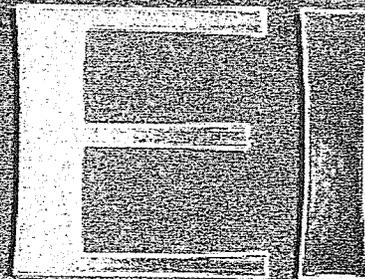
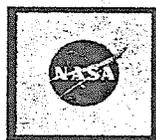


EXHIBIT B - SOLICITATION NNL14504840E HAZARDOUS  
MATERIALS SURVEY, BUILDINGS 1192 C, D & E



## HAZARDOUS MATERIALS STUDY

Conducted At:



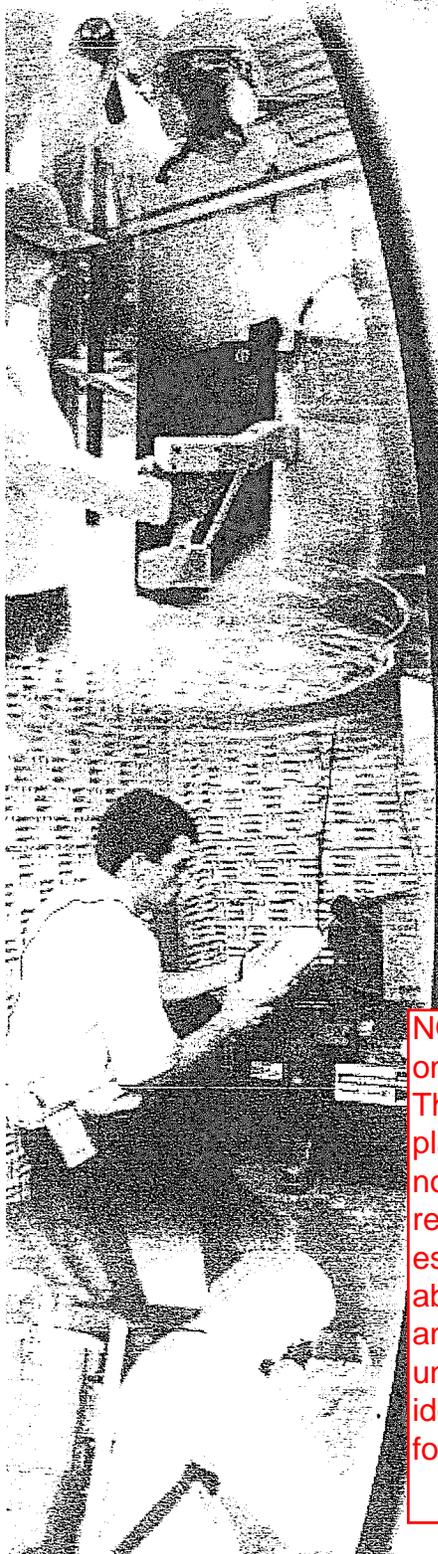
Building 1192 Complex  
NASA Langley Research Center  
Hampton, Virginia

Prepared For:

Mainthia Technologies, Inc.  
NASA LaRC Safety and Mission Assurance Support Contract  
Mail Stop 305  
Building 1232  
Hampton, Virginia 23681

**NOTE:** This study is partial assessment for information only. Areas that were inaccessible were not included. The quantity amounts have been removed. Piping plans and schedules from the original construction are not available. The Contractor is responsible for reviewing the site and conditions to develop an estimate of the quantities required to provide complete abatement of all hazardous wastes within the facility and scope of the demolition. As noted the crawl space under the facility has deteriorated pipe insulation that is identified as ACM. The contractor shall be responsible for remediation of all ACM prior to facility demolition.

October 2005



HAZARDOUS MATERIALS STUDY

Conducted at

Building 1192 Complex  
NASA Langley Research Center  
Hampton, Virginia

for

Mainthia Technologies, Inc.  
NASA LaRC Safety and Mission Assurance Support Contract  
Mail Stop 305  
Building 1232  
Hampton, Virginia 23681

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*Manager, Industrial Hygiene Services*

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VA Asbestos Management Planner #3304 001175



Prepared By:

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*(804) 320-9302*

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Bulk Asbestos Sample Tables

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Asbestos Sample Location Drawings

### APPENDICES

Appendix A - Asbestos Samples Analytical Reports

Appendix B - TCLP Samples Analytical Reports

Appendix C - Photos

Appendix D - Certifications and Accreditations



## **1.0 INTRODUCTION**

A Hazardous Materials Study was conducted at the Building 1192 Complex, consisting of buildings 1192, 1192C, 1192D and 1192E, located at NASA Langley Research Center in Hampton, Virginia on October 11-17, 2005. The study included a limited asbestos-containing materials survey, lead toxicity characteristic leachate procedure (TCLP) sampling, identification and quantification of PCB Ballasts and thermostats with mercury switches, and visual observation of other hazardous conditions or materials. This study was authorized by Mr. Carter Ficklen of Mainthia Technologies, Inc.



## **2.0 METHODOLOGY**

### **2.1 Asbestos Containing Materials Survey**

The purpose of the asbestos-containing materials survey was to identify and quantify the asbestos-containing materials (ACMs) present in the facility. A material is defined by the Environmental Protection Agency (EPA) to be asbestos-containing if greater than 1% asbestos by weight is detected in the sample.

Building components which have been generally known to contain asbestos were identified and, where appropriate, sampled for transport to the laboratory. Suspect materials are typically grouped into two categories: friable (able to be crushed or pulverized by hand pressure) and non-friable. Additionally, those materials which are typically non-friable in their normal usage, such as floor tile, may be considered potentially friable. This means that they may be subjected to mechanical abrasion activities (e.g., floor sanding) which would cause them to become friable. Such suspect materials and their typical application are identified in the EPA document entitled, "Guidance for Controlling Asbestos-Containing Materials in Buildings, 1985 Edition."

Legislation has been promulgated by the Department of Labor - Occupational Safety and Health Administration (OSHA) regarding inspection of buildings for ACMs. According to regulations (29 CFR 1910.1001, 29 CFR 1926.1101), a material is presumed to contain asbestos unless it has been demonstrated to be non-asbestos-containing through an asbestos survey. This survey, which includes sampling of suspect ACM, is conducted in accordance with the Asbestos Hazard Emergency Response Act (40 CFR 763 AHERA) guidelines. A material may be considered non-asbestos-containing only if analytical results from this survey report 1% or less than 1% asbestos by weight, in the material.



This survey was supplemented by information contained in previous surveys conducted by Technology Application, Inc. Roofing materials were not collected or analyzed as part of this survey.

## **2.2 Lead Toxicity Characteristic Leachate Procedure (TCLP)**

The purpose of the TCLP analysis was to determine whether the anticipated waste stream to be generated by the demolition of the structure must be disposed of utilizing hazardous waste handling and disposal procedures, as regards to lead. Even with a prior lead survey to provide a baseline on Lead-Based Paints (LBP's) identified on the interior or exterior of the building, the classification of the waste stream should be determined utilizing TCLP analysis. This can greatly lower the cost of waste disposal and limit the liability to the generator under the Resource Conservation and Recovery Act (RCRA).

## **2.3 PCB Ballasts and Other Hazardous Conditions/Materials**

Fluorescent lighting fixtures have the potential to contain two chemical hazards: Polychlorinated Biphenyl (PCB) containing ballasts and elemental mercury in the fluorescent light bulbs themselves.

PCBs are synthetic organic chemicals that were produced in the United States from 1929 to 1977. A major use of PCBs was in fluorescent light fixture ballasts. Concern over adverse health effects caused by PCBs in the environment led Congress in 1976 to enact §6(e) of the Toxic Substances Control Act (TSCA) that included among other things, prohibitions on the manufacture, processing, and distribution in commerce of PCB's.



Nearly all fluorescent light ballasts manufactured prior to 1979 contain PCBs. All ballasts manufactured after July 1, 1978 that do not contain PCB's are required to be clearly marked "NO PCBs". Ballasts without a date of manufacture or clearly marked "NO PCBs" must be assumed to contain PCB's.

A representative number of ballasts within fluorescent light fixtures in the building were inspected. Information including manufacturer and model numbers were recorded. A cross reference was made to known listings of PCB ballast manufacturers to determine if the ballast should be assumed PCB containing. Ballasts were not disassembled. If the ballast was not marked clearly "NO PCBs", the ballast was considered PCB containing.

