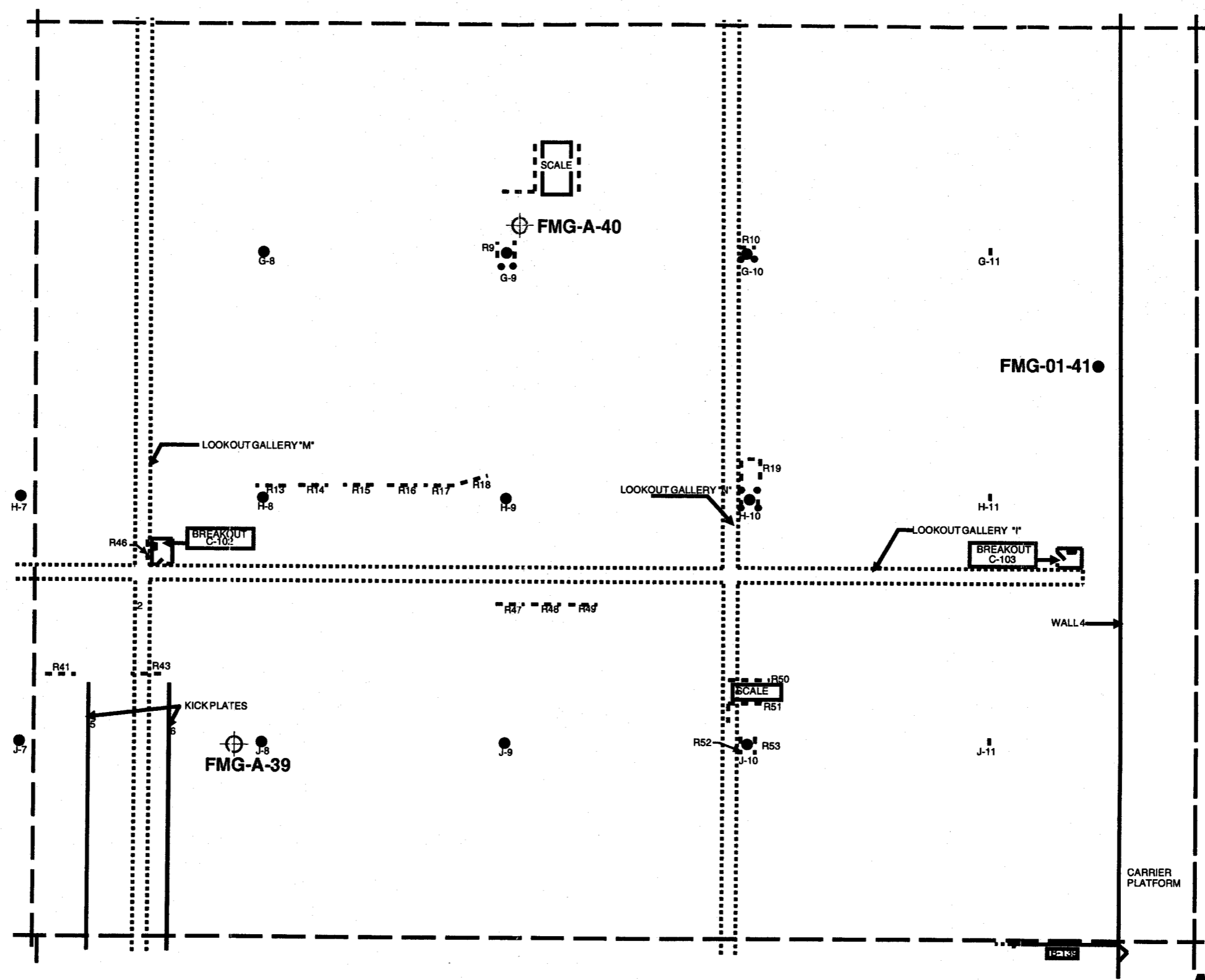
AREA B

Scale: Estimated as approximately 1" = 24'

LEGEND:

- ⊕ Air Sample Locations
- Bulk Sample Locations

Figure 1b
LOCATIONS OF BULK MATERIAL
AND AIR SAMPLES
 Ft. Myers, Florida General Mail Facility
 113077-G11
 United States Postal Service
 Contract No. 475450-94-B-0322
 Work Order No. 134.00
 ACBM Survey and Assessment
 November 1995



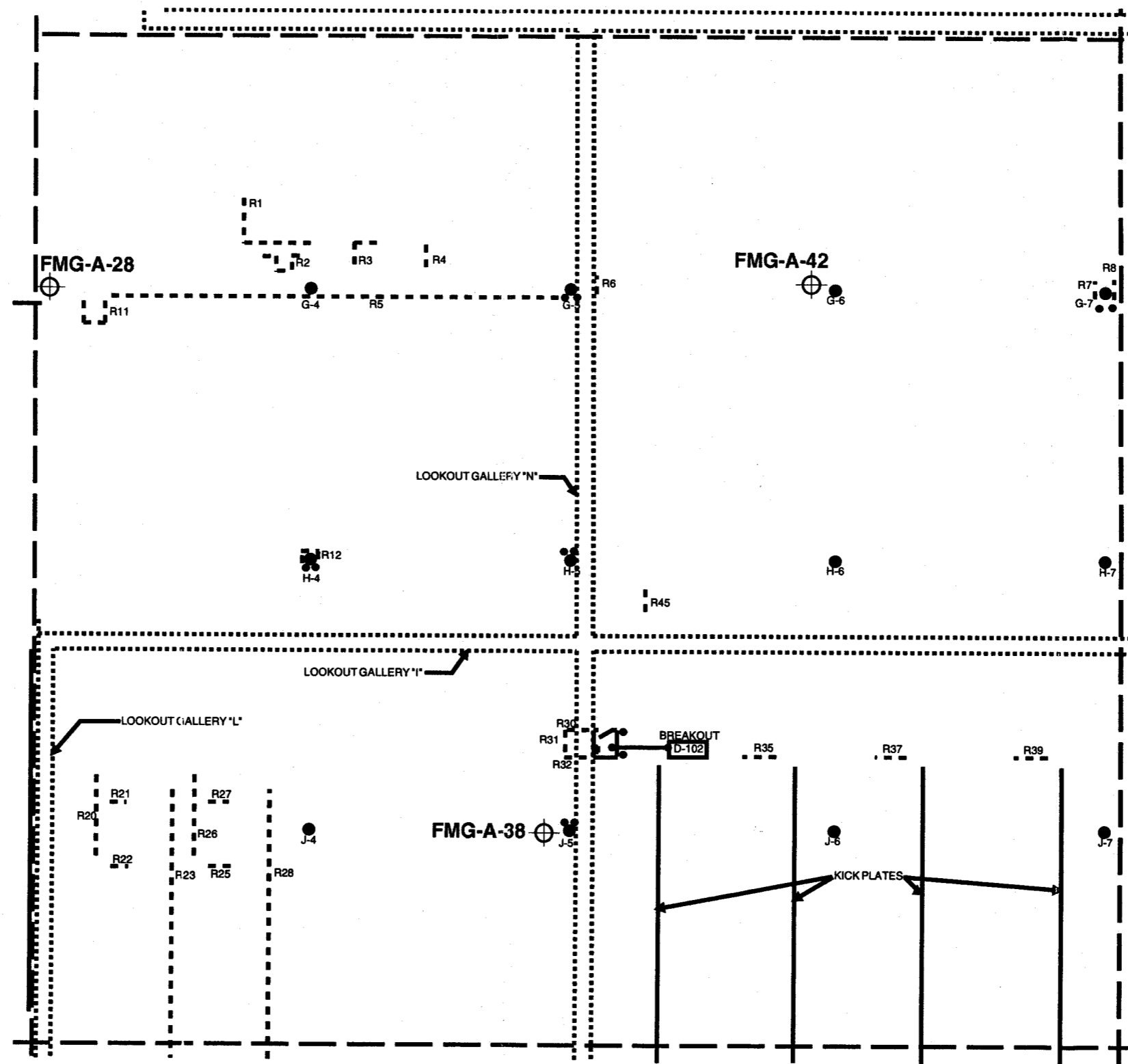
Scale: Estimated as approximately 1" = 24'

LEGEND:

- ⊕ Air Sample Locations
- Bulk Sample Locations

AREA C

Figure 1c
LOCATIONS OF BULK MATERIAL
AND AIR SAMPLES
 Ft. Myers, Florida General Mail Facility
 113077-G11
 United States Postal Service
 Contract No. 475450-94-B-0322
 Work Order No. 134.00
 ACBM Survey and Assessment
 November 1995
 DAMES & MOORE



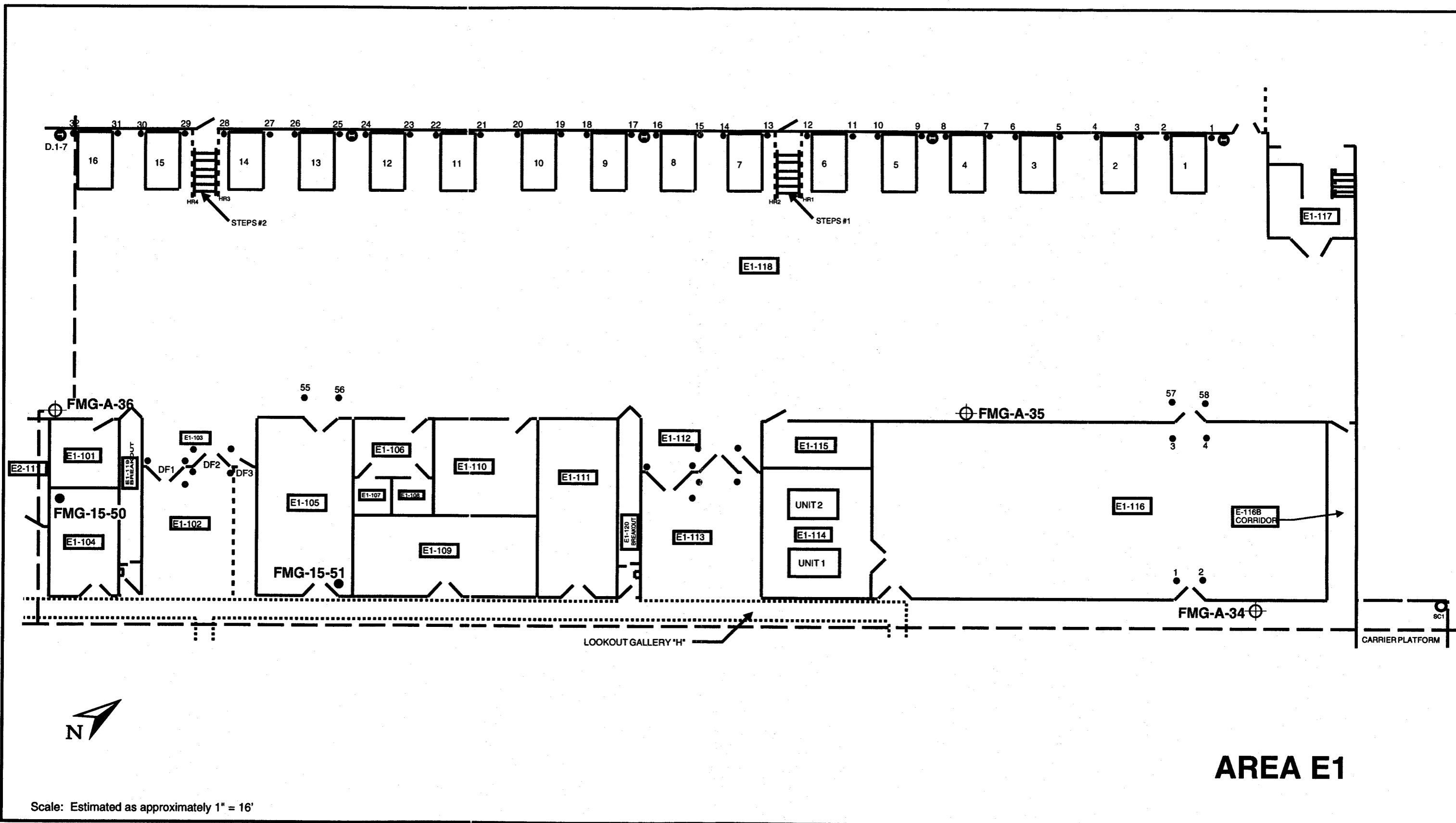
Scale: Estimated as approximately 1" = 24'

AREA D

LEGEND:

- ⊕ Air Sample Locations
- Bulk Sample Locations

Figure 1d
LOCATIONS OF BULK MATERIAL
AND AIR SAMPLES
 Ft. Myers, Florida General Mail Facility
 113077-G11
 United States Postal Service
 Contract No. 475450-94-B-0322
 Work Order No. 134.00
 ACBM Survey and Assessment
 November 1995



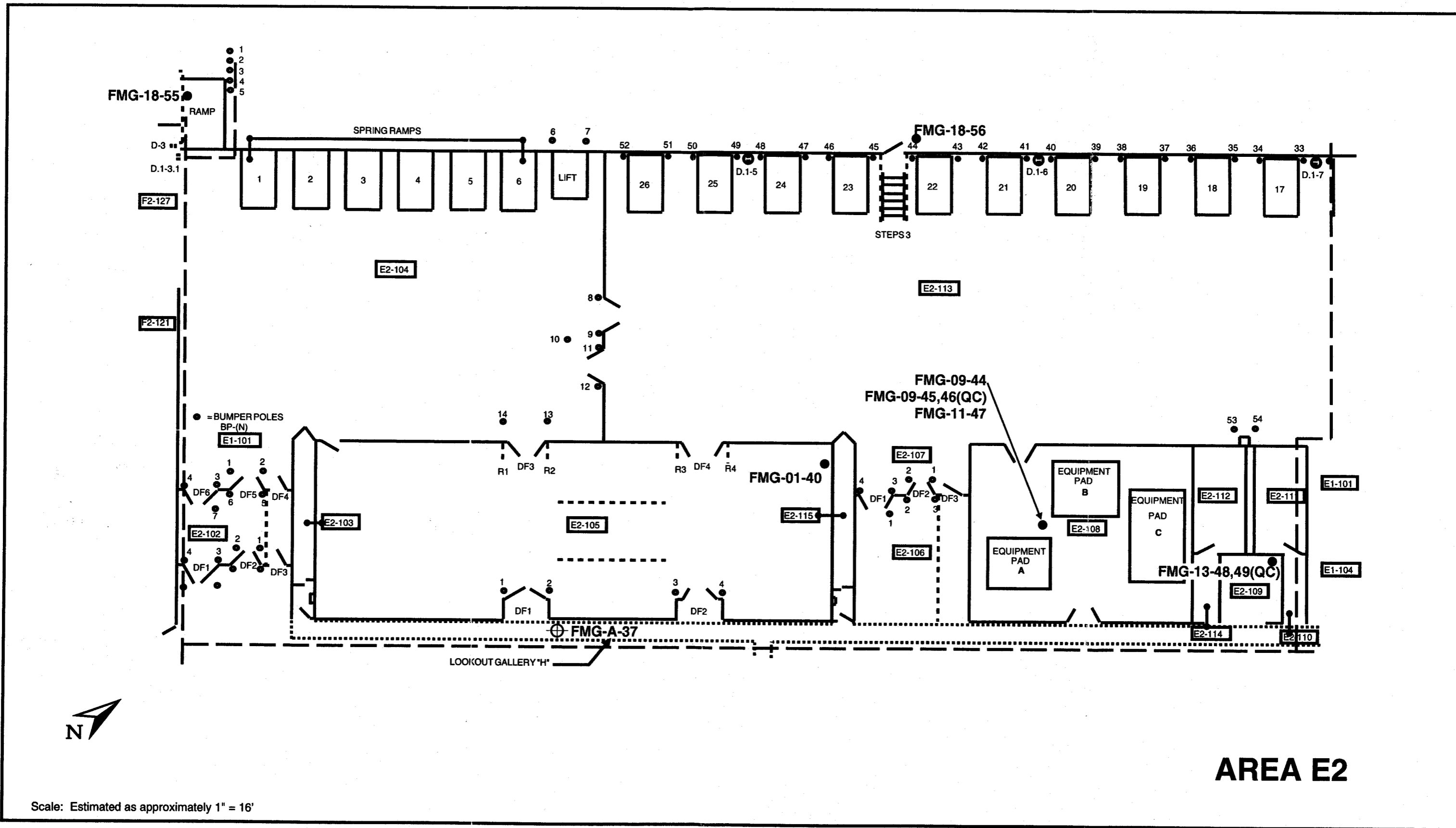
AREA E1

Scale: Estimated as approximately 1" = 16'