Electrical transformers also have the potential to contain PCBs, and are presumed to contain PCBs if not clearly marked "NO PCBs."



### **3.0 SAMPLING TECHNIQUES AND LABORATORY ANALYSIS**

#### **3.1 Asbestos**

During the survey, the building included in the study was inspected and sampled according to homogeneous area. A material or area is considered homogeneous if it is consistent in size, texture, color, and application. All samples were collected in a randomly distributed manner. A total of 50 bulk samples were obtained for analysis from the facility.

Each sample was individually sealed in plastic and submitted to Amerisci Richmond in Midlothian, Virginia for analysis. Amerisci Richmond was accredited by the National Institute of Standards and Technology (NIST) for polarized light microscopy (PLM) analysis of asbestos in bulk materials and under the National Voluntary Laboratory Accreditation Program (NVLAP) at the time of the survey. Samples were analyzed by PLM with dispersion staining techniques (EPA Interim Method for Determination of Asbestos in Bulk Materials, EPA-600/M4-822-020).

The EPA adopted the National Emission Standards for Hazardous Air Pollutants (NESHAP) policy on the analysis of multi-layered asbestos samples (40 CFR Part 61). This policy requires laboratories to prep, analyze, and report, separately, each layer of a multi-layered sample. Any layer containing more than one percent (1%) asbestos is declared an ACM.

Table 1 provides a summary of the sampling activities conducted at the facility, and presents each sample identification, a material description of each homogeneous area, sample location, type and percent of asbestos present, friability and physical condition of the material. A laboratory analytical report provided by Amerisci Richmond has been included in Appendix A.



### **3.2 TCLP**

To determine the Toxicity Characteristic (TC) of the construction debris that is anticipated to be generated by the renovation of the structure, a composite sample of the anticipated waste stream of the structure was collected. The composite sample consisted of representative samples of the building components collected in the same weight proportion as will be generated in the entire bulk of the waste stream of the structure. The composite sample was then submitted to Environmental Hazards Services, L.L.C., an accredited laboratory, for TCLP analysis via EPA Method SW846 1311/8010A/7420. This process extracts the leachable lead from the sampled building materials and determines if the concentration is above or below TC regulatory threshold for lead of 5 part per million (ppm). Waste that displays a TC below 5ppm may be treated and disposed of as general construction debris without regard to hazardous waste handling/disposal procedures, as regards to lead.

### **3.3 PCB Ballasts and Other Hazardous Conditions/Materials**

No PCBs or other hazardous chemicals other than those described above were sampled or submitted for laboratory analysis during this study. PCB ballasts and other hazardous chemicals were catalogued as described in Section 2.3.



## 4.0 SURVEY RESULTS

### 4.1 Asbestos Containing Materials

The following materials were determined to contain asbestos above regulated levels:

BUILDING 1192			
Material	Location	Condition	Friability
Transite Panels	Above Front Entry Awning, Above All Windows	Good	Non-Friable
Pipe Insulation	Crawlspace (see photos in Appendix C)	Damaged	Friable
Fire Doors	Top and Bottom of Stairwells	Good	Non-Friable
White Caulking	Exterior Perimeter of Doors	Good	Non-Friable
White Caulking	Exterior Perimeter of Windows	Good	Non-Friable
Joint Compound*	Associated with Drywall on the Dividing Walls of the Original Structure	Good	Non-Friable
9" x 9" Green Floor Tile and Associated Black Mastic	Throughout First Floor Original Structure. Mostly Under Carpet.	Good	Non-Friable
Floor Tile and Associated Black Mastic	Under White 12" x 12" Floor Tile in S1A and S2A.	Good	Non-Friable
Floor Tile and Associated Black Mastic	Under Carpet in Room 210, in Room 200, and on Stair Landing Between Floors in Center of Structure.	Good	Non-Friable

\* When analyzed as composite samples, the drywall and joint compound combined were not considered asbestos-containing materials. See samples 1192-24, 1192-25 and 1192-26 in Table 1.

**Notes:** The transite panels described above were presumed to contain asbestos. The fire doors described above were presumed to contain asbestos. The pipe insulation described above was identified as ACM in the previous inspection report, and was not sampled during this survey.



**HAZARDOUS MATERIALS STUDY  
NASA LANGLEY RESEARCH CENTER  
BUILDING 1192 COMPLEX**

<b>BUILDING 1192C</b>			
<b>Material</b>	<b>Location</b>	<b>Condition</b>	<b>Friability</b>
Beige 9" x 9" Floor Tile	Under Carpet in Small Room Between 157 and 159	Good	Non-Friable
Fire Doors	All Doors	Good	Non-Friable

**Notes:** The floor tile described above was identified as ACM in the previous inspection report, and was not sampled during this survey. The fire doors described above were presumed to contain asbestos.

<b>BUILDING 1192D</b>			
<b>Material</b>	<b>Location</b>	<b>Condition</b>	<b>Friability</b>
Transite Panels	Above Front Entry Awning, Above All Windows	Good	Non-Friable
Gray 12" x 12" Floor Tile and Associated Black Mastic	Front Entry	Good	Non-Friable
White 9" x 9" Floor Tile and Associated Black Mastic	Rooms 170-183, Halls Adjacent to Those Rooms. Mostly Under Carpet.	Good	Non-Friable
White Duct Mastic	Seams of Fiberglass Duct Insulation Above Ceilings Throughout the Structure	Good	Non-Friable

**Notes:** The transite panels described above were presumed to contain asbestos. The gray 12" x 12" floor tile and associated black mastic described above were identified as ACM in the previous inspection report.



<b>BUILDING 1192E</b>			
<b>Material</b>	<b>Location</b>	<b>Condition</b>	<b>Friability</b>
Transite Panels	Above Entry Awnings, Above All Windows	Good	Non-Friable
White Caulking	Perimeters of Doors	Good	Non-Friable
12" x 12" Beige Floor Tile	Rooms 107a, 118a, 188b, 120a, rear entrance, hall adjacent to 120 & 120a	Good	Non-Friable
Hand Applied Pipe Fitting Insulation (elbows)	On Abandoned Domestic Water Lines Above Ceilings of Bathrooms and Halls Adjacent to Bathrooms	Good	Friable

**Note:** The transite panels described above were presumed to contain asbestos.

Laboratory analysis indicated that none of the remaining samples collected and submitted to Amerisci Richmond for analysis contained levels of asbestos above 1%. The analytical results, location, quantities, and condition for the samples collected during this survey are presented in Table 1.

#### **4.2 Toxicity Characteristic Leachate Procedure**

The Toxicity Characteristic (TC) regulatory threshold for lead is 5.0 milligrams per liter (mg/L). TCLP results for each building contained in the 1192 Complex were <0.50, which is below the regulatory threshold. The waste generated from the renovation of each of the buildings in the 1192 complex can be disposed of as general construction debris.



### 4.3 PCB Ballasts

The following presumed PCB containing fluorescent light ballasts were observed during this study:

Building	Description	Quantity
1192	G.E., Universal Brands in All Fixtures Throughout Structure	Approx. 300
1192C	None	None
1192D	Various Brands Scattered Randomly Throughout Fixtures	Approx. 160
1192E	None	None

### 4.3 Thermostats with Mercury Switches

The following thermostats containing mercury switches were observed during this study:

Building	Description	Quantity
1192	None	None
1192C	None	None
1192D	Honeywell Located in Hall of Original Construction	1
1192E	None	None



#### 4.4 Other Hazardous Conditions/Materials

In addition to those listed above, the following potentially hazardous conditions and/or materials were observed during this study:

Building	Description
1192	None
1192C	None
1192D	None
1192E	None

**Note:** All fluorescent light bulbs within all structures observed during this study should be presumed to contain mercury.