LEGEND:

- ⊕ Air Sample Locations
- Bulk Sample Locations

Figure 1e
LOCATIONS OF BULK MATERIAL
AND AIR SAMPLES
 Ft. Myers, Florida General Mail Facility
 113077-G11
 United States Postal Service
 Contract No. 475450-94-B-0322
 Work Order No. 134.00
 ACBM Survey and Assessment
 November 1995
 DAMES & MOORE

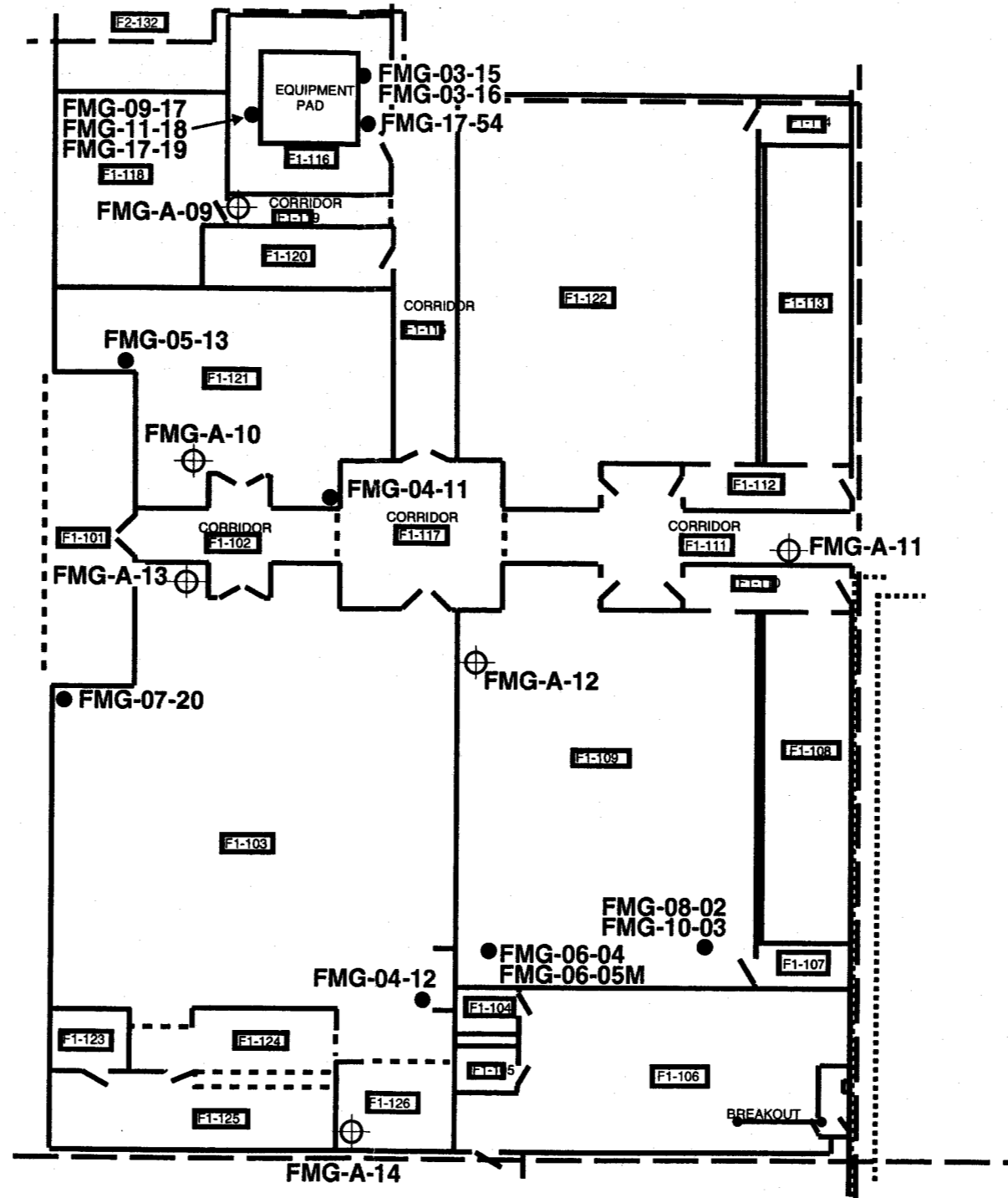


LEGEND:

- ⊕ Air Sample Locations
- Bulk Sample Locations
- (QC) Quality Control

AREA E2

Figure 1f
LOCATIONS OF BULK MATERIAL
AND AIR SAMPLES
 Ft. Myers, Florida General Mail Facility
 113077-G11
 United States Postal Service
 Contract No. 475450-94-B-0322
 Work Order No. 134.00
 ACBM Survey and Assessment
 November 1995
 DAMES & MOORE



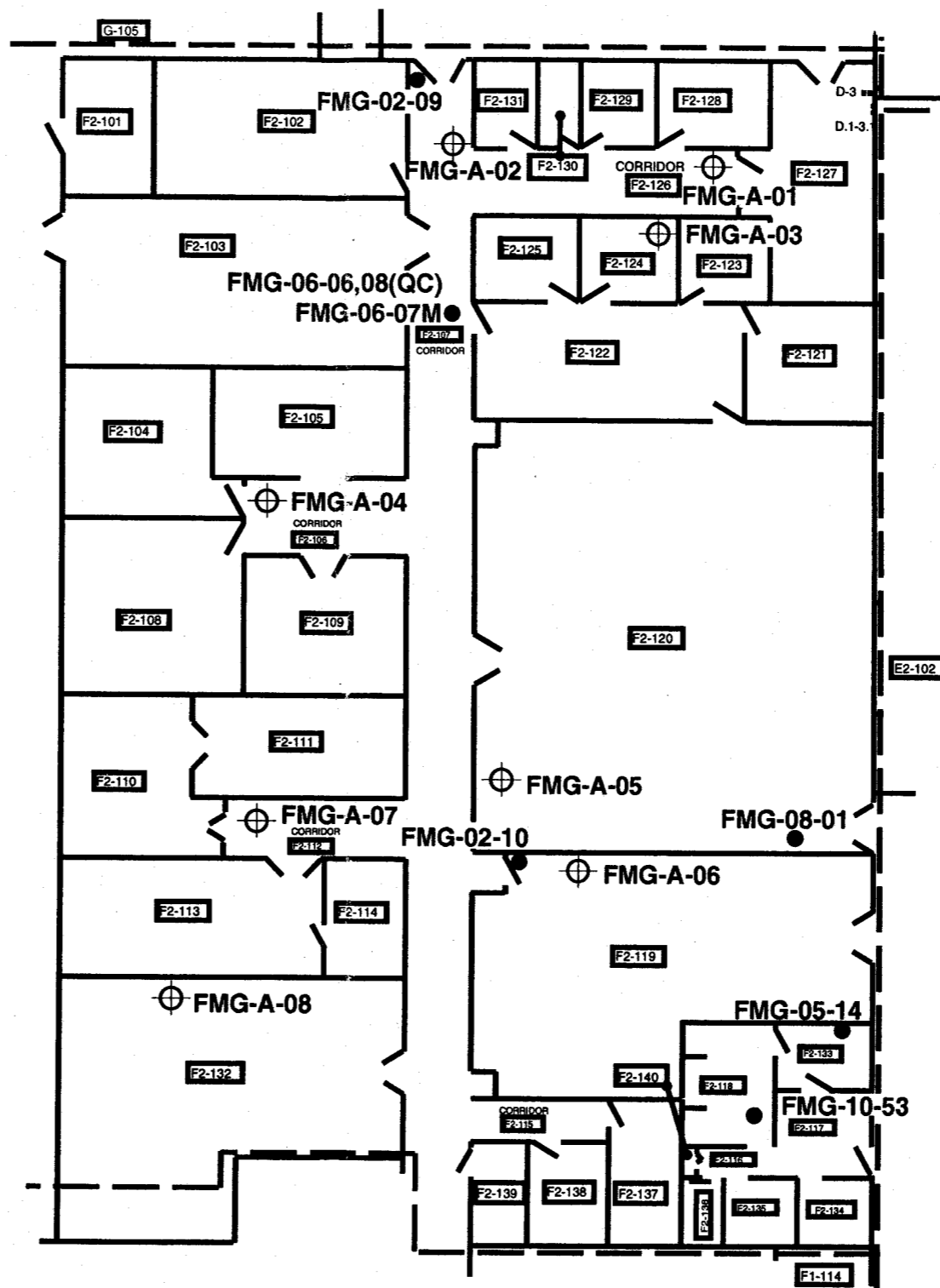
AREA F1

Scale: Estimated as approximately 1" = 20'

LEGEND:

- ⊕ Air Sample Locations
- Bulk Sample Locations

Figure 1g
LOCATIONS OF BULK MATERIAL
AND AIR SAMPLES
 Ft. Myers, Florida General Mail Facility
 113077-G11
 United States Postal Service
 Contract No. 475450-94-B-0322
 Work Order No. 134.00
 ACBM Survey and Assessment
 November 1995
 DAMES & MOORE



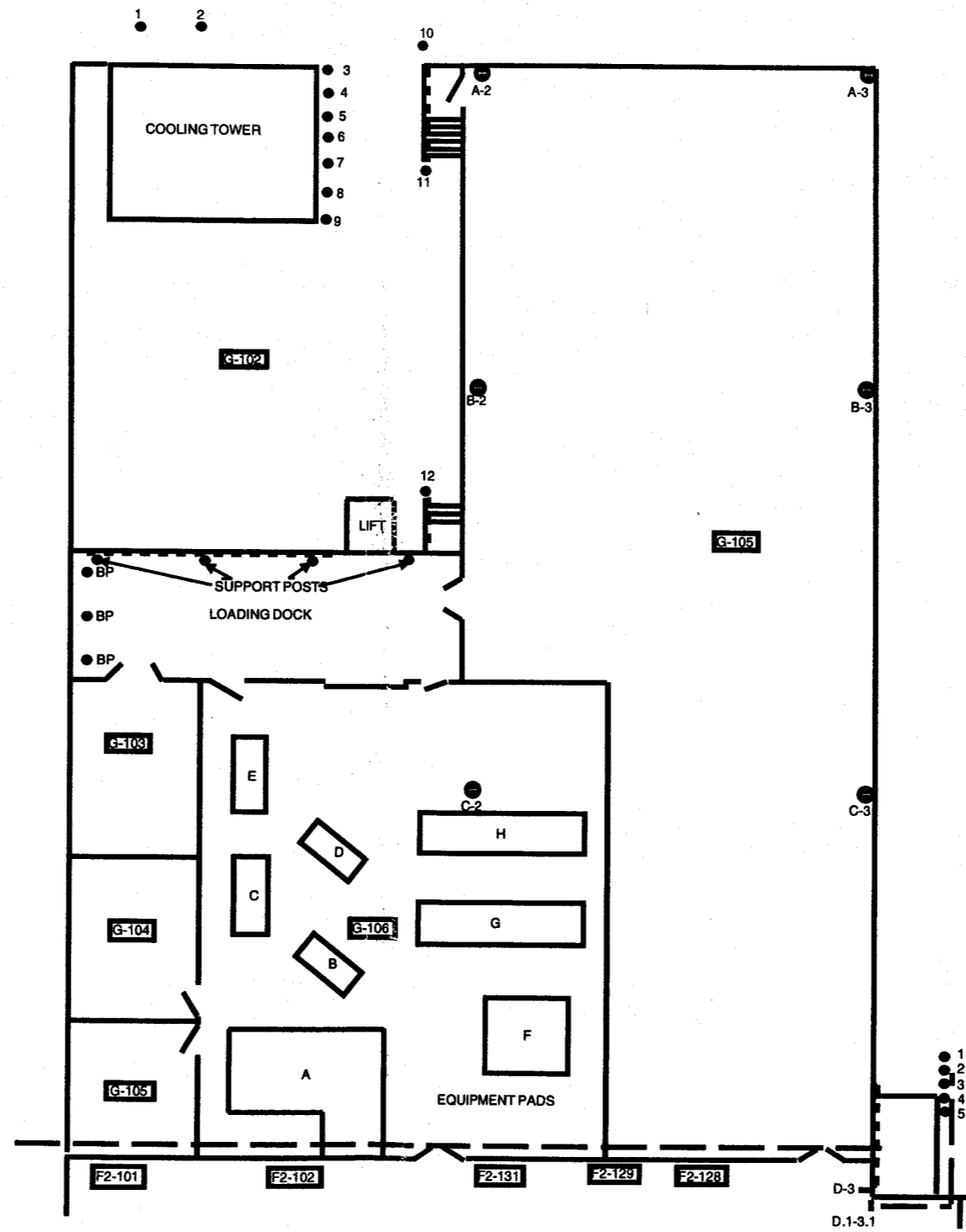
AREA F2

Scale: Estimated as approximately 1" = 20'

LEGEND:

- ⊕ Air Sample Locations
- Bulk Sample Locations
- (qc) Quality Control

Figure 1h
LOCATIONS OF BULK MATERIAL
AND AIR SAMPLES
 Ft. Myers, Florida General Mail Facility
 113077-G11
 United States Postal Service
 Contract No. 475450-94-B-0322
 Work Order No. 134.00
 ACBM Survey and Assessment
 November 1995
 DAMES & MOORE



Scale: Estimated as approximately 1" = 24'

AREA G

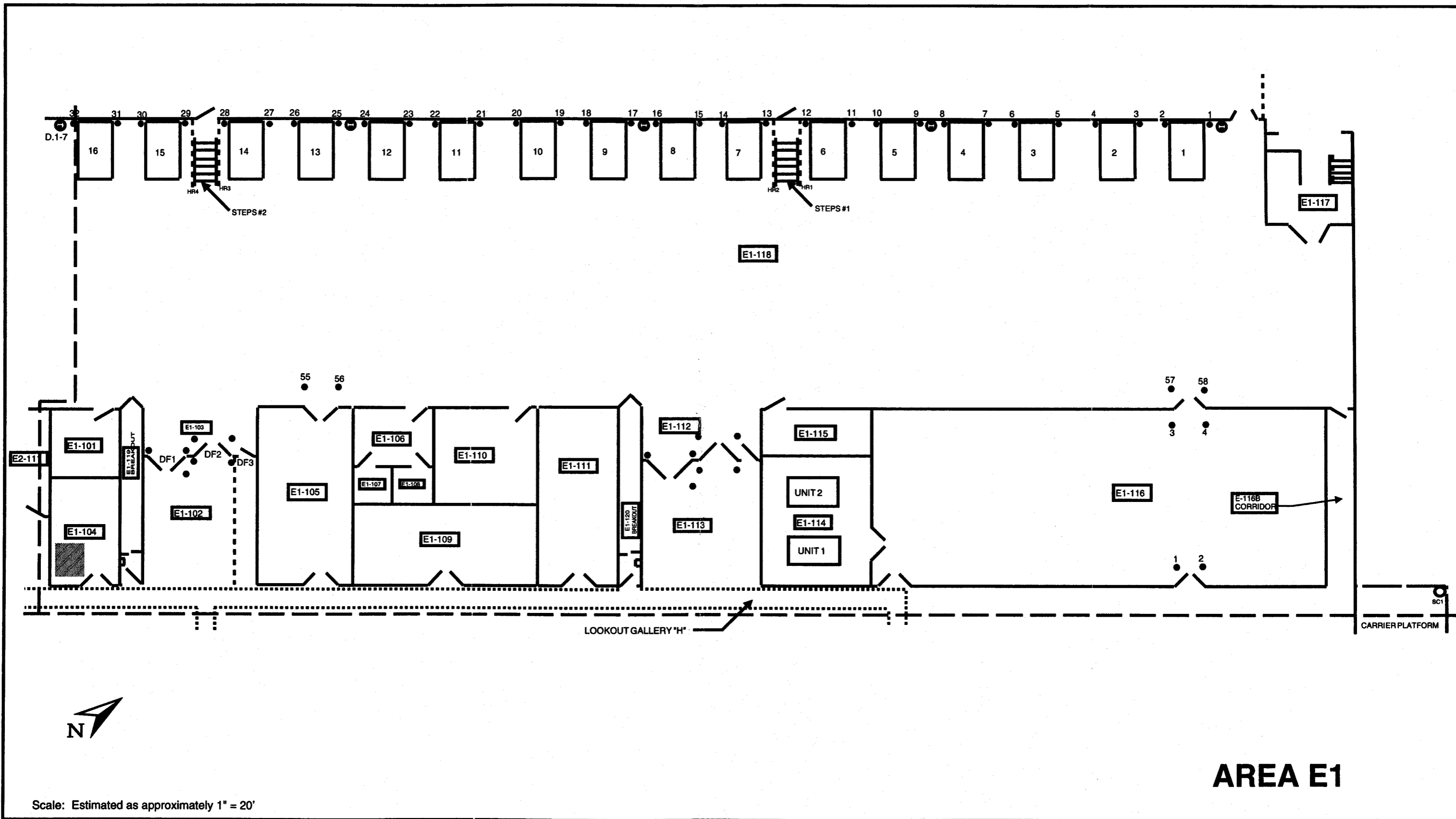
LEGEND:

- ⊕ Air Sample Locations
- Bulk Sample Locations

Figure 11
LOCATIONS OF BULK MATERIAL
AND AIR SAMPLES
 Ft. Myers, Florida General Mail Facility
 113077-G11
 United States Postal Service
 Contract No. 475450-94-B-0322
 Work Order No. 134.00
 ACBM Survey and Assessment
 November 1995

APPENDIX E

EXTENT OF MATERIAL DRAWING (FIGURE 2)



AREA E1

Scale: Estimated as approximately 1" = 20'

LEGEND:

- Homogeneous Area # 16: Fume Hood Panels (Assumed ACBM)
- Assumed ACBM Not Shown: Homogeneous Area #19: Roofing Materials(Entire Facility)

Figure 2
EXTENT OF ASBESTOS-CONTAINING BUILDING MATERIALS
 Ft. Myers, Florida General Mail Facility
 113077-G11
 United States Postal Service
 Contract No. 475450-94-B-0322
 Work Order No. 134.00
 ACBM Survey and Assessment
 November 1995
 DAMES & MOORE

APPENDIX F
BACKGROUND INFORMATION ON ASBESTOS

APPENDIX F
BACKGROUND INFORMATION ON ASBESTOS*

The Asbestos Issue

Asbestos fibers can cause serious health problems. If inhaled, they can cause diseases that disrupt the normal functioning of the lungs. Three specific diseases - asbestosis (a fibrous scarring of the lungs), lung cancer, and mesothelioma (a cancer of the lining of the chest or abdominal cavity) - have been linked to asbestos exposure. These diseases do not develop immediately after inhalation of asbestos fibers; it may be 20 years or more before symptoms appear.

In general, as with cigarette smoking and the inhalation of tobacco smoke, the more asbestos fibers a person inhales, the greater the risk of developing an asbestos-related disease. Most of the cases of severe health problems resulting from asbestos exposure have been experienced by workers who held jobs in industries such as shipbuilding, mining, milling, and fabricating, where they were exposed to very high levels of asbestos in the air, without benefit of the worker protections now afforded by law. Many of these same workers were also smokers. These employees worked directly with asbestos materials on a regular basis and, generally, for long periods of time as part of their jobs. Additionally, there is an increasing concern for the health and safety of construction, renovation, and building maintenance personnel, because of possible periodic exposure to elevated levels of asbestos fibers while performing their jobs.

Whenever we discuss the risk posed by asbestos, we must keep in mind that asbestos fibers can be found nearly everywhere in our environment (usually at very low levels). There is, at this time, insufficient information concerning health effects resulting from low-level asbestos exposure, either from exposures in buildings or from our environment. This makes it difficult to accurately assess the magnitude of cancer risk for building occupants, tenants, and building maintenance and custodial workers. Although in general the risk is likely to be negligible for occupants, health concerns remain, particularly for the building's custodial and maintenance workers. Their jobs are likely to bring them into close proximity to ACM, and may sometimes require them to disturb the ACM in the performance of maintenance activities. For these workers in particular, a complete and effective

O&M program can greatly reduce asbestos exposure. This kind of O&M program can also minimize asbestos exposures for other building occupants as well.

What is Asbestos?

The term "asbestos" describes six naturally occurring fibrous minerals found in certain types of rock formations. Of that general group, the minerals chrysotile, amosite, and crocidolite have been most commonly used in building products. When mined and processed, asbestos is typically separated into very thin fibers. When these fibers are present in the air, they are normally invisible to the naked eye. Asbestos fibers are commonly mixed during processing with a material that binds them together so that they can be used in many different products. Because these fibers are so small and light, they may remain in the air for many hours if they are released from ACM in a building. When fibers are released into the air they may be inhaled by people in the building.

Asbestos became a popular commercial product because it is strong, won't burn, resists corrosion, and insulates well. In the United States, its commercial use began in the early 1900's and peaked in the period from World War II into the 1970's. Under the Clean Air Act of 1970 the EPA has been regulating many asbestos-containing materials that, by EPA definition, are materials with more than 1 percent asbestos. The Occupational Safety and Health Administration's (OSHA) asbestos construction standard in section K, "Communication of hazards to employees," specifies labeling many materials containing 0.1 percent or more asbestos. In the mid-1970's several major kinds of asbestos materials, such as spray-applied insulation, fireproofing, and acoustical surfacing material, were banned by EPA because of growing concern about health effects, particularly cancer, associated with exposures to such materials.

In July 1989, EPA promulgated the Asbestos Ban and Phasedown Rule. The rule applies to new product manufacture, importation, and processing, and essentially bans almost all asbestos-containing products in the United States by 1997. This rule does not require removal of ACM currently in place in buildings.

Where is Asbestos Likely to be Found in Buildings?

In February 1988, the EPA released a report titled *EPA Study of Asbestos-Containing Materials in Public Buildings: A Report to Congress*. EPA found that "friable" (easily crumbled) ACM can be found in an estimated 700,000 public and commercial buildings. About 500,000 of those buildings are believed to contain at least some damaged asbestos, and some areas of significantly damaged ACM can be found in over half of them.

According to the EPA study, significantly damaged ACM is found primarily in building areas not generally accessible to the public, such as boiler and machinery rooms, where asbestos exposures generally would be limited to service and maintenance workers. Friable ACM, if present in air plenums, can lead to distribution of the material throughout the building, thereby possibly exposing building occupants. ACM can also be found in other building locations.

Asbestos in buildings has been commonly used for thermal insulation, fireproofing, and in various building materials, such as floor coverings and ceiling tile, cement pipe and sheeting, granular and corrugated paper wipe wrap, and acoustical and decorative treatment for ceilings and walls. Typically, it is found in pipe and boiler insulation and in spray-applied uses such as fireproofing and sound-deadening applications.

The amount of asbestos in these products varies widely (from approximately 1 percent to nearly 100 percent). The precise amount of asbestos in a product cannot always be accurately determined from labels or by asking the manufacturer. Nor can positive identification of asbestos be ascertained merely by visual examination. Instead, a qualified laboratory must analyze representative samples of the suspect material. Appendix G contains a sample list of some suspect materials.

When is Asbestos a Problem?

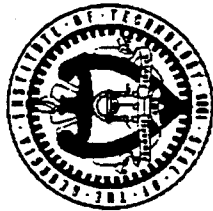
Intact and undisturbed asbestos materials do not pose a health risk. The mere presence of asbestos in a building does not mean the health of building occupants is endangered. ACM that is in good condition, and is not somehow damaged or disturbed, is not likely to release asbestos fibers into the

air. When ACM is properly managed, release of asbestos fibers into the air is prevented or minimized, and the risk of asbestos-related disease can be reduced to a negligible level.

However, asbestos materials can become hazardous when, due to damage, disturbance, or deterioration over time, they release fibers into building air. Under these conditions, when ACM is damaged or disturbed -- for example, by maintenance repairs conducted without proper controls - - elevated airborne asbestos concentrations can create a potential hazard for workers and other building occupants.

*Source: U.S. EPA, 1990, "Managing Asbestos in Place" (The Green Book), EPA 20T-2003, July.

APPENDIX G
PERSONNEL CERTIFICATIONS



The Georgia Institute of Technology

This is to certify that

Brian C. Queen

has attended and satisfactorily passed an examination covering the contents of a
Continuing Education Course entitled:

Inspecting Buildings for Asbestos Containing Materials (Initial Course for Building Inspectors)

meeting the Federal EPA AHERA Model Accreditation Plan Requirements
for Building Inspectors (TSCA Title II).

May 8-10, 1995


Dates of Attendance

May 10, 1995

Examination Date

May 10, 1996


Expiration Date


Robert D. Schmitter,
Course Director

Georgia Tech Research Institute
Electro-Optics, Environment and Materials Laboratory
Training Programs Office

Atlanta, GA 30332

Phone: (404) 894-7430; FAX: (404) 894-8281


Suzanne Willingham,
Exam Administrator

2278

Certificate Number

Clayton Environmental Consultants, Inc.

This certifies that

Brian C. Queen

has successfully completed the
Clayton Asbestos Training Course
(NIOSH 582 Equivalent)

conducted at Pleasanton, CA on November 5-8, 1987

November 18, 1987

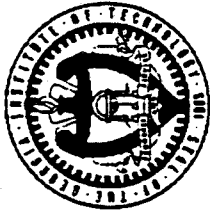
Date

Alice C. Zarran

Instructor

Robert Amighi
Coordinator,
Corporate Training Programs





The Georgia Institute of Technology

This is to certify that

Monti L. King

has attended and satisfactorily passed an examination covering the contents of a
Continuing Education Course entitled:

Managing Asbestos in Buildings (Initial Course for Asbestos Management Planners)

meeting the Federal EPA AHERA Model Accreditation Plan Requirements
for Asbestos Management Planners (TSCA Title II).

March 2-3, 1995

Dates of Attendance

March 3, 1995

Examination Date

March 3, 1996

Expiration Date

Vicki H. Ainslie

Vicki H. Ainslie,
Course Director

Matthew Malok

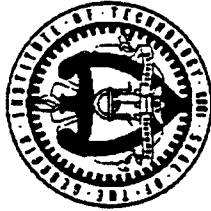
Matthew Malok,
Exam Administrator

1654

Certificate Number

Georgia Tech Research Institute
Electro-Optics, Environment and Materials Laboratory
Training Programs Office
Atlanta, GA 30332

Phone: (404) 894-7430; FAX: (404) 894-8281



The Georgia Institute of Technology

This is to certify that

Monti L. King

has attended and satisfactorily passed an examination covering the contents of a
Continuing Education Course entitled:

Inspecting Buildings for Asbestos Containing Materials (Initial Course for Building Inspectors)

meeting the Federal EPA AHERA Model Accreditation Plan Requirements
for Building Inspectors (TSCA Title II).

Feb. 27 - Mar. 1, 1995

Dates of Attendance

March 1, 1995

Examination Date

March 1, 1996

Expiration Date

Vicki H. Ainslie
Vicki H. Ainslie, Course Dir.

Matthew Malok
Matthew Malok, Exam Admin.

Georgia Tech Research Institute
Electro-Optics, Environment and Materials Laboratory
Training Programs Office
Atlanta, GA 30332

Phone: (404) 894-7430; FAX: (404) 894-8281

2217

Certificate Number

AC# 2986681 STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION
ASBESTOS

DATE	LICENSE NO.	BATCH NO.
10/31/94	IA 0000031	94010694

THE ASBESTOS CONSULTANT
NAMED BELOW IS LICENSED
UNDER THE PROVISIONS OF CHAPTER 469 F.S., FOR THE YEAR
EXPIRING NOV 30, 1996

ESTEVEZ, FRANCISCO JAVIER
9955 WESTVIEW DR #227
POMPANO BEACH FL 33076-2526


LAWTON CHILES
GOVERNOR

DISPLAY IN A CONSPICUOUS PLACE


GEORGE STUART, JR.
SECRETARY, D.B.P.R.