HAZARDOUS MATERIALS STUDY  
NASA LANGLEY RESEARCH CENTER  
BUILDING 1192 COMPLEX

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## TABLES

TABLE 1a  
**BULK ASBESTOS SAMPLING RESULTS**  
**Building 1192**  
**NASA Langley Research Center**  
**Hampton, Virginia**  
 Survey Date: October 11, 2005

Sample ID	Material Description	Material Location	Asbestos Type	Asbestos Percent	Condition	Friable/Non-friable
1192-10	9" x 9" Green Floor Tile and Associated Black Mastic	Throughout 1 <sup>st</sup> Floor (Tile removed from 110, but mastic remains)	Chrysotile	5%	Good	Non-Friable
1192-11	Leveling Compound	Floor of Doorways in Original Structure	ND	ND	Good	Non-Friable
1192-12	Brown Cove Base Molding and Associated Tan Mastic	Throughout	ND	ND	Good	Non-Friable
1192-13	White 12" x 12" Floor Tile And Associated Tan Adhesive	Top Layer in S1A and S2A	ND	ND	Good	Non-Friable
1192-14	Floor Tile And Associated Black Mastic	Bottom Layer in S1A and S2A	Chrysotile	2%	Good	Non-Friable
1192-15	Beige 12" x 12" Floor Tile And Associated Yellow Adhesive	Rooms 128 & 227	Chrysotile	8%	Good	Non-Friable
1192-16	Black Mastic	Under Rubber Stair Treads in Stairwells	ND	ND	Good	Non-Friable
1192-17	Hand-Applied (mudded) Pipe Insulation and White Canvas Covering	10" Diameter Pipe in Room 110	ND	ND	Good	Friable

ND = Not Detected    SF = Square Feet    LF = Linear Feet    NA = Not Analyzed  
 Condition - Good = <1% damaged, Damaged = 1-25% localized/1-10% distributed, Significantly Damaged = >25% localized/>10% distributed

TABLE 1a  
BULK ASBESTOS SAMPLING RESULTS

Building 1192  
NASA Langley Research Center  
Hampton, Virginia

Survey Date: October 11, 2005

Sample ID	Material Description	Material Location	Asbestos Type	Asbestos Percent	Condition	Friable/Non-friable
1192-18	Hand-Applied (Mudded) Pipe Fitting Insulation	Fittings of 10" Diameter Pipe in Room 110	ND	ND	Good	Friable
1192-19	Hand-Applied (Mudded) Pipe Fitting Insulation	Fittings of 5" Diameter Pipe in Room 110	ND	ND	Good	Non-Friable
1192-20	9" x 9" Light Brown Floor Tile and Associated Black Mastic	Room 210 Under Carpet	Chrysotile	7%	Good	Non-Friable
1192-21	12" x 12" Tan Floor Tile and Associated Black Mastic	Room 210 (interspersed with Sample 20), Rom 200, Landing of Stairwell at Center of Structure	ND	ND	Good	Non-Friable
1192-22	Hand-Applied (mudded) Pipe Insulation	Roof Drain Pipe and Roof Penetrations	ND	ND	Good	Friable
1192-23	White Textured Ceiling Material	Front and Rear Entry Awning Ceilings	ND	ND	Good	Non-Friable
1192-24	Drywall & Joint Compound Composite Sample	Interior Dividing Walls in the Original Structure	Chrysotile	<1%	Good	Non-Friable
1192-25	Drywall & Joint Compound Composite Sample	Interior Dividing Walls in the Original Structure	Chrysotile	<1%	Good	Non-Friable
1192-26	Drywall & Joint Compound Composite Sample	Interior Dividing Walls in the Original Structure	Chrysotile	<1%	Good	Non-Friable

ND = Not Detected SF = Square Feet LF = Linear Feet NA = Not Analyzed  
 Condition - Good = <1% damaged, Damaged = 1-25% localized/1-10% distributed, Significantly Damaged = >25% localized/>10% distributed

TABLE 1b  
BULK ASBESTOS SAMPLING RESULTS

Building 1192C  
NASA Langley Research Center  
Hampton, Virginia

Survey Date: October 17, 2005

Sample ID	Material Description	Material Location	Asbestos Type	Asbestos Percent	Condition	Friable/ Non-friable
1192C-1	12" x 12" Acoustic Tiles and Associated Brown Mastic	Wall Behind Room 159	ND	ND	Good	Friable
1192C-2	Brown Cove Base Molding And Associated Tan Mastic	Small Room Between 157 and 159	ND	ND	Good	Non-Friable
1192C-3	Joint Compound	Walls Throughout	ND	ND	Good	Friable
1192C-4	Drywall	Walls Throughout	ND	ND	Good	Non-Friable
1192C-5	Blue Cove Base Molding And Associated Tan Mastic	Throughout Except Small Room Between 157 and 159	ND	ND	Good	Non-Friable
1192C-6	12" x 12" White Floor Tile and Associated Yellow Glue	Room 167	ND	ND	Good	Non-Friable
1192C-7	Gray Mastic	On Stainless Steel Sink in 132	ND	ND	Good	Non-Friable
1192C-8	White Canvas Covering	Ductwork Throughout	ND	ND	Good	Non-Friable

ND = Not Detected SF = Square Feet LF = Linear Feet NA = Not Analyzed  
 Condition - Good = <1% damaged, Damaged = 1-25% localized/1-10% distributed, Significantly Damaged = >25% localized/>10% distributed

TABLE 1b  
BULK ASBESTOS SAMPLING RESULTS

Building 1192C  
NASA Langley Research Center  
Hampton, Virginia

Survey Date: October 17, 2005

Sample ID	Material Description	Material Location	Asbestos Type	Asbestos Percent	Condition	Friable/ Non-friable
1192C-9	Black Vibration Damper Cloth	Air Handler – Left Rear of Mechanical Room	ND	ND	Good	Non-Friable
1192C-10	Black Vibration Damper Cloth	Air Handler – Near Entrance of Mechanical Room	ND	ND	Good	Non-Friable
1192C-11	Gray Mastic	Seams of Ductwork Throughout	ND	ND	Good	Non-Friable
1192C-12	White Mastic	Ends of Fiberglass Pipe Insulation	ND	ND	Good	Non-Friable

ND = Not Detected SF = Square Feet LF = Linear Feet NA = Not Analyzed  
Condition - Good = <1% damaged, Damaged = 1-25% localized/1-10% distributed, Significantly Damaged = >25% localized/>10% distributed

TABLE 1c  
BULK ASBESTOS SAMPLING RESULTS

Building 1192D  
NASA Langley Research Center  
Hampton, Virginia

Survey Date: October 12, 2005

Sample ID	Material Description	Material Location	Asbestos Type	Asbestos Percent	Condition	Friable/Non-friable
1192D-1	Plaster and Textured Ceiling Material	Ceiling of Front Entry Awning	ND	ND	Good	Non-Friable
1192D-2	9" x 9" White Floor Tile and Associated Black Mastic	Throughout Original Construction	Chrysotile	2%	Good	Non-Friable
1192D-3	Drywall And Joint Compound	Dividing Walls Between 173, 175, 177 and 179	ND	ND	Good	Non-Friable
1192D-4	Brown Cove Base Molding And Associated Tan Mastic	Throughout	Chrysotile	<1%	Good	Non-Friable
1192D-5	White Mastic	Joints of Fiberglass Duct Insulation Above Ceilings Throughout	ND	ND	Good	Non-Friable

ND = Not Detected SF = Square Feet LF = Linear Feet NA = Not Analyzed  
Condition - Good = <1% damaged, Damaged = 1-25% localized/1-10% distributed, Significantly Damaged = >25% localized/>10% distributed

TABLE 1d  
BULK ASBESTOS SAMPLING RESULTS

Building 1192E  
NASA Langley Research Center  
Hampton, Virginia

Survey Date: October 12, 2005

Sample ID	Material Description	Material Location	Asbestos Type	Asbestos Percent	Condition	Friable/Non-friable
1192E-1	White Caulking	Perimeters of Exterior Doors	Chrysotile	5%	Good	Non-Friable
1192E-2	Hand-Applied (mudded) Pipe Insulation	Roof Drains	ND	ND	Good	Friable
1192E-3	White Mastic	Joints of Fiberglass Duct Insulation Above Ceilings Throughout	ND	ND	Good	Non-Friable
1192E-4	Brown Mastic	Associated with Black 4" Cove Base Molding on all Drywall Walls	ND	ND	Good	Non-Friable
1192E-5	12" x 12" Beige Floor Tile and Associated Black Mastic	107a, 118a, 118b, Hall Outside 120 & 120a, Rear Entrance	Chrysotile	3%	Good	Non-Friable
1192E-6	Plaster	Ceilings of 118, 118a, 118b, 120, 120a	ND	ND	Good	Non-Friable
1192E-7	Hand-Applied (mudded) Pipe Joint Insulation	On Abandoned Water Pipes Above Ceilings of the Restrooms and Adjacent Halls	Chrysotile	5%	Good	Friable
1192E-8	Drywall And Joint Compound	Walls Throughout Structure	ND	ND	Good	Non-Friable

ND = Not Detected SF = Square Feet LF = Linear Feet NA = Not Analyzed  
Condition - Good = <1% damaged, Damaged = 1-25% localized/1-10% distributed, Significantly Damaged = >25% localized/>10% distributed

TABLE 1a  
BULK ASBESTOS SAMPLING RESULTS

Building 1192  
NASA Langley Research Center  
Hampton, Virginia

Survey Date: October 11, 2005

Sample ID	Material Description	Material Location	Asbestos Type	Asbestos Percent	Condition	Friable/Non-Friable
1192-1	White Caulk	Exterior Brick Seams	ND	ND	Good	Non-Friable
1192-2	White Caulk	Perimeter of Exterior Doors	Chrysotile	6%	Good	Non-Friable
1192-3	White Caulk	Perimeter of Exterior Windows	Chrysotile	8%	Good	Non-Friable
1192-4a	Plaster	Perimeter Walls of Original Structure	ND	ND	Good	Non-Friable
1192-4b						
1192-4c						
1192-5	Drywall And Joint Compound	Dividing Walls of Original Structure	ND	ND	Good	Non-Friable
1192-6	2' x 2' White, Fissured Ceiling Tile	Throughout First Floor of Original Structure	ND	ND	Good	Friable
1192-7	Drywall And Joint Compound	Perimeter Walls of Addition	ND	ND	Good	Non-Friable
1192-8	Prefinished, 2' Wide Drywall	Dividing Walls of Addition	ND	ND	Good	Non-Friable
1192-9	2' x 4' White, Fissured Ceiling Tile	Addition	ND	ND	Good	Friable

ND = Not Detected SF = Square Feet LF = Linear Feet NA = Not Analyzed  
 Condition - Good = <1% damaged, Damaged = 1-25% localized/1-10% distributed, Significantly Damaged = >25% localized/>10% distributed



HAZARDOUS MATERIALS STUDY  
NASA LANGLEY RESEARCH CENTER  
BUILDING 1192 COMPLEX

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## DRAWINGS

This new locator tool has been released for general use on the center. Please submit any comments or suggestions to the GIS Development team. If you are having problems with the new locator the old tool is still available [here](#).

**Note : Room(s) 800 not found in building 1192**

**Locate**

Search :

NASA LaRC

View :

Room Level

Building :

1192

Room (optional) :

800

Show

**Options**

Room Numbers

Map Size : Small

Printable Map

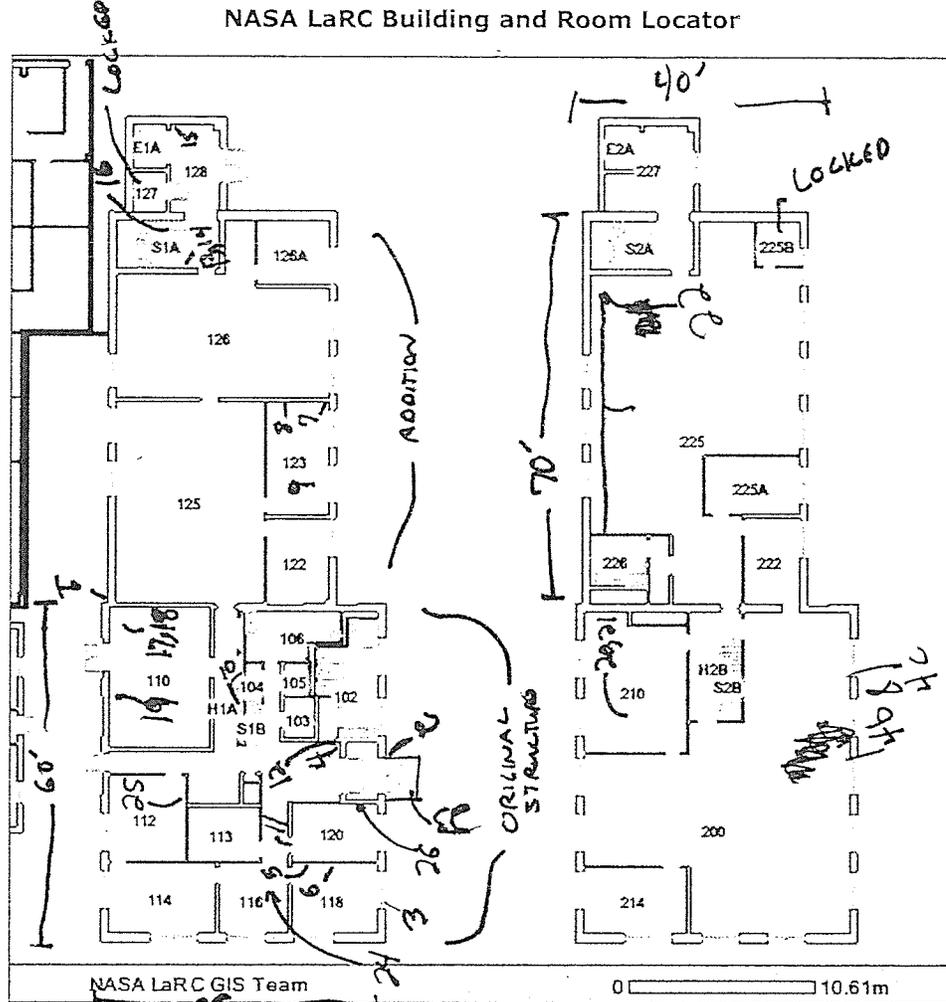
Export to PDF

Export to DXF

Export to Shapefile

Need Help ??

**NASA LaRC Building and Room Locator**



Click on map to :  
Zoom In 2x

Area Of Interest :  
Zoom To ...

This map should not be used for survey accuracy.  
Responsible NASA Official: William B. Ball  
Page Curator: GIS Team  
Page Generated: 2005-10-11 10:13:06 EDT



This new locator tool has been released for general use on the center.  
Please submit any comments or suggestions to the GIS Development team.  
If you are having problems with the new locator the old tool is still available [here](#).

**Note : Room(s) 800 not found in building 1192C**

**Locate**

**NASA LaRC Building and Room Locator**

Search :

NASA LaRC

View :

Room Level

Building :

1192C

Room (optional) :

800

Show

**Options**

Room Numbers

Map Size : Small

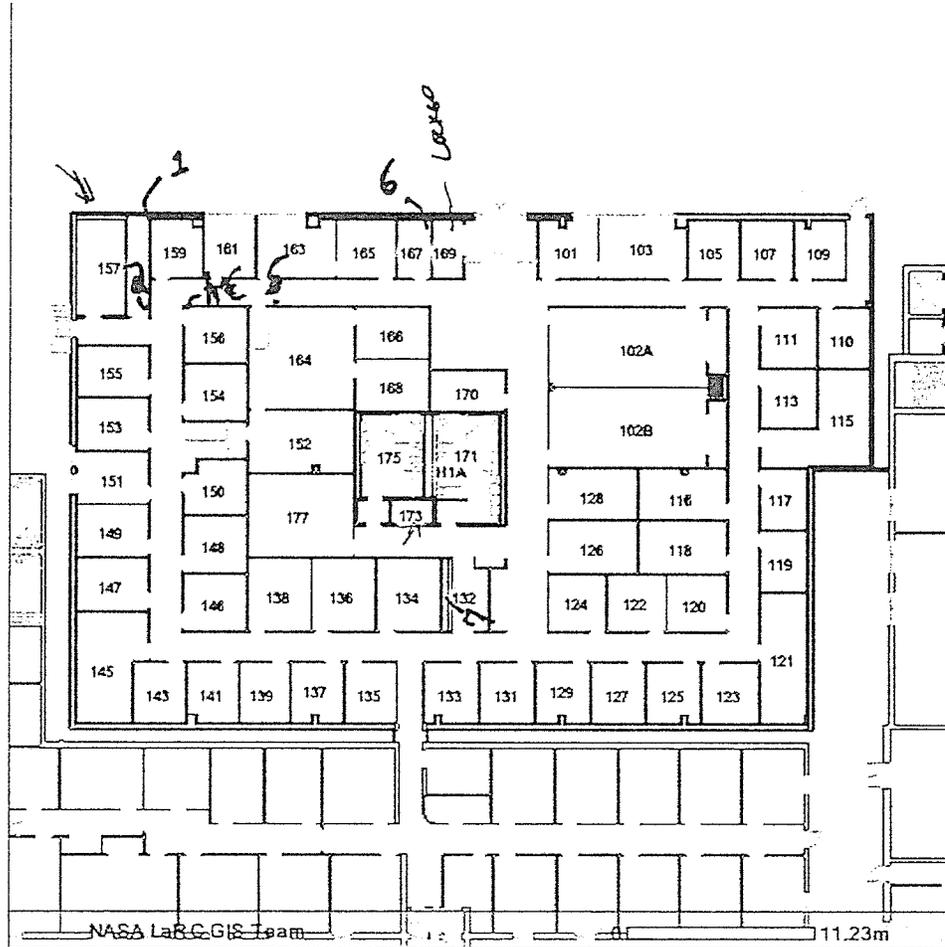
Printable Map

Export to PDF

Export to DXF

Export to Shapefile

Need Help ??