APPENDIX H
GLOSSARY/DEFINITION OF TERMS

APPENDIX H

GLOSSARY/DEFINITION OF TERMS

Acoustic Tile: Sound absorbing finishing material mill-formulated for application in areas where a reduction in sound reverberation or noise intensity is desired.

ACBM (asbestos-containing building material): Building materials that contain more than 1 percent asbestos.

ACM (asbestos-containing material): Any material containing more than 1 percent asbestos.

Adequately Wet: Adequately wet means sufficiently mix or penetrate with liquid to prevent the release of particulates.

Air Monitoring: The process of measuring the fiber content of a specific volume of air.

Amended Water: Water to which a surfactant has been added for use in wetting ACBM to control asbestos fibers.

Amosite: A type of asbestos that is a variety of the amphibole mineral group. Characteristically, its fibers are short, rod-like. Amosite is more typically used in thermal system insulations.

Asbestos: Chrysotile, amosite, crocidolite, tremolite asbestos, anthophyllite asbestos, actinolite asbestos and any of these minerals that has been chemically treated and/or altered.

AHERA (Asbestos Hazard Emergency Response Act): An EPA regulation published in the October 30, 1987 Federal Register covering asbestos-containing materials in schools.

Asbestos O&M Work: Cleaning, maintenance, repair, or renovation work involving asbestos-containing materials where the intent of the activity is not to remove asbestos.

Chrysotile: A type of asbestos that is a highly fibrous, silky variety of serpentine. Characteristically, its fibers are long, white, and silky.

Decorative Acoustic Finish: Finishing material mill-formulated and spray applied up to about 3/8" (10 mm) thick over gypsum wallboard. Material has a rough surface and is similar in appearance to acoustic plaster but is not designed for sound absorption.

Drop Cloth: A layer of polyethylene on the floor of a work area to protect the floor below from contamination and to facilitate the cleanup of dust or debris generated during the work.

Encapsulant: A material that surrounds or embeds asbestos fibers in an adhesive matrix, to prevent release of fibers.

EPA (United States Environmental Protection Agency)

Fireproofing: Material applied to structural elements or systems that provides increased fire resistance, usually serving no structural function. This material is typically applied using spray equipment.

Friable: Readily crumbled; brittle.

Friable Asbestos: (See "RACM")

Functional Space: A room or group of rooms or homogeneous areas that have been designated by a person accredited to prepare management plans, design abatement projects, or perform response actions. For the purposes of this project, functional spaces were identified as single offices or groups of similar offices, the main work floor, mechanical room, break room, locker rooms, loading dock areas, mezzanines, observation galleries, and other such similar locations.

Hazard Assessment: A process whereby the potential hazards posed due to the presence of ACM in a facility are assessed.

Homogeneous Area: An area of surfacing material, thermal system insulation material, or miscellaneous material that is uniform in color and in texture. For the purposes of this project, a homogeneous area consists of a group of offices or rooms with similar ceiling tile, insulation on various piping and mechanical systems, areas of similar floor tile, etc.

ID (Sample Identification Number): Unique sample identification number assigned to a discrete sample.

MCE (Mixed Cellulose Ester Filters): A type of filter used in a sample cassette for the collection of an air sample to measure airborne fiber concentrations.

Miscellaneous ACM: Interior asbestos-containing building material on structural components, structural members or fixtures, such as floor and ceiling tiles; does not include surfacing material or thermal system insulation.

NESHAP (National Emission Standard for Hazardous Air Pollutants): EPA Rules under the Clean Air Act.

NIOSH (National Institute for Occupational Safety and Health): Established by the Occupational Safety and Health Act of 1970. Primary functions of NIOSH are to conduct research, issue technical information, and certify respirators.

National Voluntary Laboratory Accreditation Program (NVLAP): National Voluntary Laboratory Accreditation Program. A quality assurance program for laboratories that analyze bulk asbestos samples.

O&M (Operations and Maintenance Program): A program of work practices to maintain ACM in good condition, ensure cleanup of asbestos fibers previously released, and prevent further release by minimizing and controlling ACM disturbance or damage.

OSHA (Occupational Health & Safety Administration)

PCM (Phase Contrast Microscopy): A method of analysis using a light microscope, used to find the concentration of airborne fibers. Does not distinguish among asbestos and other fibers. Used by OSHA to find personal exposures, and by EPA to find area levels for AHERA project clearance.

Plenum: Any space to convey air in a building or structure. The space above a suspended ceiling is often used as an air plenum. This term is also used in the work practices to refer to spaces above a ceiling not used to convey air.

PLM (Polarized Light Microscopy): A method of analysis using a light microscope to find the chemical or mineral types of samples, including the concentration of asbestos in bulk materials. Used by EPA for AHERA and NESHAP, and by OSHA to see if asbestos is involved in a project.

QA (Quality Assurance) Program: An overall program that formalizes the preparation and control of project documents, review of technical procedures and activities, training, chain-of-custody, etc.

QC (Quality Control) Sample: Duplicate sample collected at the same location as the field sample. The duplicate and field sample results are compared to evaluate field and laboratory precision.

RACM (Regulated ACM): As defined by NESHAP in the November 20, 1990 Federal Register, regulated asbestos-containing material (RACM) means (a) friable asbestos material (b) Category I nonfriable ACM that has become friable (c) Category I nonfriable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading, or (d) Category II nonfriable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations regulated by this subpart.

"Cutting" means to penetrate with a sharp-edged instrument and includes sawing, but does not include shearing, slicing, or punching.

"Grinding" means to reduce powder or small fragments and includes mechanical clipping or drilling.

Friable asbestos material means any material containing more than 1 percent asbestos as determined using the method specified under AHERA (40 CFR Part 763, Subpart F, Appendix A, Section 1, Polarized Light Microscopy) that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. If the asbestos content is less than 10 percent as determined by a method other than point counting by polarized light microscopy, verify the asbestos content by point counting using polarized light microscopy.

Category I nonfriable asbestos-containing material (ACM) means asbestos-containing packings, gaskets, resilient floor covering and asphalt roofing products containing more than 1 percent asbestos as determined using the method specified under AHERA.

Category II nonfriable ACM means any material, excluding Category I nonfriable ACM, containing more than 1 percent asbestos as determined using the methods specified under AHERA, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

Repair: Returning damaged ACM to an undamaged condition or to an intact state so as to prevent fiber release.

Rotameter: A device used to measure the flow rate of air sampling equipment.

Surfacing ACM: Asbestos-containing material that is sprayed on, troweled on, or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing materials on structural member, or other materials on surfaces for acoustical, fireproofing, or other purposes.

Surfactant: A chemical wetting agent added to water to improve penetration, thus reducing the quantity of water required for a given operation or area.

TSI (Thermal System Insulation): Thermal system insulation - asbestos-containing material applied to pipes, fittings, boilers, breeching, tanks, ducts or other interior structural components to prevent heat loss or gain or water condensation.

TEM (Transmission Electron Microscopy): A method of analysis using an electron microscope, used to find and analyze the concentration of airborne or bulk asbestos fibers and structures. Distinguishes among asbestos and other materials; can detect smaller asbestos fibers than does PCM. Used by EPA to find area concentrations for large AHERA project clearance.

APPENDIX I
AIR MONITORING RESULTS

AIR MONITORING RESULTS
FOR
FT. MYERS, FLORIDA GENERAL MAIL FACILITY
(FINANCE/SUB. No. 113077-G11)

Under contract to the United States Postal Service, Dames & Moore, Inc. performed an asbestos-containing building material survey and assessment of the Ft. Myers, Florida General Mail Facility (Finance/Sub. No. 113077-G11) on September 21 and 22, 1995. The survey consisted of bulk sampling of suspected asbestos-containing materials and air monitoring.

A total of 41 air samples were collected during the bulk sampling portion of the survey. A field blank sample was also submitted for analysis. These air samples were analyzed using phase contrast microscopy (PCM) in compliance with the NIOSH Method 7400, Revision 3 (5/15/89), "A" counting rules. In addition, the sample having the highest fiber concentration was also analyzed using transmission electron microscopy (TEM) in accordance with NIOSH 7402, Revision #1 (5/15/89) Method.

The air sample locations and the corresponding laboratory results are presented on Table I-1. The results of the PCM analyses indicate that the airborne fiber concentrations were less than or equal to 0.025 fibers per cubic centimeter (f/cc) of air. The TEM analysis indicated that the structure concentration in the sample with the highest PCM result was less than 0.0090 structures per cubic centimeter. The unopened field blank was reported to contain 0 fibers per 100 fields. Based on the PCM and TEM data, it can be concluded that the airborne asbestos fiber level in the facility during the survey did not exceed the permissible exposure limit of 0.1 f/cc established by the Occupational Safety and Health Administration.

The following pages present Table I-1, which is an air sample log; and copies of the laboratory reports and chain-of-custody forms for the air samples.

TABLE I-1

**AIR SAMPLE RESULTS
UNITED STATES POSTAL SERVICE
FT. MYERS, FLORIDA GENERAL MAIL FACILITY
(Finance/Sub. No. 113077-G11)**

Sample Identification	Location	Sample Type	Fiber Concentration (f/cc)	Asbestos Fiber Concentration (s/cc)
FMG-A-01	Corridor F2-126	PCM	<0.010	NA
FMG-A-02	Corridor F2-107	PCM	<0.010	NA
FMG-A-03	Room F2-124	PCM	<0.010	NA
FMG-A-04	Corridor F2-106	PCM	0.010	NA
FMG-A-05	Room F2-120	PCM	0.010	NA
FMG-A-06	Room F2-119	PCM	0.012	NA
FMG-A-07	Corridor F2-112	PCM	<0.010	NA
FMG-A-08	Room F2-132	PCM	0.010	NA
FMG-A-09	Corridor F1-119	PCM	<0.010	NA
FMG-A-10	Room F1-121	PCM	<0.010	NA
FMG-A-11	Corridor F1-111	PCM	0.012	NA
FMG-A-12	Room F1-109	PCM	<0.010	NA
FMG-A-13	Room F1-103	PCM	<0.010	NA
FMG-A-14	Room F1-126	PCM	<0.010	NA
FMG-A-15	Room A-143	PCM	<0.010	NA
FMG-A-16	Room A-136	PCM	<0.010	NA
FMG-A-17	Room A-146	PCM	<0.010	NA
FMG-A-18	Corridor A-117	PCM	0.015	NA
FMG-A-19	Room A-155	PCM	<0.010	NA
FMG-A-20	Room A-116	PCM	<0.010	NA
FMG-A-21	Room A-129	PCM	<0.010	NA
FMG-A-22	Room B-113	PCM	<0.010	NA
FMG-A-23	Room B-127	PCM	<0.010	NA
FMG-A-24	Room B-106	PCM	0.013	NA
FMG-A-25	Corridor B-129	PCM	<0.010	NA
FMG-A-26	Room B-117	PCM	<0.010	NA

TABLE I-1

**AIR SAMPLE RESULTS
UNITED STATES POSTAL SERVICE
FT. MYERS, FLORIDA GENERAL MAIL FACILITY
(Finance/Sub. No. 113077-G11)**

Sample Identification	Location	Sample Type	Fiber Concentration (f/cc)	Asbestos Fiber Concentration (s/cc)
FMG-A-27	Room B-130	PCM	<0.010	NA
FMG-A-28	Workroom	PCM	<0.010	NA
FMG-A-29	Workroom	PCM	0.015	NA
FMG-A-30	Workroom	PCM	0.014	NA
FMG-A-31	Workroom	PCM	0.019	NA
FMG-A-32	Workroom	PCM	0.022	NA
FMG-A-33	Workroom	PCM	0.016	NA
FMG-A-34	Workroom	PCM	0.021	NA
FMG-A-35	Room E1-118	PCM	0.025	NA
		TEM	NA	<0.0090
FMG-A-36	Room E1-118	PCM	0.020	NA
FMG-A-37	Workroom	PCM	0.023	NA
FMG-A-38	Workroom	PCM	0.019	NA
FMG-A-39	Workroom	PCM	0.019	NA
FMG-A-40	Workroom	PCM	<0.010	NA
FMG-A-41	Field Blank	PCM	0 fibers/ 100 fields	NA
FMG-A-42	Workroom	PCM	0.011	NA

PCM - Phase Contrast Microscopy
TEM - Transmission Electron Microscopy

NA - not applicable
f/cc - fibers per cubic centimeter
s/cc - structures per cubic centimeter

CERTIFICATE OF ANALYSIS

Dames & Moore **U.S.P.S.; Ft. Myers GMF** **DATE ANALYZED:** 09/28/95
 3525 Piedmont Road #500 **JOB NUMBER:** 03711-386-5008 **CHAIN OF CUSTODY #:** 38450
 Building 6 **SUBMITTED BY:** Dames & Moore **PERSON SUBMITTING:** Brian Queen
 Atlanta, GA 30305

ATTENTION: Patty Westermann

Blank sample(s) were submitted.

PHASE CONTRAST MICROSCOPY

DATE SAMPLED	AMA LAB NUMBER	CLIENT NUMBER	VOLUME SAMPLED (LITERS)	FIBERS PER MILLIMETER SQUARED	FIBERS PER CUBIC CENTIMETER	SAMPLE TYPE AND LOCATION
09/22/95	9539393	FMG-A-01	4035L	94.3	0.009	
09/22/95	9539394	FMG-A-02	3915L	79.0	0.008	
09/22/95	9539395	FMG-A-03	3765L	66.2	0.007	
09/22/95	9539396	FMG-A-04	3675L	99.4	0.010	
09/22/95	9539397	FMG-A-05	3555L	89.2	0.010	
09/22/95	9539398	FMG-A-06	3435L	104.5	0.012	
09/22/95	9539399	FMG-A-07	3405L	70.1	0.008	
09/22/95	9539400	FMG-A-08	3270L	82.8	0.010	
09/22/95	9539401	FMG-A-09	3150L	77.1	0.009	
09/22/95	9539402	FMG-A-10	3030L	13.4	<0.005	*

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CERTIFICATE OF ANALYSIS

Dames & Moore
3525 Piedmont Road #500
Building 6
Atlanta, GA 30305

U.S.P.S.; Ft. Myers GMF
03711-386-5008
Dames & Moore

DATE ANALYZED: 09/28/95
CHAIN OF CUSTODY #: 38450
PERSON SUBMITTING: Brian Queen

ATTENTION: Patty Westermann
Blank sample(s) were submitted.

PHASE CONTRAST MICROSCOPY

DATE SAMPLED	AMA LAB NUMBER	CLIENT NUMBER	VOLUME SAMPLED (LITERS)	FIBERS PER MILLIMETER SQUARED	FIBERS PER CUBIC CENTIMETER	SAMPLE TYPE AND LOCATION
09/22/95	9539403	FMG-A-11	2715L	82.8	0.012	
09/22/95	9539404	FMG-A-12	2700L	46.5	0.007	
09/22/95	9539405	FMG-A-13	2790L	33.8	0.005	
09/22/95	9539406	FMG-A-14	2670L	29.3	<0.005 *	
09/22/95	9539407	FMG-A-15	2790L	39.5	0.005	
09/22/95	9539408	FMG-A-16	2670L	54.8	0.008	
09/22/95	9539409	FMG-A-17	2610L	12.7	0.005	
09/22/95	9539410	FMG-A-18	2505L	96.2	0.015	
09/22/95	9539411	FMG-A-19	2310L	38.2	0.006	
09/22/95	9539412	FMG-A-20	2550L	26.1	<0.005 *	

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JOB SITE: U.S.P.S.; Ft. Myers GMF
JOB NUMBER: 03711-386-5008
SUBMITTED BY: Dames & Moore

DATE ANALYZED: 09/28/95
CHAIN OF CUSTODY #: 38450
PERSON SUBMITTING: Brian Queen

ATTENTION: Patty Westermann

Blank sample(s) were submitted.

PHASE CONTRAST MICROSCOPY

DATE SAMPLED	AMA LAB NUMBER	CLIENT NUMBER	VOLUME SAMPLED (LITERS)	FIBERS PER		SAMPLE TYPE AND LOCATION
				MILLIMETER SQUARED	CUBIC CENTIMETER	
09/22/95	9539413	FMG-A-21	2145L	16.6	<0.005 *	
09/22/95	9539414	FMG-A-22	2280L	15.3	<0.005 *	
09/22/95	9539415	FMG-A-23	2115L	15.3	<0.005 *	
09/22/95	9539416	FMG-A-24	1980L	64.3	0.013	
09/22/95	9539417	FMG-A-25	2010L	31.8	0.006	
09/22/95	9539418	FMG-A-26	1575L	18.5	0.005	
09/22/95	9539419	FMG-A-27	1860L	35.7	0.007	
09/22/95	9539420	FMG-A-28	2265L	50.3	0.009	
09/22/95	9539421	FMG-A-29	2235L	89.8	0.015	
09/22/95	9539422	FMG-A-30	2190L	77.1	0.014	

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3525 Piedmont Road #500
Building 6
Atlanta, GA 30305

JOB SITE: U.S.P.S.; Ft. Myers GMF
JOB NUMBER: 03711-386-5008
SUBMITTED BY: Dames & Moore

DATE ANALYZED: 09/28/95
CHAIN OF CUSTODY #: 38450
PERSON SUBMITTING: Brian Queen

ATTENTION: Patty Westermann

Blank sample(s) were submitted.

PHASE CONTRAST MICROSCOPY

DATE SAMPLED	AMA LAB NUMBER	CLIENT NUMBER	VOLUME SAMPLED (LITERS)	FIBERS PER MILLIMETER SQUARED	FIBERS PER CUBIC CENTIMETER	SAMPLE TYPE AND LOCATION
09/22/95	9539423	FMG-A-31	2100L	102.5	0.019	
09/22/95	9539424	FMG-A-32	2085L	117.8	0.022	
09/22/95	9539425	FMG-A-33	2025L	86.0	0.016	
09/22/95	9539426	FMG-A-34	1995L	108.9	0.021	
09/22/95	9539427	FMG-A-35	1950L	127.4	0.025	
09/22/95	9539428	FMG-A-36	1905L	98.7	0.020	
09/22/95	9539429	FMG-A-37	1875L	110.8	0.023	
09/22/95	9539430	FMG-A-38	1875L	94.3	0.019	
09/22/95	9539431	FMG-A-39	1800L	88.5	0.019	
09/22/95	9539432	FMG-A-40	1710L	29.3	0.007	

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An AIHA (# 8863), NVLAP (# 1143), & New York ELAP (# 10920) Accredited Laboratory

4485 Forbes Blvd., • Lanham MD 20706 • (301) 459-2640 • Toll Free (800) 346-0961 • Fax (301) 459-2643

CERTIFICATE OF ANALYSIS

Dames & Moore
 3525 Piedmont Road #500
 Building 6
 Atlanta, GA 30305

JOB SITE: U.S.P.S.; Ft. Myers GMF
 JOB NUMBER: 03711-386-5008
 SUBMITTED BY: Dames & Moore

DATE ANALYZED: 09/28/95
 CHAIN OF CUSTODY #: 38450
 PERSON SUBMITTING: Brian Queen

ATTENTION: Patty Westermann

Blank sample(s) were submitted.

PHASE CONTRAST MICROSCOPY

DATE SAMPLED	AMA LAB NUMBER	CLIENT NUMBER	VOLUME SAMPLED (LITERS)	FIBERS PER MILLIMETER SQUARED	FIBERS PER CUBIC CENTIMETER	SAMPLE TYPE AND LOCATION
09/22/95	9539433	FMG-A-41	OL	0.0	***** *	BLANK; 0 FIBERS PER 100 FIELDS
09/22/95	9539434	FMG-A-42	1650L	46.5	0.011	

* - THE LIMIT OF QUANTITATIVE DETECTION FOR AMA LABORATORIES
 Fiber counts were determined by methods described
 in NIOSH Analytical Method 7400, 'Fibers'. All personnel samples
 were analyzed following OSHA Reference Method.

Luis Bustillos
 Luis Bustillos

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CERTIFICATE OF ANALYSIS

Dames & Moore
 3525 Piedmont Road #500
 Building 6
 Atlanta, GA 30305
JOB SITE: U.S.P.S.; Ft. Myers GMP
JOB NUMBER: 03711-386-5008
SUBMITTED BY: Dames & Moore
DATE ANALYZED: 10/05/95
CHAIN OF CUSTODY #: 38450
PERSON SUBMITTING: Patty Westermann
ATTENTION: Patty Westermann
FILTER MEDIA: MCE
 25mm Dia (385 mm²) N/P Micron Pore

SUMMARY OF TRANSMISSION ELECTRON MICROSCOPY

DATE SAMPLED	AMA LAB NUMBER	CLIENT NUMBER	VOLUME SAMPLED (LITERS)	FILTER AREA ANALYZED (mm ²)	ANALYTICAL SENSITIVITY S/mm ²	NO. OF ASBESTOS STRUCTURES AND TYPE	NO. OF NON-ASBESTOS STRUCTURES	ASBESTOS CONCENTRATION S/mm ²	SAMPLE TYPE	SAMPLE LOCATION
09/22/95	9539427	FMG-A-35	1950	0.088	11 0.0022	0	0	<45	IWA	INSIDE WORK AREA; E1-118

Analytical procedures used meet or exceed the AHERA "Interim Transmission Electron Microscopy Analytical Methods" protocol described in Appendix A to Subpart E of 40 CFR Part 763.

Luis Bustillos
Luis Bustillos

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CHAIN OF CUSTODY

AIHA (#8863) NVLAP (#1143) NY ELAP (10920)
 4485 Forbes Blvd. • Lanham MD, 20706
 (301) 459-2640 • (800) 346-0961 • Fax(301) 459-2643

(Please Refer To This
 Number For Inquiries)

3945f

MAILING ADDRESS:

1. Submittal Date: September 26, 1995
 2. Client Name: Caribbe Mobile
 3. Street/RFD/P.O. Box: 35355 Palmont Rd.
 4. City, State, Zip: Atlanta GA 30305
 5. Contact Person: Patty Westerman

Job Name/location: USPS, 71 New York 6MF
 Job #: 03711-386-5008 P.O. #:
 Bill To:
 Phone #: _____ Fax: _____
 Submitted By: Brian Queen (Print) _____ (Signature)
 Time: 1000 AM IMMED. 24HR 48HR 72HR 5-DAY OTHER(Specify): _____

SAMPLE DATA:

1. Analysis Type: Asbestos Lead NOB - Whole (PLM/TEM) NOB Res. Ash (TEM) Other(Specify) _____
2. Total Number Of Samples: TEM _____ PCM 42 PLM _____ LEAD _____ OTHER(Specify) _____
3. ELECTRON MICROSCOPY SAMPLES:
 A. Filter Type: PC MCE B. Porosity: _____ Micron _____ C. Diameter: 37mm 25mm
4. Release Criteria/Analytical Sensitivity: 0.010 f/cc 0.005 f/cc AHERA % ASBESTOS SFT² OTHER
5. Field Sheet Attached? YES NO If No Then Please Complete The Following:

SAMPLE ANALYSIS INFORMATION

CLIENT ID NUMBER	AMA ID NUMBER	SAMPLE LOCATION	DATE	VOLUME (LITERS)	ANALYSIS								MATRIX				
					TEM	PCM	PLM	LEAD	OTHER	AIR	BLANK	BULK	WIPE	OTHER			
	<u>95391393</u>																

REPORTING DATA:

1. Verbal Results To Whom? Name: Patty Westerman Bone: _____ Beeper: _____
 2. Date Written Results Required: 10/1
LABORATORY STAFF ONLY (CUSTODY)
 1. Date/Time RCVD: 9/26/95 @ 1000 Via: USPS By(Print): Shani Mann Sign: SMann
 2. Date/Time Analyzed: _____ @ _____ By(Print): _____ Sign: _____
 3. Results Reported To: _____ Via: _____ Date: _____ / _____ / _____ Time: _____ Initials: _____
 4. Comments: _____

Dames & Moore, Inc.
Chain-of-Custody
Asbestos Air Sampling

Six Piedmont Center
 3525 Piedmont Road
 Atlanta, Georgia 30305
 Phone: (404) 262-2915
 Fax: (404) 233-2271

Page 1 of 7

Sample Source & Client: Ft. MYERS GMF

Signature: *B. C. D.*

Project Title: USPS - Asbestos Survey

Job No.: 03711-386-5008

Date	Sample Number	Sample Type	Sample Location	Calibration (LPM)	Time On/Time Off	Total Time (MIN)	Sample Volume (L)
9-22-95	FUG. A. 01	PCM	FZ. HAILWAY	15.	0920/1349	269	4035
	02		"		0926/1347	261	3915
	03		FZ. 124		0933/1344	251	3765
	04		FZ. HAILWAY		0937/1342	245	3675
	05		FZ. 120		0941/1338	237	3555
✓	06	✓	FZ. 119	✓	0944/1333	229	3435

Signature of Field Personnel *B. C. D.*

- Sample Types:
 P - Personnel
 FC - Final Clearance
 BG - Background
 PCM - Phase Contract Microscopy
 TEM - Transmission Electron Microscopy

72-Hour Turn-Around-Time
 Notify P. Westermann with Dames & Moore of any PCM > 0.1 f/cc;
 air samples may need to be reanalyzed by TEM. Do not analyze any
 samples by TEM until approval is received from Dames & Moore

Relinquished By: <i>B. C. D.</i>	Date: 9-25-95	Time: 1651
-------------------------------------	------------------	---------------

Received By: <i>Smann</i>	Date: 9-26-95	Time: 1030
------------------------------	------------------	---------------

Please submit sample results, copy of chain-of-custody form, and invoice to P. Westermann (D&M ATL)

Dames & Moore, Inc.
Chain-of-Custody
Asbestos Air Sampling

Six Piedmont Center
 3525 Piedmont Road
 Atlanta, Georgia 30305

Phone: (404) 262-2915
 Fax: (404) 233-2271

Page Lot 7

Sample Source & Client: *F. MYERS GMF*

Signature: *B. C. D.*

Project Title: USPS - Asbestos Survey

Job No.: 03711-386-5008

Date	Sample Number	Sample Type	Sample Location	Calibration (LPM)	Time On/Time Off	Total Time (MIN)	Sample Volume (L)
9-22-95	FMG-A-07	PCM	F2- HAILWAY	15.	0948/1335	227	3405
	08		F2-132		0957/1330	218	3270
	09		F2- HAILWAY		0956/1324	210	3150
	10		F1-121		0959/1321	202	3030
	11		F1- HAILWAY		1003/1304	181	2715
	12		F1-109		1007/1307	180	2700

Signature of Field Personnel

B. C. D.

Sample Types:

- P - Personnel
 - FC - Final Clearance
 - BG - Background
 - PCM - Phase Contract Microscopy
 - TEM - Transmission Electron Microscopy
- 72-Hour Turn-Around-Time**
 Notify P. Westermann with Dames & Moore of any PCM > 0.1 f/cc;
 air samples may need to be reanalyzed by TEM. Do not analyze any
 samples by TEM until approval is received from Dames & Moore

Relinquished By:	Date:	Time:
<i>B. C. D.</i>	9-25-95	1651

Received By:	Date:	Time:
<i>J. Mann</i>	9-26-95	1030

Please submit sample results, copy of chain-of-custody form, and invoice to P. Westermann (D&M ATL)

Dames & Moore, Inc.
Chain-of-Custody
Asbestos Air Sampling

Six Piedmont Center
 3525 Piedmont Road
 Atlanta, Georgia 30305
 Phone: (404) 262-2915
 Fax: (404) 233-2271

Page 3 of 7

Sample Source & Client: Ft. Myers GMF

Signature: *B. C. D.*

Project Title: USPS - Asbestos Survey

Job No.: 03711-380-5008

Date	Sample Number	Sample Type	Sample Location	Calibration (LPM)	Time On/Time Off	Total Time (MIN)	Sample Volume (L)
9-22-95	FMG-A-13	PCM	F1-103	15	1010/1316	186	2790
	14		" "		1014/1312	178	2670
	15		A-143		1429/1726	186	2790
	16		A-134		1427/1725	178	2670
	17		A-144		1434/1728	174	2610
✓	18	✓	A-Hallway	✓	1442/1729	167	2505

Signature of Field Personnel
B. C. D.