Click on map to :

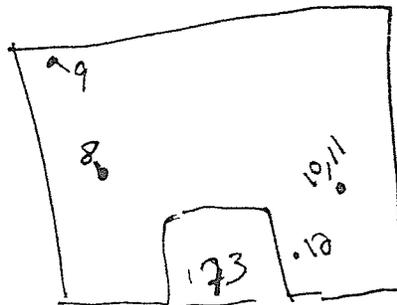
Zoom In 2x

Area Of Interest :

Zoom To ...

This map should not be used for survey accuracy.  
Responsible NASA Official: William B. Ball  
Page Curator: GIS Team  
Page Generated: 2005-10-11 10:13:31 EDT

*MESA ROOM  
ABOVE BATHROOMS*  
↓



This new locator tool has been released for general use on the center. Please submit any comments or suggestions to the GIS Development team. If you are having problems with the new locator the old tool is still available here.

Note : Room(s) 800 not found in building 1192D

Locate

NASA LaRC Building and Room Locator

Search :

NASA LaRC

View :

Room Level

Building :

1192D

Room (optional) :

800

Show

Options

Room Numbers

Map Size : Small

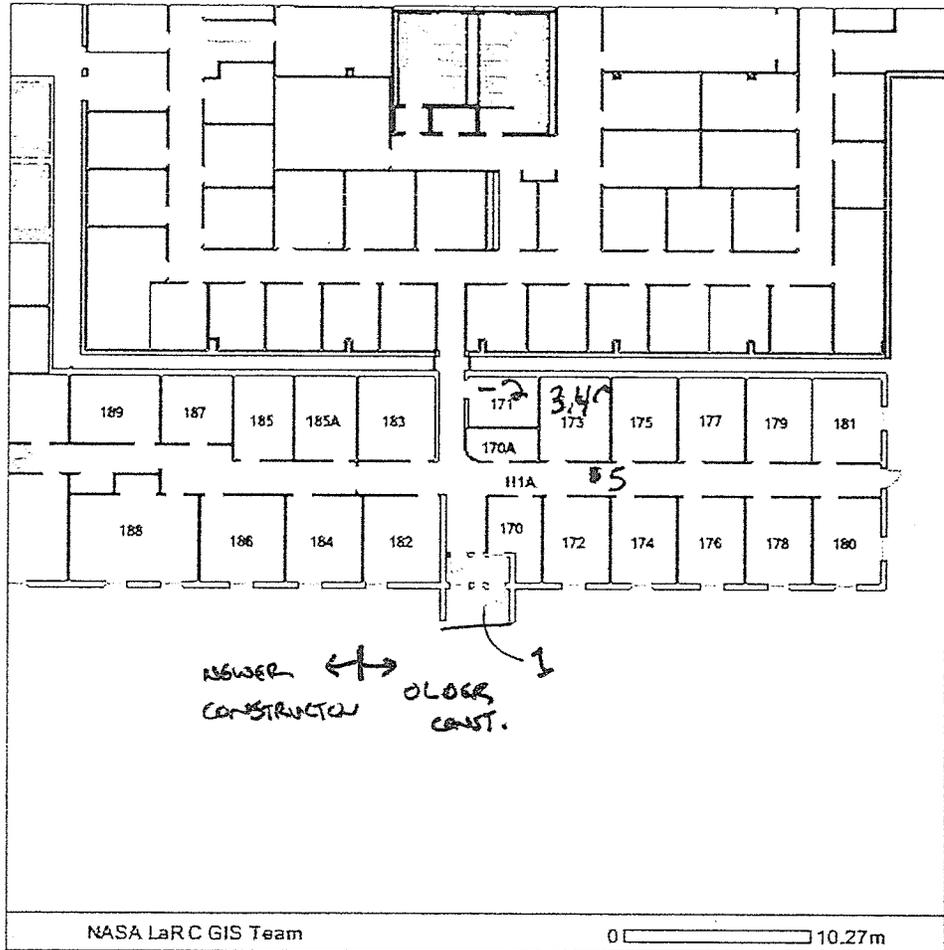
Printable Map

Export to PDF

Export to DXF

Export to Shapefile

Need Help ??



Click on map to :

Zoom In 2x

Area Of Interest :

Zoom To ...

This map should not be used for survey accuracy. Responsible NASA Official: William B. Ball Page Curator: GIS Team Page Generated: 2005-10-11 10:13:51 EDT



FLOORS - CONCRETE PAD - NO CRAWLSPACE. CARPET OVER U.F.T.  
WALLS CINDER BLOCK - A FEW DRYWALL - A FEW IN NEWER SECTION PREFINISHED.  
CEILING 8'x8' ALGIBOX TESTED. DUCTWORK INSUL F. CLAS.  
METAL ROOF DECKING  
ALL EXTERIOR CAULKINGS NON-SUSPECT, NEWER

This new locator tool has been released for general use on the center. Please submit any comments or suggestions to the GIS Development team. If you are having problems with the new locator the old tool is still available [here](#).

**Note : Room(s) 800 not found in building 1192E**

**Locate**

**NASA LaRC Building and Room Locator**

Search :

NASA LaRC 

View :

Room Level 

Building :

1192E

Room (optional) :

800

Show 

**Options**

Room Numbers

Map Size : Small 

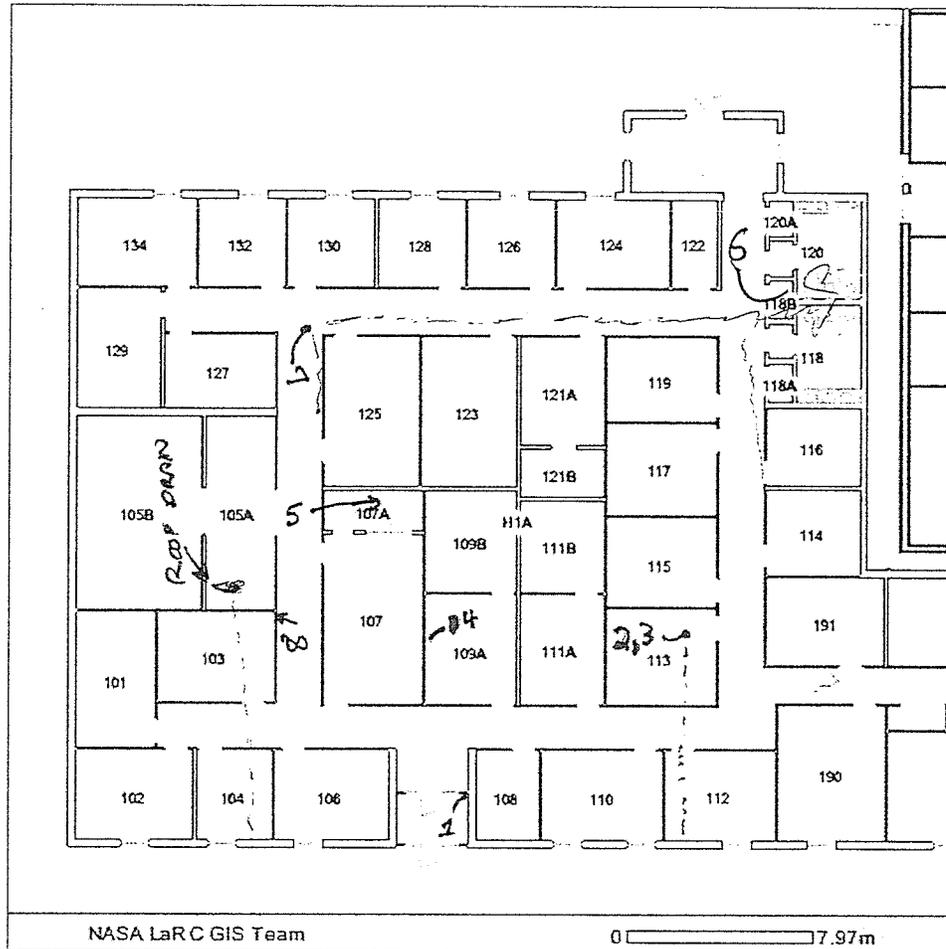
Printable Map 

Export to PDF 

Export to DXF 

Export to Shapefile 

Need Help ?? 