Sample Types:

- P - Personnel
 - FC - Final Clearance
 - BG - Background
 - PCM - Phase Contrast Microscopy
 - TEM - Transmission Electron Microscopy
- 72-Hour Turn-Around-Time
 Notify P. Westermann with Dames & Moore of any PCM > 0.1 f/cc;
 air samples may need to be reanalyzed by TEM. Do not analyze any
 samples by TEM until approval is received from Dames & Moore

Relinquished By:	Date:	Time:
<i>B. C. D.</i>	9-25-95	1651

Received By:	Date:	Time:
<i>J. Mann</i>	9-26-95	1030

Please submit sample results, copy of chain-of-custody form, and invoice to P. Westermann (D&M ATL)

Dames & Moore, Inc.
Chain-of-Custody
Asbestos Air Sampling

Six Piedmont Center
 3525 Piedmont Road
 Atlanta, Georgia 30305
 Phone: (404) 262-2915
 Fax: (404) 233-2271

Page 4 of 7

Sample Source & Client: **FT. MYERS GMF**

Signature: *P. C. D.*

Project Title: **USPS - Asbestos Survey**

Job No.: **03711-388-5008**

Date	Sample Number	Sample Type	Sample Location	Calibration (LPM)	Time On/Time Off	Total Time (MIN)	Sample Volume (L)
9-22-95	FMG-A-19	PCM	A-155	15	1450/1730	154	2310
	20		A-116		1504/1754	170	2550
	21		A-129		1509/1732	143	2145
	22		B-113		1515/1747	152	2280
	23		B-127		1524/1745	141	2115
	24		B-100	✓	1530/1742	132	1980

Signature of Field Personnel

P. C. D.

Sample Types:

- P - Personnel
 - FC - Final Clearance
 - BG - Background
 - PCM - Phase Contract Microscopy
 - TEM - Transmission Electron Microscopy
- 72-Hour Turn-Around-Time
 Notify P. Westermann with Dames & Moore of any PCM > 0.1 f/cc;
 air samples may need to be reanalyzed by TEM. Do not analyze any
 samples by TEM until approval is received from Dames & Moore

Relinquished By:	Date:	Time:
<i>P. C. D.</i>	9-25-95	1651

Received By:	Date:	Time:
<i>J. Mann</i>	9-26-95	1030

Please submit sample results, copy of chain-of-custody form, and invoice to P. Westermann (D&M ATL)

Dames & Moore, Inc.
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Asbestos Air Sampling

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 Atlanta, Georgia 30305
 Phone: (404) 262-2915
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Page 5 of 7

Sample Source & Client: *Gr. Myers GMP*

Signature: *[Signature]*

Project Title: USPS - Asbestos Survey

Job No.: 03711-384 -5008

Date	Sample Number	Sample Type	Sample Location	Calibration (LPM)	Time On/Time Off	Total Time (MIN)	Sample Volume (L)
9-22-95	FMG-A-25	PCM	B-HAILWAY	15	1535/1749	134	2010
	26		B-117		1558/1743	105	1575
	27		B-130		1517/1751	124	1860
	28		WORK ROOM - D		1811/2042	151	2265
	29		" "		1814/2043	149	2235
✓	✓	✓	" "	✓	1819/2045	146	2190

Signature of Field Personnel
[Signature]

- Sample Types:
 P - Personnel
 FC - Final Clearance
 BG - Background
 PCM - Phase Contract Microscopy
 TEM - Transmission Electron Microscopy

72-Hour Turn-Around-Time
 Notify P. Westermann with Dames & Moore of any PCM > 0.1 f/cc;
 air samples may need to be reanalyzed by TEM. Do not analyze any
 samples by TEM until approval is received from Dames & Moore

Relinquished By:	Date:	Time:
<i>[Signature]</i>	9-25-95	1651

Received By:	Date:	Time:
<i>[Signature]</i>	9-26-95	1030

Please submit sample results, copy of chain-of-custody form, and invoice to P. Westermann (D&M ATL)

Dames & Moore, Inc.
Chain-of-Custody
Asbestos Air Sampling

Six Piedmont Center
 3525 Piedmont Road
 Atlanta, Georgia 30305
 Phone: (404) 262-2915
 Fax: (404) 233-2271

Page 6 of 7

Sample Source & Client: **FT. MYERS CMF**

Signature: *P. C. D.*

Project Title: **USPS - Asbestos Survey**

Job No.: **03711-386 -5008**

Date	Sample Number	Sample Type	Sample Location	Calibration (LPM)	Time On/Time Off	Total Time (MIN)	Sample Volume (L)
9-22-95	FMG-A-31	PCM	WORK ROOM - D	15	1825/2045	140	2100
	32		" - C		1828/2047	139	2085
	33		" - C		1833/2048	135	2025
	34		" - C		1837/2050	133	1995
	35		E1-118		1841/2051	130	1950
	36		E2-113		1845/2052	127	1905

Signature of Field Personnel

P. C. D.

Sample Types:

- P - Personnel
 - FC - Final Clearance
 - BG - Background
 - PCM - Phase Contrast Microscopy
 - TEM - Transmission Electron Microscopy
- 72-Hour Turn-Around-Time
 Notify P. Westermann with Dames & Moore of any PCM > 0.1 f/cc;
 air samples may need to be reanalyzed by TEM. Do not analyze any
 samples by TEM until approval is received from Dames & Moore

Relinquished By:	Date:	Time:
<i>P. C. D.</i>	9-25-95	1651

Received By:	Date:	Time:
<i>J. Mann</i>	9-26-95	1030

Please submit sample results, copy of chain-of-custody form, and invoice to P. Westermann (D&M ATL)

Dames & Moore, Inc.
Chain-of-Custody
Asbestos Air Sampling

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 3525 Piedmont Road
 Atlanta, Georgia 30305
 Phone: (404) 262-2915
 Fax: (404) 233-2271

Page 7 of 7

Sample Source & Client: **FT. MYERS GOLF**

Signature: *[Signature]*

Project Title: **USPS - Asbestos Survey**

Job No.: **03711-380-5008**

Date	Sample Number	Sample Type	Sample Location	Calibration (LPM)	Time On/Time Off	Total Time (MIN)	Sample Volume (L)
9-22-95	FMG-A-37	PCM	WORKROOM - D	15	1849/2054	125	1875
	38		" - D		1855/2100	125	1875
	39		" - C		1858/2058	120	1800
	40		" - C		1903/2057	114	1710
	41		FIELD BANK	180			
	42		WORKROOM - D	15	1906/2056	110	1650

Signature of Field Personnel
[Signature]

- Sample Types:
 P - Personnel
 FC - Final Clearance
 BG - Background
 PCM - Phase Contract Microscopy
 TEM - Transmission Electron Microscopy

72-Hour Turn-Around-Time
 Notify P. Westermann with Dames & Moore of any PCM > 0.1 f/cc;
 air samples may need to be reanalyzed by TEM. Do not analyze any
 samples by TEM until approval is received from Dames & Moore

Relinquished By: *[Signature]* Date: 9-25-95 Time: 1651

Received By: *[Signature]* Date: 9-26-95 Time: 1030

Please submit sample results, copy of chain-of-custody form, and invoice to P. Westermann (D&M ATL)



AMA Analytical Services, Inc.

AN AINA/NVLAP Accredited Laboratory

FIBER COUNT SHEET FOR TRANSMISSION ELECTRON MICROSCOPY

Page 1 of 1

Date of Analysis 10/5/91 AMA Lab ID # EA1 39427 Filter Type/Size: MCE 25 mm PC mm
 Client DAMCO Sample Number FMG A-3 Starting Time Filter Porosity μ m Lot#
MURKIN Chain of Custody # 38450 Stopping Time Filter Manufacturer
 Analyst LLS BUSTIN Grid Storage Box ID # 95201 Working Mag. 15 K (L.O.D.) Sensitivity 45 s/mm² 0.0090 s/cc
 (signed) [Signature] Holder # Grid 5A1B Accel. Voltage 100 kV Volume of air Sampled 1950 L
 Method/Type (circle): EPA Level II (AHERA) Other: (Air) Water Bulk Wipe Grid Openings to Observe (AHERA) 8

Grid Opening #/Location	Structure Number	Structure Type	Length & Width (in microns)	SAED	Saved Spectrum Identification #	Elements Identified	Fiber Negative Number	SAED Negative Number	Magnification or Camera Length
1 F-9	M/D								K cm
2 H-3	M/D								K cm
3 L-7	M/D								K cm
4 B-9	M/D								K cm
5 R-3	M/D								K cm
6 F-1	M/D								K cm
7 C-2	M/D								K cm
8 T-2	M/D								K cm
									K cm
									K cm
									K cm
									K cm
									K cm
									K cm
									K cm
									K cm
									K cm
									K cm
									K cm
									K cm
									K cm
									K cm
									K cm

LEGEND: NSD = No Structures Detected F = Fiber B = Bundle C = Cluster M = Matrix UTO = Unable to Obtain = 2nd Grid

Total # of Grid Openings Observed 8 = 0.009 mm² # of Structures Counted: 0
 Asbestos Type: s < 5 μ m + s \geq 5 μ m = s/mm² = s/cc
 Asbestos Type: s < 5 μ m + s \geq 5 μ m = s/mm² = s/cc
 Non-Asbestos Type: s < 5 μ m + s \geq 5 μ m = s/mm² = s/cc
 Total Asbestos Structures Counted = 0 s = 0 s/mm² = 0 s/cc

SAED Calibration Date Mean Grid Opening Area is 0.0 11 mm² NOTES: 11/0.0022
 EDXA Calibration Date Spectra Disk Identification #
 Mag. Calibration Date EM Serial Number is 156143-27

Dames & Moore, Inc.
Chain-of-Custody
Asbestos Bulk Sampling

Six Piedmont Center
 3525 Piedmont Road
 Atlanta, Georgia 30305
 Phone: (404) 262-2915
 Fax: (404) 233-2271

Sample Source & Client: USPS - Pe. Myers GMF
 Project Title: USPS - Asbestos Survey

Signature: [Signature]
 Job No.: 03711-386-5008

Date	Sample Number	Sample Location	Type of Material Sampled	Analysis Requested
	FMG-A-35		Air Sample	TEM

Turn-Around Time Requested: 72-hour (Normal) _____ 48-hour _____ 24-hour

Relinquished By: (C-0-C # 38450) Date: _____ Time: _____

Received By: [Signature] Date: 10/2/95 Time: 1545

Please submit sample results, copy of chain-of-custody form, and invoice to P. Westermann (D&M ATL)

The Deep South Center for Occupational
Health & Safety

Certifies that

Luis Bustillos

Has Satisfactorily Completed
NIOSH 582-Sampling & Evaluating
Airborne Asbestos Dust
August 25-28, 1987

And is Hereby Awarded This Certificate.



[Signature]
Course Instructor

[Signature]
Director, Center for Occupational
Health & Safety

Dean, School of Public Health
University of Alabama
at Birmingham



APPENDIX J

LABORATORY CERTIFICATIONS AND QA/QC PROGRAMS

AMA ANALYTICAL SERVICES



The Essential Source

June 6, 1994

Mr. Walter M. Craig, Director
AMA Analytical Services, Inc.
4485 Forbes Boulevard
Lanham, MD 20706

LAB ID #8863

Dear Mr. Craug:

Congratulations! The AIHA Laboratory Accreditation Committee and Board of Directors have approved your reaccreditation. Your certificate is effective March 1, 1984 through March 1, 1996. Enclosed is your Certificate #244.

Please note that under the policies of the Laboratory Accreditation Committee, specifically P4.0123, accredited laboratories must participate in the AIHA PAT program for all categories of analytes that are a part of the services provided. According to Guideline G4.025, An accredited laboratory that wishes to expand into a new analyte must submit an updated application. A laboratory which fails to comply with these procedures may be subject to revocation of accreditation under Guideline G6.0313. Advertising that the laboratory is accredited for analytes when the laboratory does not participate in the PAT program is also grounds for revocation of accreditation.

Again, congratulations and we are here to assist you with your needs, problems and questions.

If you have any questions, please contact me.

Sincerely,

Charlotte L. Miller
Laboratory Accreditation Administrator

CLM



The American Industrial Hygiene Association

is proud to acknowledge that

AMA Analytical Services, Inc.

Lanham, MD

Laboratory ID# 8863

*has fulfilled the requirements for
Industrial Hygiene Laboratory Accreditation
and has earned distinguished recognition as an*

AIHA Accredited Laboratory

since March 1, 1984 through March 1, 1996

subject to continued compliance with AIHA accreditation criteria.

President

American Industrial Hygiene Association

June 1, 1994

Date Prepared

Chairman

Laboratory Accreditation Committee

244

Certificate Number

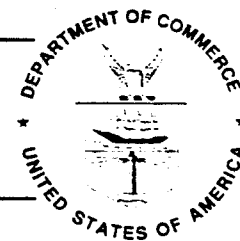
National Institute
of Standards and Technology



National Voluntary
Laboratory Accreditation Program

ISO/IEC GUIDE 25:1990
ISO/IEC GUIDE 58:1993
ISO 9002:1994

Scope of Accreditation



AIRBORNE ASBESTOS FIBER ANALYSIS

NVLAP LAB CODE 1143

AMA Analytical Services, Inc.
4485 Forbes Blvd.
Lanham, MD 20706
Walter M. Craig Phone: 301-459-2640

NVLAP Code *Designation*

18/A02	40 Code of Federal Regulations Chapter I (1-1-87 edition) Part 763, Subpart E, Appendix A or the current U. S. Environmental Protection Agency TEM method for the determination of completion of response actions for asbestos.
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July 1, 1996

Effective until

A handwritten signature in cursive script, reading "Albert D. Holen", written over a horizontal line.

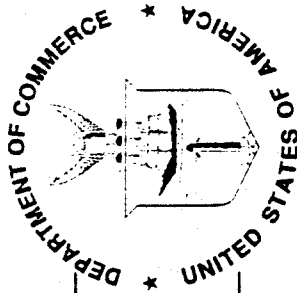
For the National Institute of Standards and Technology

United States Department of Commerce
National Institute of Standards and Technology

NVLAP[®]

ISO/IEC GUIDE 25:1990
ISO/IEC GUIDE 58:1993
ISO 9002:1994

Certificate of Accreditation



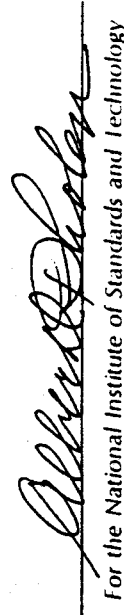
AMA ANALYTICAL SERVICES, INC.
LANHAM, MD

is recognized under the National Voluntary Laboratory Accreditation Program for satisfactory compliance with criteria established in Title 15, Part 285 Code of Federal Regulations. These criteria encompass the requirements of ISO/IEC Guide 25 and the relevant requirements of ISO 9002 (ANSI/ASQC Q92-1987) as suppliers of calibration or test results. Accreditation is awarded for specific services, listed on the Scope of Accreditation for:

AIRBORNE ASBESTOS FIBER ANALYSIS

July 1, 1996

Effective until


For the National Institute of Standards and Technology

National Institute
of Standards and Technology



National Voluntary
Laboratory Accreditation Program

ISO/IEC GUIDE 25:1990
ISO/IEC GUIDE 58:1993
ISO 9002:1994

Scope of Accreditation



BULK ASBESTOS FIBER ANALYSIS

NVLAP LAB CODE 1143

AMA Analytical Services, Inc.
4485 Forbes Blvd.
Lanham, MD 20706
Walter M. Craig Phone: 301-459-2640

NVLAP Code ***Designation***

18/A01 40 Code of Federal Regulations Chapter I (1-1-87 edition) Part 763, Subpart F, Appendix A or the current U. S. Environmental Protection Agency method for the analysis of asbestos in building materials by polarized light microscopy.