Click on map to :

Zoom In 2x 

Area Of Interest :

Zoom To ... 

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HAZARDOUS MATERIALS STUDY  
NASA LANGLEY RESEARCH CENTER  
BUILDING 645A

---

## APPENDICES



HAZARDOUS MATERIALS STUDY  
NASA LANGLEY RESEARCH CENTER  
BUILDING 645A

---

APPENDIX A  
ASBESTOS SAMPLES ANALYTICAL REPORTS





**AmeriSci Richmond**

13635 GENITO ROAD  
 MIDLOTHIAN, VA 23112  
 TEL: (804) 763-1200 • FAX: (804) 763-1800

**PLM Bulk Asbestos Report**

Environmental Investigations, P.A.	<b>Date Received</b> 10/13/05	AmeriSci Job No.105101245
Attn: Brandie Hadaway	<b>Date Examined</b> 10/14/05	<b>P.O. #</b> NASA-Phase I Demo
5500 Cox Rd Ste E		<b>Page</b> 2 of 9
Glen Allen, VA 23060	<b>RE</b> NASA-Phase I Demo; Building 1192	

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
1192-4b	105101245-05.1	No	NAD
Location: Description: White, Homogeneous, Non-Fibrous, Skim Coat (Plaster) Asbestos Types: Other Material: Non-fibrous 100. %			
1192-4b	105101245-05.2	No	NAD
Location: Description: Gray, Homogeneous, Non-Fibrous, Cementitious, Base Coat (Plaster) Asbestos Types: Other Material: Cellulose Trace, Non-fibrous 100. %			
1192-4c	105101245-06.1	No	NAD
Location: Description: White, Homogeneous, Non-Fibrous, Skim Coat (Plaster) Asbestos Types: Other Material: Non-fibrous 100. %			
1192-4c	105101245-06.2	No	NAD
Location: Description: Gray, Homogeneous, Non-Fibrous, Cementitious, Base Coat (Plaster) Asbestos Types: Other Material: Cellulose Trace, Non-fibrous 100. %			
1192-5	105101245-07.1	No	NAD
Location: Description: White, Homogeneous, Non-Fibrous, Gypsum Board Asbestos Types: Other Material: Cellulose 5. %, Non-fibrous 95. %			



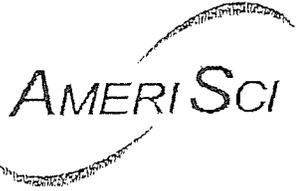
**AmeriSci Richmond**

13635 GENITO ROAD  
 MIDLOTHIAN, VA 23112  
 TEL: (804) 763-1200 • FAX: (804) 763-1800

**PLM Bulk Asbestos Report**

Environmental Investigations, P.A.	<b>Date Received</b> 10/13/05	AmeriSci Job No. 105101245
Attn: Brandie Hadaway	<b>Date Examined</b> 10/14/05	<b>P.O. #</b> NASA-Phase I Demo
5500 Cox Rd Ste E		<b>Page</b> 3 of 9
Glen Allen, VA 23060	<b>RE</b> NASA-Phase I Demo; Building 1192	

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
1192-5 Location:	105101245-07.2	Yes	2 %
Description: Cream, Homogeneous, Non-Fibrous, Joint Compound Asbestos Types: Chrysotile 2. % Other Material: Non-fibrous 98. %			
1192-6 Location:	105101245-08	No	NAD
Description: Gray, Homogeneous, Fibrous, Bulk Material Asbestos Types: Other Material: Fibrous glass 80. %, Non-fibrous 20. %			
1192-7 Location:	105101245-09.1	No	NAD
Description: White, Homogeneous, Non-Fibrous, Gypsum Board Asbestos Types: Other Material: Cellulose 5. %, Non-fibrous 95. %			
1192-7 Location:	105101245-09.2	No	NAD
Description: White, Homogeneous, Non-Fibrous, Joint Compound Asbestos Types: Other Material: Non-fibrous 100. %			
1192-8 Location:	105101245-10	No	NAD
Description: Gray, Homogeneous, Non-Fibrous, Bulk Material Asbestos Types: Other Material: Fibrous glass 4. %, Non-fibrous 96. %			



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**PLM Bulk Asbestos Report**

Environmental Investigations, P.A.  
 Attn: Brandie Hadaway  
 5500 Cox Rd Ste E  
 Glen Allen, VA 23060

**Date Received** 10/13/05  
**Date Examined** 10/14/05

**AmeriSci Job No.** 105101245  
**P.O. #** NASA-Phase I Demo  
**Page** 4 of 9

**RE** NASA-Phase I Demo; Building 1192

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
1192-9 Location:	105101245-11	No	NAD
Description: Gray, Homogeneous, Fibrous, Bulk Material Asbestos Types: Other Material: Cellulose 40. %, Fibrous glass 30. %, Non-fibrous 30. %			
1192-10 Location:	105101245-12T1	Yes	5 %
Description: Green, Homogeneous, Non-Fibrous, Floor Tile Asbestos Types: Chrysotile 5. % Other Material: Non-fibrous 95. %			
1192-10 Location:	105101245-12M2	Yes	8 %
Description: Black, Homogeneous, Non-Fibrous, Mastic Asbestos Types: Chrysotile 8. % Other Material: Non-fibrous 92. %			
1192-11 Location:	105101245-13	No	NAD
Description: White, Homogeneous, Non-Fibrous, Bulk Material Asbestos Types: Other Material: Non-fibrous 100. %			
1192-12 Location:	105101245-14C1	No	NAD
Description: Black, Homogeneous, Non-Fibrous, Cove Base Asbestos Types: Other Material: Non-fibrous 100. %			

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**PLM Bulk Asbestos Report**

Environmental Investigations, P.A.  
 Attn: Brandie Hadaway  
 5500 Cox Rd Ste E  
 Glen Allen, VA 23060

**Date Received** 10/13/05  
**Date Examined** 10/14/05

**AmeriSci Job No.** 105101245  
**P.O. #** NASA-Phase I Demo  
**Page** 5 of 9

**RE** NASA-Phase I Demo; Building 1192

Client No. / HGA	Lab No.	Asbestos Present		Total % Asbestos
		Yes	No	
1192-12	105101245-14M2		No	NAD
Location:				
Description: Beige, Homogeneous, Non-Fibrous, Mastic				
Asbestos Types:				
Other Material: Non-fibrous 100. %				
1192-13	105101245-15T1		No	NAD
Location:				
Description: Gray, Homogeneous, Non-Fibrous, Floor Tile				
Asbestos Types:				
Other Material: Non-fibrous 100. %				
1192-13	105101245-15M2		No	NAD
Location:				
Description: Tan, Homogeneous, Non-Fibrous, Mastic				
Asbestos Types:				
Other Material: Non-fibrous 100. %				
1192-14	105101245-16T1		Yes	2 %
Location:				
Description: Tan, Homogeneous, Non-Fibrous, Floor Tile				
Asbestos Types: Chrysotile 2. %				
Other Material: Non-fibrous 98. %				
1192-14	105101245-16M2		Yes	8 %
Location:				
Description: Black, Homogeneous, Non-Fibrous, Mastic				
Asbestos Types: Chrysotile 8. %				
Other Material: Non-fibrous 92. %				



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Environmental Investigations, P.A.  
 Attn: Brandie Hadaway  
 5500 Cox Rd Ste E  
 Glen Allen, VA 23060

Date Received 10/13/05  
 Date Examined 10/14/05

AmeriSci Job No. 105101245  
 P.O. # NASA-Phase I Demo  
 Page 6 of 9

RE: NASA-Phase I Demo; Building 1192

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
1192-15	105101245-17T1	No	NAD
Location: Description: Tan, Homogeneous, Non-Fibrous, Floor Tile Asbestos Types: Other Material: Non-fibrous 100. %			
1192-15	105101245-17M2	No	NAD
Location: Description: Beige, Homogeneous, Non-Fibrous, Mastic Asbestos Types: Other Material: Non-fibrous 100. %			
1192-16	105101245-18M1	No	NAD
Location: Description: Brown, Homogeneous, Non-Fibrous, Mastic Asbestos Types: Other Material: Non-fibrous 100. %			
1192-16	105101245-18M2	No	NAD
Location: Description: Tan, Homogeneous, Non-Fibrous, Mastic Asbestos Types: Other Material: Non-fibrous 100. %			
1192-17	105101245-19	No	NAD
Location: Description: White, Homogeneous, Fibrous, Bulk Material Asbestos Types: Other Material: Cellulose 10. %, Fibrous glass 5. %, Non-fibrous 85. %			



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**PLM Bulk Asbestos Report**

Environmental Investigations, P.A.      **Date Received** 10/13/05      AmeriSci Job No. 105101245  
 Attn: Brandie Hadaway                      **Date Examined** 10/14/05      **P.O. #** NASA-Phase I Demo  
 5500 Cox Rd Ste E                              **Page** 7 of 9  
 Glen Allen, VA 23060                          **RE** NASA-Phase I Demo; Building 1192

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
1192-18 Location: Description: Gray, Homogeneous, Non-Fibrous, Bulk Material Asbestos Types: Other Material: Fibrous glass 50. %, Non-fibrous 50. %	105101245-20	No	NAD
1192-19 Location: Description: White/Gray, Homogeneous, Fibrous, Bulk Material Asbestos Types: Other Material: Cellulose 10. %, Fibrous glass 30. %, Non-fibrous 60. %	105101245-21	No	NAD
1192-20 Location: Description: Gray, Homogeneous, Non-Fibrous, Floor Tile Asbestos Types: Chrysotile 7. % Other Material: Non-fibrous 93. %	105101245-22T1	Yes	7 %
1192-20 Location: Description: Black, Homogeneous, Non-Fibrous, Mastic Asbestos Types: Chrysotile 8. % Other Material: Non-fibrous 92. %	105101245-22M2	Yes	8 %
1192-21 Location: Description: Brown, Homogeneous, Non-Fibrous, Floor Tile Asbestos Types: Other Material: Non-fibrous 100. %	105101245-23T1	No	NAD



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Environmental Investigations, P.A.  
 Attn: Brandie Hadaway  
 5500 Cox Rd Ste E  
 Glen Allen, VA 23060

Date Received 10/13/05  
 Date Examined 10/14/05

AmeriSci Job No. 105101245  
 P.O. # NASA-Phase I Demo  
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RE NASA-Phase I Demo; Building 1192

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
1192-21	105101245-23M2	Yes	5 %
Location: Description: Black, Homogeneous, Non-Fibrous, Mastic Asbestos Types: Chrysotile 5. % Other Material: Non-fibrous 95. %			
1192-21	105101245-23M3	No	NAD
Location: Description: Tan, Homogeneous, Non-Fibrous, Mastic Asbestos Types: Other Material: Non-fibrous 100. %			
1192-22	105101245-24	No	NAD
Location: Description: Gray, Homogeneous, Non-Fibrous, Bulk Material Asbestos Types: Other Material: Fibrous glass 40. %, Non-fibrous 60. %			
1192-23	105101245-25	No	NAD
Location: Description: White, Homogeneous, Non-Fibrous, Bulk Material Asbestos Types: Other Material: Non-fibrous 100. %			

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**PLM Bulk Asbestos Report**Environmental Investigations, P.A.  
Attn: Brandie Hadaway  
5500 Cox Rd Ste E  
Glen Allen, VA 23060Date Received 10/13/05  
Date Examined 10/14/05AmeriSci Job No. 105101245  
P.O. # NASA-Phase I Demo  
Page 9 of 9

RE NASA-Phase I Demo; Building 1192

**Reporting Notes:**

Analyzed by: William M Dunstan William M. Dunstan Date 10/24/05  
\*NAD/NSD = no asbestos detected; Detection Limit <1%; Reporting Limits: CVES = 1%, 400 Pt Ct = 0.25%, 1000 Pt Ct = 0.1%; NA = not analyzed; NA/PS = not analyzed / positive stop; PLM Bulk Asbestos Analysis by EPA 600/M4-82-020 per 40 CFR 763 (NVLAP Lab #101904-0) and ELAP PLM Analysis Protocol 198.1 for New York samples (NYSDOH ELAP Lab # 10984); CA ELAP Lab # 2508; Note: PLM is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. TEM is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos-containing in New York State (also see EPA Advisory for floor tile, FR 59, 146, 38970, 8/1/94). National Institute of Standards and Technology Accreditation requirements mandate that this report must not be reproduced except in full without the approval of the laboratory. This PLM report relates ONLY to the items tested.  
Reviewed By: \_\_\_\_\_


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## PLM Bulk Asbestos Report

Environmental Investigations, P.A.  
Attn: Brandie Hadaway  
5500 Cox Rd Ste E  
Glen Allen, VA 23060

Date Received 10/27/05

AmeriSci Job No. 105101543

Date Examined 10/28/05

P.O. # IHRI050473.00

Page 1 of 1

RE IHRI050473.00; NASA New Town Phase 1; Bldg 1192  
Walls

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
1192-24	105101543-01	Yes	< 1.0%

Location:

Description: White/Brown/Cream, Heterogeneous, Non-Fibrous, Composite  
Asbestos Types: Chrysotile Trace  
Other Material: Cellulose 10. %, Non-fibrous 90. %

1192-25	105101543-02	Yes	< 1.0%
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Location:

Description: White/Brown/Cream, Heterogeneous, Non-Fibrous, Composite  
Asbestos Types: Chrysotile Trace  
Other Material: Cellulose 10. %, Non-fibrous 90. %

1192-26	105101543-03	Yes	< 1.0%
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Location:

Description: White/Brown/Cream, Heterogeneous, Non-Fibrous, Composite  
Asbestos Types: Chrysotile Trace  
Other Material: Cellulose 10. %, Non-fibrous 90. %

### Reporting Notes:

Analyzed by: Jean L. Mayes

Date 10/28/05

\*NAD = no asbestos detected, Detection Limit < 1%, Reporting Limits: CVES = 1%, 400 Pt Ct = 0.25%, 1000 Pt Ct = 0.1%; "Present" or NVA = "No Visible Asbestos" are observations made during a qualitative analysis; NA = not analyzed; NA/PS = not analyzed / positive stop; PLM Bulk Asbestos Analysis by EPA 600/M4-82-020 per 40 CFR 763 (NVLAP Lab #101904-0) and ELAP PLM Analysis Protocol 198.1 for New York samples (NYSDOH ELAP Lab # 10984); CA ELAP Lab # 2508; Note: PLM is not consistently reliable in detecting asbestos in floor coverings and similar NOB materials. TEM is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos-containing in New York State (also see EPA Advisory for floor tile, FR 59, 146, 38970, 8/1/94). NIST Accreditation requirements mandate that this report must not be reproduced except in full without the approval of the laboratory. This PLM report relates ONLY to the items tested.

Reviewed By: \_\_\_\_\_



## PLM Bulk Asbestos Report

Environmental Investigations, P.A.  
Attn: Brandie Hadaway  
5500 Cox Rd Ste E  
Glen Allen, VA 23060

Date Received 10/18/05  
Date Examined 10/18/05

AmeriSci Job No.105101339  
P.O. # IHRI050473.00  
Page 1 of 4

RE IHRI050473.00; Nasa Langley; Building 1192-C

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
1192C-1	105101339-01.1 Location: Bldg. 1192C	No	NAD
Description: Brown, Homogeneous, Non-Fibrous, Mastic Asbestos Types: Other Material: Non-fibrous 100. %			
1192C-1	105101339-01.2 Location: Bldg. 1192C	No	NAD
Description: White - Tan, Heterogeneous, Fibrous, Wallboard Asbestos Types: Other Material: Cellulose 80. %, Non-fibrous 20. %			
1192C-2	105101339-02T1 Location: Bldg. 1192C	No	NAD
Description: Black, Homogeneous, Non-Fibrous, Base Cove Asbestos Types: Other Material: Non-fibrous 100. %			
1192C-2	105101339-02M1 Location: Bldg. 1192C	No	NAD
Description: Cream, Homogeneous, Non-Fibrous, Mastic Asbestos Types: Other Material: Cellulose 2. %, Non-fibrous 98. %			
1192C-3	105101339-03 Location: Bldg. 1192C	No	NAD
Description: White, Homogeneous, Non-Fibrous, Bulk Material Asbestos Types: Other Material: Non-fibrous 100. %			