July 1, 1996

Effective until

A handwritten signature in cursive script, reading "Albert J. Holen".

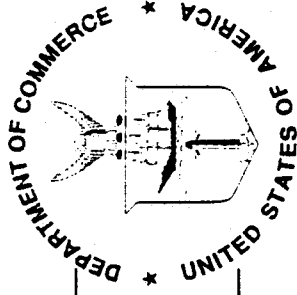
For the National Institute of Standards and Technology

United States Department of Commerce
National Institute of Standards and Technology

NVLAP[®]

ISO/IEC GUIDE 25:1990
ISO/IEC GUIDE 58:1993
ISO 9002:1994

Certificate of Accreditation




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BULK ASBESTOS FIBER ANALYSIS

July 1, 1996

Effective until


For the National Institute of Standards and Technology

7.0 QUALITY ASSURANCE AND QUALITY CONTROL

Monitoring the environment for airborne asbestos requires the use of sensitive sampling and analysis procedures. Because the test is sensitive, it may be influenced by a variety of factors. These factors include the supplies used in the sampling operation, the performance of the sampling, the preparation of the grid from the filter and the actual examination of this grid in the microscope. Each of these unit operations must produce a product of defined quality, if the analytical result is to be a reliable and meaningful test result. Accordingly, a lab blank analysis is performed along with the sample analysis as an indicator that the materials used are free of asbestos contamination or are within acceptable limits. In this way, the quality of the data is defined and the results are of known value. These checks and tests also provide timely and specific warning of any problems which might develop within the sampling and analysis operations. A description of these quality control and quality assurance procedures are summarized.

7.1 Equipment Calibration and Maintenance

7.1.1 Hoods

The vacuum hood and HEPA filter hood are wet-wiped daily with fiber-free water. Air flow is measured annually and should be > 75 linear feet per minute. The HEPA filter is replaced annually.

7.1.2 Plasma Asher

Calibration of the plasma asher is in accordance with SOP No. 204.

The plasma asher chamber is cleaned after each use with fiber-free water and dried with a lint-free cloth.

Pump oil is monitored weekly for signs of degradation. Oil is changed annually or as necessary. Vacuum tubes are changed as necessary.

7.1.3 Carbon Coater

Mechanical pump oil and diffusion pump oil are changed annually or as needed.
The Bell jar is cleaned weekly or as needed.

The Bell jar gasket is changed biannually or as needed.

7.1.4 Glassware and Miscellaneous Utensils

All glassware and miscellaneous utensils (i.e., stainless steel mesh, forceps, scalpels, etc.) are cleaned using detergent, solvents (e.g., acetone or ethanol) and/or fiber-free water.

(See SOP No. 205, Cleaning Stainless Steel Screens.)

7.1.5 TEM

Transmission electron microscopes are under service contract with the manufacturer.

Calibrations for spot size measurement, magnification and camera constant determination and beam dose are performed following the procedures outlined in SOP Nos. 403, 404, 405 and 406.

The microscope is aligned before each use following the procedure outlined in SOP 301, Alignment Procedure.

7.1.6 EDXA

Aluminum and copper peak calibration for Kevex and Ortec spectrometers are shown in SOP Nos. 407 and 408, respectively.

Liquid nitrogen dewars are filled twice weekly.

(K-ratios will be determined annually upon receipt of SRM 2063.)

7.1.7 Grid Opening Measurements

Grid opening measurements are performed following the procedure outlined in SOP Nos. 401 and 402.

7.1.8 Background Contamination Calibration

7.1.8.1 Maximum Allowed Contamination

The allowed contamination levels of filter blanks are (per lot): Cumulative average level of 18 structures/mm² or 53 s/mm² for a single preparation

The allowed contamination level of filter blanks is (for field blanks): 70 s/mm²

7.1.8.2 Blank Filter Checks

A minimum of 1 lab filter blank per sample set, or 10% of samples, whichever is greater, are prepared. If field and sealed blanks are known to the lab, these are prepared with each series of samples.

A minimum of 1 laboratory filter blank per 25 analyzed filters shall be analyzed. In addition, the lab blank shall be analyzed whenever the concentration on any non-blank filter is over 70 s/mm², and when the full set of inside/outside samples is analyzed. When an inside/outside comparison is performed, the field blanks will also be analyzed.

7.2 Proficiency

7.2.1 QC Sample Selection

Quality control sample selection is performed in accordance with the following specifications:

- 1) Reanalysis is performed only on air samples.

- 2) Reanalysis is performed according to the original methodology as the sample was first analyzed (AHERA, Yamate II, etc.).
- 3) 10% of all analyzed air samples shall be reanalyzed in accordance with the schedule shown in the QC ANALYSIS SCHEDULE.
- 4) QC samples are randomly selected by the QC coordinator after a review of the list of analyzed samples of the previous week's work.
- 5) QC analysis is executed on a daily basis, and stays current within a one-week period. On-site QC coordinators review the data each week.
- 6) The QC coordinator at the DC Laboratory and the NY/NJ facility ensure that the data are maintained in separate files for all QC analyses.
- 7) The QC coordinator of record for the NVLAP program compares all reanalysis data to the originally recorded values on a monthly basis, and consults with the DC and NY/NJ facilities' QC coordinators.
- 8) Client-supplied samples which exhibit concentrations of 1,000-5,000 $\mu\text{g}/\text{m}^3$ may be sequestered as possible, future reference samples for QC analysis.
- 9) Each laboratory (DC and NY/NJ) maintains prepared samples exhibiting similarly high particulate loading for QC analyses.

7.2.2 QC Analysis Schedule for TEM Samples

To meet the 10% QC analysis criteria for the NVLAP, the following schedule for each type of QC analysis is met:

- 1) 30% of QC samples are analyzed by the same Operator, analyzing the same grid openings on the same grids as were originally observed by that Operator.

- 2) 30% of QC samples are analyzed by a different Operator, analyzing the same grid openings on the same grids as were originally observed.
- 3) 20% of QC samples are analyzed by the same Operator following re-preparation of the original filter by the same sample preparation technician.
- 4) 20% of QC samples, chosen from prepared samples exhibiting between 1,000 and 5,000 μm^2 are analyzed by each Operator.

One randomly chosen grid opening specified by the QC coordinator is analyzed to satisfy this requirement. Any single grid opening shall be analyzed no more than four (4) times in order that the morphological, chemical, & crystalline integrity of identified structures is not compromised.

Reanalysis shall be accomplished by filling out NVLAP form(s) "4a" for all analyses. Grid orientation and scanning will be in accordance with standard analytical procedures.

7.2.3 QC Analysis of Electron Diffraction Indexing

To ensure the proper identification of minerals observed during routine analysis of air samples, selected area electron diffraction (SAED) pattern indexing will be completed in accordance with the following schedule:

100% of all electron diffraction patterns photographed from routine sample analysis shall be identified by measurement and crystallographic indexing.

A second Operator will re-measure and re-index 50% of all photographed electron diffraction patterns identified as amphiboles.

A second Operator will re-measure and re-index 10% of all photographed electron diffraction patterns identified as non-amphiboles.

On-site QC coordinators review data on a weekly basis. The NVLAP QC coordinator of record reviews the data on a monthly basis.

All SAED data will be maintained by the TEM Laboratory Supervisor and will be reviewed on a monthly basis by the NVLAP QC coordinator of record for both the DC and NY/NJ laboratories.

7.2.4 QC Data Reduction

The precision of TEM analysis for both an individual analyst and the laboratory is calculated from statistical evaluation of the reanalysis data outlined in the QC Analysis Schedule.

20% of the grid openings identified for QC are reanalyzed using verified counting techniques. Because grid orientation, grid opening selection and structure drawing are required, inter-operator discrepancies in counting and grid opening selection are identified.

These discrepancies are expressed as false positive and false negative error rates.

True Positives:

$$\frac{\text{\# correctly identified asbestos structures}}{\text{\# of verified asbestos structures present}} \times 100$$

False Positive:

$$\frac{\text{\# structures incorrectly identified as asbestos}}{\text{\# of verified asbestos structures present}} \times 100$$

False Negatives:

$$\frac{\text{\# structures incorrectly identified as non-asbestos}}{\text{\# of verified asbestos structures present}} \times 100$$

EXAMPLE:

During the verified counting reanalysis, an operator correctly identifies 18 asbestos structures out of a verified count of 20 asbestos structures. The operator then has a true positive rate of 90% (or $18/20 \times 100$). If the operator incorrectly identifies 2 structures as non-asbestos, the operator has a false-negative rate of 10% (or $2/20 \times 100$). If the operator incorrectly identifies 3 non-asbestos structures as asbestos, the operator has a false

positive rate of 15% (or $3/20 \times 100$). Operators are proficient as long as their cumulative average true-positive rate is $\geq 80\%$, and their false-negative rate is $\leq 20\%$ and their false positive rate is $\leq 10\%$ for all verified counting analysis.

60% of the QC reanalysis are performed on grid openings previously analyzed by the same or another operator. A comparison is made between the total asbestos structures detected on the original analysis and the subsequent QC reanalysis. Operators are proficient as long as their demonstrated asbestos structure count, during reanalysis, is within 20% of the original structure count.

20% of the QC reanalysis involves re-preparation and analysis of the original filter material. The total number of grid openings analyzed is identical to that of the original analysis. Operators are proficient as long as their demonstrated asbestos structure count, during reanalysis, is within the 95th percentile confidence interval predicted by Poisson distributed variables.

7.2.5 QC Data Evaluation

During reanalysis of samples, discrepancies may occur between operators. Similarly, reanalysis of samples by the same operator may show discrepancies.

Structure count discrepancies are considered significant when the value of the reanalysis count varies by more than 20% from the original analysis.

Reasons for significant discrepancies must be found before routine TEM analysis of air samples by each operator can proceed.

When significant discrepancies are noted by the QC coordinator, the following measures should be applied to aid in the discovery of the reason(s).

- 1) Verification of the grids and grid openings examined by the two operators is completed. Labeling or grid opening selection errors are investigated.
- 2) Structure identification criteria, are examined.

- 3) Structure counting criteria are examined. Complex structures (i.e., bundles, matrices and clusters), may have been misidentified by one or both operators.
- 4) If the asbestos structures were initially identified as chrysotile. Subsequent identification using SAED may not be possible.

In (1) above, both operators review the analyzed grids and openings to identify the discrepancy.

If the same grid openings were analyzed by both operators, the data is reviewed to determine the differences.

If different grid opening selection had been made by one of the operators, the sample should be reexamined so that counts are generated from the same grid openings. Additionally, the reasons for the incorrect grid opening selection must be found and actions taken to prevent future problems.

In the event that the cause of significant discrepancies cannot be determined, both operators must then demonstrate their competence through verified counting procedures. Criteria adopted in this QC evaluation are: $\geq 80\%$ true positive counts, less than 10% false positive counts and less than 20% false negative counts.

7.6 Quality Control of Phase Contrast Samples

7.6.1 Intralaboratory Quality Control

- 7.6.1.1 Four intralaboratory QC slides must be read weekly if the analyst is doing routine PCM analysis. Every analyst must analyze all of the intralaboratory slides twice monthly even if no actual analysis was done by that analyst. A monthly coefficient of variation of each analyst is calculated by the Quality Control Manager.
- 7.6.1.2 10% of the analyzed slides must be recounted by the same analyst. The slides should be picked at random by the analyst and the original QC fiber count sheet given to the QC manager. A monthly proficiency report is kept on each analyst.
- 7.6.1.3 QC results are compared with the original results with the method outlined in the NIOSH 7400 method. If a sample fails this test, the sample must be reanalyzed by the same analyst. If the sample still fails, it must be reanalyzed by another analyst and the original analyst is removed from analysis until proof of precision is obtained. Proof of precision is obtained by reanalysis of PCM samples with known reference values such as PAT samples or ELAP samples over a period of at least one month. Also, every PCM sample dating from the last known proficiency must be reanalyzed by another proficient analyst and any variation must be reported to the client(s).

Once the analyst is rated proficient, 10% of their samples must be reanalyzed by another proficient analyst for a period of at least three months.

After a period of at least three months has passed and both the 10% reanalysis by the same analyst and 10% reanalysis by another analyst are within the stated guidelines the analyst is put back on line.

7.6.2 Interlaboratory Quality Control

All analysts must participate in the Interlaboratory QC program by analyzing all sample submitted for this purpose in a reasonable amount of time.

7.6.2.1 Proficiency Analytical Testing

All analysts must participate in the PAT program by analyzing each sample of every round submitted to the laboratory at least twice. Outliers in the proficiency tests will be taken off line until the location of the problem is determined.

7.6.2.2 ELAP Analytical Testing

All analysts must participate in the ELAP Quality Control program by analyzing each sample of every round submitted to the laboratory at least twice. Outliers in the proficiency tests will be taken off line until the location of the problem is determined.

7.6.2.3 Round Robin Program

All analysts must participate in the Round Robin Program by analyzing each sample submitted to the laboratory at least once.

6.0 Polarized Light Microscopy of Bulk Samples

The purpose of this section is to describe the procedure that the analysts will use when analyzing bulk samples by polarized light microscopy.

6.1 Sample Preparation

6.1.1 Equipment

- Negative flow hood (80 cfm capacity)
- Heat block
- Drying oven
- Muffle furnace
- Filtration apparatus
- 10x Macroscopic microscope
- Polarizing Light Microscope
 - Dispersion Staining Objective
 - 10x Objective
 - 40x Objective
 - Red I Compensator (gypsum plate, retardation plate)
- Stereomicroscope
- mortar/pestle
- Counter
- knife
- tweezers
- dissecting needles
- syringe

6.1.2 Materials

- 1/2 microscope slides
- 18x18 Coverslips
- kimwipes
- Tetrahydrofuran (THF) (MSDS #111)
- Refractive index oils:
 - 1.440 - 1.555 (MSDS #124)
 - 1.560 - 1.570 (MSDS #125)
 - 1.575 - 1.640 (MSDS #126)
 - 1.642 - 1.700 (MSDS #127)
- Calibrated refractive index glass beads

- Concentrated Hydrochloric acid (MSDS #108)
- Polycarbonate filters
- disposable plastic petri dishes

6.1.3 Documentation of Sample Description

Prior to preparation, the sample should be viewed using a stereomicroscope at 10x to 45x magnification to tentatively identify the material in the sample. Estimations of percentages should be written in the appropriate section of the bulk analysis sheet.

6.1.4 Sample Preparation

all sample preparation is done in high dispersion refractive index oil 1.550 unless the analyst identifies a fiber that requires another refractive index oil.

6.1.4.1 **Preparation of Friable Bulk Samples - EPA Interim Method**
Preparation of friable bulk samples is described in SOP #501
A copy of the EPA Interim Method is in Appendix A

6.1.4.2 **Preparation of Friable Bulk Samples - ELAP Method 198.1**
Preparation of friable bulk samples following ELAP protocol is described in SOP #502
A copy of the ELAP Method 198.1 is in Appendix A

6.1.4.3 **Preparation of Friable Bulk Samples - Point Counting Methodology**
Preparation of friable bulk samples for analysis by point counting methodology is described in SOP #503

6.1.4.4 **Preparation of Nonfriable Bulk Samples - Modified EPA Interim Method**
Preparation of nonfriable bulk samples is described in SOP #504

6.1.4.5 Preparation of Nonfriable Organically Bound Bulk Samples - ELAP 198.1 NOB

Preparation of nonfriable organically bound bulk samples is described in SOP #505

6.1.4.6 Preparation of Vacuum Wipe Samples - Modified EPA Interim Method

Preparation of vacuum wipe samples is described in SOP #506

6.1.4.7 Preparation of Tapewipe Samples - Modified EPA Interim Method

Preparation of Tapewipe samples is described in SOP #507

6.2 Sample Analysis

6.2.1 Documentation of Data

All measurements must be documented on the sample analysis sheet. The sample analysis sheet must also include:

- Chain of Custody number
- Client name
- Date of Analysis
- Client sample number
- AMA Sample number
- Description of material (provided by client, or described by analyst)
- Friability
- Homogeneity
- Texture
- Color
- Fibrosity

6.2.1.1 Microscope Set Up

Daily, the microscope should be cleaned and aligned and adjustments documented in the appropriate microscope log.

6.2.1.2 Documentation of Optical Properties

While examining the prepared slide, the analyst looks for the fibrous components that were tentatively identified with the stereomicroscope. When a fiber is located, various optical properties are examined so that it can either be identified as asbestos or other fibrous components. Usually the prepared slides are examined under 100x magnification with polarizers crossed and with the Red I compensator in place to observe fibers with the most contrast to the background material. Occasionally, the slide may be examined with the Red I compensator out but the polarizers still crossed. This allows for contrast in heavy media, such as tar or mastic.

6.2.1.2.1 Morphology

The first physical property that is apparent is the morphology of the fiber that is being examined. This is documented in the morphology column of the sample analysis sheet. There are several standard abbreviations provided in the key of the analysis sheet, however they do not need to apply.

6.2.1.2.2 Color

This applies to the color of the fiber under plane polarized light. Remove the Analyzer and the Red I compensator to examine the fiber. If the fiber does not have any color, report "colorless" in the color column of the analysis sheet.

6.2.1.2.3 Sign of Elongation

The sign of elongation is the determination of which principle index of refraction is parallel to the long axis of the fiber or crystal.

Align the fiber so that makes a 45 degree angle with the cross hairs in the northeast quadrant. Insert the analyzer and the Red I compensator. If the retardation of the fiber increases, the slow index of refraction (γ) is parallel to the long axis of the fiber and the fiber is said to be length slow or have a positive sign of elongation. If the retardation of the fiber decreases, the fast index of refraction (α) is parallel to the long axis of the fiber and the fiber is said to be length fast or the have a negative sign of elongation. For fibers (biaxial minerals) that are elongated in the direction of the medium principle index of refraction (β) then the crystal will exhibit both a positive and negative sign of elongation depending on which refractive index is perpendicular to the medium refractive index on that particular crystal face.

Generally, fibers will exhibit low birefringence and therefore to determine the sign of elongation, place the fiber into the northeast quadrant at 45 degrees to the crosshairs. If the fiber is blue in the northeast quadrant then the mineral is lengthslow and has a positive sign of elongation. If the fiber is yellow in the northeast quadrant then the mineral is length fast and has a negative sign of elongation.

6.2.1.2.4 Extinction Angle

With the polarizers crossed, the fiber will exhibit directions where no light is passed through due to interference from the crystal itself. When a crystal or fiber is extinct, it will appear completely dark when viewed with crossed polarizers.

The extinction angle is the angle between the principal index of refraction direction and the crystallographic directions in the mineral. If the principal indices lie within the same plane as the crystallographic axes then the mineral will go extinct when the cleavage directions are aligned with the privileged directions of the polarizers.

Minerals that exhibit this phenomenon are said to have parallel extinction or an extinction angle of 0 degrees (provided that the crosshairs of the microscope are aligned with the polarizers).

If the mineral shows extinction at some angle to the crosshairs then this angle can be measured to a tenth of a degree with the vernier scale on the rotating stage of the polarizing microscope. Align the long cleavage face to the vertical crosshair and record the measurement in degrees. Rotate the crystal in a clockwise direction until extinction occurs. Again record the measurement in degrees. The difference in the measurements is the extinction angle. Document the extinction angle on the analysis sheet in the appropriate column.

NOTE: The whole fiber must go extinct for a fiber to have an extinction angle. If various parts of the fiber go extinct at different locations in a 360 degree rotation, then it is said to have undulose extinction. If the fiber is extinct in all points of a 360 degree rotation, then the fiber is isotropic and has only one principal index of refraction.

6.2.1.2.5 Dispersion Staining and Refractive Index

Place the fiber in one of its extinction positions and examine the fiber with the dispersion staining objective. Remove the analyzer and the Red I compensator from the light path. Slowly close the diaphragm and record the color that will outline the fiber. Using the Dispersion Staining Colors chart, locate the closest possible match to the color around the fiber. From the chart determine the matching wavelength in nm for that color and record both on the analysis sheet. Rotate the fiber 90 degrees and repeat the procedure. Using the paper "Calculation of Refractive Indices from Dispersion Staining Data", locate the appropriate refractive indices and record.

6.2.1.2.6 Becke Lines and Refractive Index

If the refractive index of the mineral and the oil are not close numerically, the fiber will appear to have more contrast with the surrounding material and the edges will be easier to see. Becke lines can be used to determine the relative difference between the fiber and the oil. Examine the fiber with the 400x objective. Remove the Red I compensator and the analyzer. Slowly close the diaphragm down until there is a separate light and dark line around the fiber. While looking into the scope, lower the stage. This is generally done by turning the fine focus towards you. Watch the movement of the light becke line. The light becke line will move into the media with the higher refractive index.

6.2.1.2.7 Pleochroism

Pleochroism is a change in color with a change in direction. Align the mineral in one of its extinction positions. Remove the analyzer and the Red I compensator. Note the color on the analysis sheet. Rotate the fiber 90 degrees to its other extinction position and note if there was a change in color with the change in position. If there was, note the colors with direction on the analysis sheet.

NOTE: Fibers that appear colorless in plane polarized light will not exhibit pleochroism.

6.2.1.2.8 Birefringence

Birefringence is the numerical difference between the fiber's highest refractive index and its lower refractive index. From the observations made with the dispersion staining objective, the exact refractive indices were determined. The difference between them is the birefringence.

6.2.1.2.9 Determination of the Material

Once all of the measurements are made, a determination of the fiber may be made. Various references are available that list the published values that are in an acceptable range. These references include: "Polarized Light Microscopy", McCrone, 1979; and "Asbestos Identification", McCrone, 1980. A fiber must meet all of the qualifications to be determined asbestos.

6.2.1.3 Estimation of Percentages

Once the determination is made of the type of material present, there must be a determination of the amount of the material present.

6.2.1.3.1 Calibrated Visual Area Estimation

Visual estimation is a determination of the area that is covered by a particular component of the sample. Reference pictures are available in the lab for comparison. If needed, two analysts may confer before agreeing on the percentage before reporting the results. After a determination of the percentage is made, it should be compared to the estimated percentage done with the macroscopic scope. Results are given in percentage ranges of 5 or 10. The median of all of the ranges of each type of material present in a sample should add up to 100.

6.2.1.3.2 EPA Point Counting Method

A total of eight preparations of the sample should be made, two per slide. An effort should be made that the preparations have an even, thin distribution of material underneath the coverslip. The sample should be analyzed with 100x magnification. Start in one corner of the coverslip and move the slide in an X-Y direction with the mechanical stage. The center of the crosshairs represents the point to be counted. As the slide is moved, each new point that the center of the cross hairs is counted. If the center of the crosshairs does not land on a piece of

material it is said to be an "empty" point and is not counted.

A total of 400 nonempty points are to be counted with 50 point counted on each slide. There is a counter in the lab to help the analyst keep track of the number of points counted. The percent of each component present is determined by the following equation:

$$\left(\frac{\text{Points counted for component}}{\text{Total points counted}}\right) \times 100\%$$

The total percentages of each material added together should equal 100. Point counting is not recommended for samples where the asbestos is very small or easily obscured such as floor tiles or roofing tars. If asbestos is observed but not counted then the sample is reported as Trace amount of asbestos present.

6.2.1.3.3 ELAP Stratified Point Counting Method

The ELAP method for point counting can be done with a minimum of four preparations. The method is the same as the EPA Point Counting Method except that once an asbestos point has been counted on a particular preparation, analysis on that preparation is halted and analysis on the next preparation is begun. Analysis stops as soon as 4 asbestos points have been counted or a total of 400 nonempty points have been counted.

If the analyst determines that the sample may be negative by macroscopic examination, a total of four preps may be scanned and if no asbestos is identified then the sample may be reported as negative and the percentages of the other components may be given by visual estimation.

If asbestos points are counted, the equations for determining the amount of asbestos area as follows:

$$\left(\frac{\text{Points counted for material}}{\text{Total point counted}}\right) \times 100\%$$

If different types of asbestos are counted then the percentage of each asbestos type is calculated as well as the total asbestos present. If asbestos is identified but not counted, that sample is reported to have Trace amounts of asbestos present.

- 6.2.1.3.4 **ELAP Method for Nonfriable Organically Bound Material**
Analyze four preparations with 100x magnification. For each prep, make a visual estimation of the amount of the asbestos in that prep. Mark the number of the reference slide that most closely matches the percentage of the sample. Document the optical properties of at least one fiber from each preparation or 4 fibers overall. If there are not 4 fibers present - note that in the comments section of the analysis sheet.

Average the amount of asbestos from the four slides to get an overall percentage. To determine the percentage of the asbestos present use the following equation:

$$\frac{((\text{Percent of asbestos present}/100) \times \text{weight residue})}{\text{Total weight of sample}}$$

- 6.2.1.4 Record the date and time analyzed on the Chain of Custody form.

6.3 Reporting Results

6.3.1 EPA "Interim Method"

Report results to only the person identified on the chain of custody. If a facsimile copy of the results is required, use the specific form for reporting PLM results. If a method other than the EPA "Interim Method" is used, note the method on the fax report.

If the client requests, results will be given/faxed to another party (written verification may be requested before results are given).

If the sample is recommended for TEM by the analyst, the following disclaimer is included on the Certificate of Analysis:

"Please note, due to resolution limitations with optical microscopy and/or interferences from matrix components of this sample, results which are reported via PLM as negative or trace (<1%) for asbestos may contain a significant quantity of asbestos. It is recommended that additional analytical techniques including TEM be used."

Note time and method of reporting on chain of custody.

6.3.2 ELAP Method 198.1

6.3.2.1 Friable Materials

If asbestos is detected in a friable sample, the percentage should be rounded off to two digits for reporting. The percentage of each type of asbestos present in the sample, as well as the total asbestos present shall be reported.

6.3.2.2 Nonfriable Materials

If asbestos is detected in a nonfriable sample, the percentage should be rounded off to two digits and the percentage of each asbestos type present in the sample, as well as the total asbestos present shall be reported. If a nonfriable sample is negative, the following disclaimer must be included with the sample:

"Polarized-light microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound material. Before this material can be considered or treated as non-asbestos-containing, confirmation must be made by quantitative transmission electron microscopy."

6.3.2.3 The color of the sample shall also be reported along with the results for any sample analyzed by the ELAP method.

6.4 Quality Control of Polarized Light Microscopy Samples

6.4.1 Intralaboratory Quality Control - Reanalysis of Client-Submitted Samples

6.4.1.1 EPA Interim Method

100% Reanalysis is done on the analyzed slides by another analyst before the written copy of the report is mailed to the client. Any discrepancies should be noted in the discrepancy log and the client should be notified.

6.4.1.2 ELAP Method

6.4.1.2.1 Duplicate Samples

One sample out of 50 must be reanalyzed by the same analyst. The quality control manager is responsible for tracking sample numbers and distributing the QC samples as they are required. A monthly summary for each analyst is kept to document accuracy.

6.4.1.2.2 Replicate Samples

One sample out of 15 must be reanalyzed by another analyst. The quality control manager is responsible for tracking sample numbers and distributing the QC samples as they are required. A monthly summary for each analyst is kept to document proficiency.

6.4.1.2.3 Proficiency Samples

One reference sample per month or one reference sample per 100 samples must be analyzed. The quality control manager is responsible for handing out the monthly reference sample. Summaries of each analyst are kept to document the analyst proficiency.

6.4.1.3 Internal Reference Samples

All analysts must analyze Internal Reference samples which will be issued monthly by the Optical Laboratory Supervisor or Laboratory Director.

6.4.2 Interlaboratory Quality Control

6.4.2.1 EPA Interim Method

All analysts must participate in the interlaboratory quality control program by analyzing all samples submitted in a reasonable amount of time.

6.4.2.2 ELAP Method

One sample out of every two hundred analyzed must be sent to another ELAP Accredited laboratory. The sample sent must be a sample that was previously submitted for either duplicate or replicate analysis.

6.4.2.3 NVLAP Bulk Rounds

All analysts must analyze all NVLAP bulk round samples. Proficiency reports are kept for each analyst.

6.4.2.4 ELAP Bulk Rounds

All analysts must analyze all ELAP bulk round samples. Proficiency reports are kept for each analyst.

6.4.2.5 External Sample Exchange Programs

All analysts must analyze reference samples which are part of external sample exchange programs with other laboratories as may be established by the Optical Laboratory Supervisor or Laboratory Director.

6.5 Maintenance and Calibration

6.5.1 Negative Flow Hoods

All negative flow hoods should be tested every three months. The HEPA filters should be replaced as necessary. The hoods should be thoroughly cleaned after each use.

6.5.2 Microscope Maintenance

All microscopes should be cleaned and adjusted daily with documentation in the appropriate log book. If they are sent out for maintenance, this should be recorded in the log. Monthly checks with the amosite standard should be performed to check the alignment of the crosshairs with the polarizer and analyzer.

6.5.3 Calibration and Contamination Check

Calibration of the three main refractive index oils should be done weekly with the refractive index beads. The calibration should be noted in the appropriate log. If a nonstandard oil is used, it must be calibrated prior to use. Prior to preparing a set of samples, a blank sample of the refractive index oil must be made and scanned for contamination. This must be documented in the appropriate log.

6.5.4 Analytical Balance

The analytical balance should be sent out for service one time a year

6.5.5 Muffle Furnace

The temperature of the muffle furnace should be calibrated monthly at three separate temperatures including 480 degrees Celsius.