## PLM Bulk Asbestos Report

Environmental Investigations, P.A.  
Attn: Brandie Hadaway  
5500 Cox Rd Ste E  
Glen Allen, VA 23060

Date Received 10/18/05

AmeriSci Job No. 105101339

Date Examined 10/18/05

P.O. # IHRI050473.00

Page 2 of 4

RE IHRI050473.00; Nasa Langley; Building 1192-C

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Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
1192C-4	105101339-04	No	NAD

Location: Bldg. 1192C

Description: White, Heterogeneous, Non-Fibrous, Bulk Material

Asbestos Types:

Other Material: Cellulose 2. %, Fibrous glass 4. %, Non-fibrous 94. %

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1192C-5	105101339-05T1	No	NAD
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Location: Bldg. 1192C

Description: Blue / Gray, Homogeneous, Non-Fibrous, Base Cove

Asbestos Types:

Other Material: Non-fibrous 100. %

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1192C-5	105101339-05M1	No	NAD
---------	----------------	----	-----

Location: Bldg. 1192C

Description: Lt. Tan, Homogeneous, Non-Fibrous, Mastic

Asbestos Types:

Other Material: Non-fibrous 100. %

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1192C-6	105101339-06T1	No	NAD
---------	----------------	----	-----

Location: Bldg. 1192C

Description: White w/ Blue, Homogeneous, Non-Fibrous, Floor Tile

Asbestos Types:

Other Material: Non-fibrous 100. %

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1192C-6	105101339-06M1	No	NAD
---------	----------------	----	-----

Location: Bldg. 1192C

Description: Yellow, Homogeneous, Non-Fibrous, Mastic

Asbestos Types:

Other Material: Synthetic fibers 2. %, Non-fibrous 98. %



## PLM Bulk Asbestos Report

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5500 Cox Rd Ste E  
Glen Allen , VA 23060

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Date Examined 10/18/05

AmeriSci Job No.105101339  
P.O. # IHRI050473.00  
Page 3 of 4

RE IHRI050473.00; Nasa Langley; Building 1192-C

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
1192C-7 Location: Bldg. 1192C Description: Gray, Heterogeneous, Fibrous, Bulk Material Asbestos Types: Other Material: Cellulose 10. %, Non-fibrous 90. %	105101339-07	No	NAD
1192C-8 Location: Bldg. 1192C Description: White, Homogeneous, Fibrous, Bulk Material Asbestos Types: Other Material: Fibrous glass 95. %, Non-fibrous 5. %	105101339-08	No	NAD
1192C-9 Location: Bldg. 1192C Description: Black & White, Heterogeneous, Fibrous, Bulk Material Asbestos Types: Other Material: Fibrous glass 70. %, Non-fibrous 30. %	105101339-09	No	NAD
1192C-10 Location: Bldg. 1192C Description: Black - Lt.Gray, Heterogeneous, Non-Fibrous, Bulk Material Asbestos Types: Other Material: Synthetic fibers 10. %, Non-fibrous 90. %	105101339-10	No	NAD
1192C-11 Location: Bldg. 1192C Description: Lt. Gray, Heterogeneous, Non-Fibrous, Bulk Material Asbestos Types: Other Material: Synthetic fibers 7. %, Non-fibrous 93. %	105101339-11	No	NAD



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## PLM Bulk Asbestos Report

Environmental Investigations, P.A.  
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AmeriSci Job No.105101339  
P.O. # IHRI050473.00  
Page 4 of 4

RE IHRI050473.00; Nasa Langley; Building 1192-C

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
1192C-12 Location: Bldg. 1192C  Description: White, Heterogeneous, Non-Fibrous, Mastic or Caulk Asbestos Types: Other Material: Non-fibrous 100. %	105101339-12.1	No	NAD
1192C-12 Location: Bldg. 1192C  Description: Yellow, Heterogeneous, Fibrous, Insulation Asbestos Types: Other Material: Fibrous glass 85. %, Non-fibrous 15. %	105101339-12.2	No	NAD

### Reporting Notes:

Analyzed by: C. David Mintz \_\_\_\_\_ Date \_\_\_\_\_  
\*NAD/NSD = no asbestos detected; Detection Limit <1%; Reporting Limits: CVES = 1%, 400 Pt Ct = 0.25%, 1000 Pt Ct = 0.1%; NA = not analyzed; NA/PS = not analyzed / positive stop; PLM Bulk Asbestos Analysis by EPA 600/M4-82-020 per 40 CFR 763 (NVLAP Lab #101904-0) and ELAP PLM Analysis Protocol 198.1 for New York samples (NYSDOH ELAP Lab # 10984); CA ELAP Lab # 2508; Note: PLM is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. TEM is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos-containing in New York State (also see EPA Advisory for floor tile, FR 59, 146, 38970, 8/1/94). National Institute of Standards and Technology Accreditation requirements mandate that this report must not be reproduced except in full without the approval of the laboratory. This PLM report relates ONLY to the items tested.  
Reviewed By: \_\_\_\_\_

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**PLM Bulk Asbestos Report**

Environmental Investigations, P.A.  
Attn: Brandie Hadaway  
5500 Cox Rd Ste E  
Glen Allen, VA 23060

Date Received 10/13/05

Date Examined 10/14/05

RE NASA-Phase I Demo; Building 1192D

AmeriSci Job No. 105101244

P.O. # NASA-Phase I Demo

Page 1 of 3

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
1192D-1	105101244-01.1	No	NAD
Location:			
Description: White, Heterogeneous, Non-Fibrous, Skim Coat (Plaster)			
Asbestos Types:			
Other Material: Non-fibrous 100. %			
1192D-1	105101244-01.2	No	NAD
Location:			
Description: Beige, Heterogeneous, Non-Fibrous, Base Coat (Plaster)			
Asbestos Types:			
Other Material: Cellulose 2. %, Non-fibrous 98. %			
1192D-2	105101244-02T1	Yes	2 %
Location:			
Description: Off White, Heterogeneous, Non-Fibrous, Floor Tile			
Asbestos Types: Chrysotile 2. %			
Other Material: Non-fibrous 98. %			
1192D-2	105101244-02M1	Yes	8 %
Location:			
Description: Black, Heterogeneous, Non-Fibrous, Mastic			
Asbestos Types: Chrysotile 8. %			
Other Material: Non-fibrous 92. %			
1192D-3	105101244-03.1	Yes	< 1. %
Location:			
Description: Off White, Homogeneous, Non-Fibrous, Joint Compound			
Asbestos Types: Chrysotile Trace			
Other Material: Non-fibrous 100. %			

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 MIDLOTHIAN, VA 23112  
 TEL: (804) 763-1200 • FAX: (804) 763-1800

## PLM Bulk Asbestos Report

Environmental Investigations, P.A.  
 Attn: Brandie Hadaway  
 5500 Cox Rd Ste E  
 Glen Allen, VA 23060

Date Received 10/13/05

Date Examined 10/14/05

AmeriSci Job No. 105101244

P.O. # NASA-Phase I Demo

Page 2 of 3

RE NASA-Phase I Demo; Building 1192D

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
1192D-3	105101244-03.2	No	NAD

Location:

Description: Off-White/Brown, Homogeneous, Non-Fibrous, Drywall  
 Asbestos Types:  
 Other Material: Cellulose 13. %, Non-fibrous 87. %

1192D-4	105101244-04C1	No	NAD
---------	----------------	----	-----

Location:

Description: Brown, Homogeneous, Non-Fibrous, Base Cove  
 Asbestos Types:  
 Other Material: Non-fibrous 100. %

1192D-4	105101244-04M1	No	NAD
---------	----------------	----	-----

Location:

Description: Yellow/Tan, Homogeneous, Non-Fibrous, Mastic  
 Asbestos Types:  
 Other Material: Non-fibrous 100. %

1192D-5	105101244-05	Yes	7 %
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Location:

Description: White, Homogeneous, Non-Fibrous, Bulk Material  
 Asbestos Types: Chrysotile 5. %, Tremolite 2. %  
 Other Material: Non-fibrous 93. %



**AmeriSci Richmond**

13635 GENITO ROAD  
MIDLOTHIAN, VA 23112  
TEL: (804) 763-1200 • FAX: (804) 763-1800

**PLM Bulk Asbestos Report**

Environmental Investigations, P.A.  
Attn: Brandie Hadaway  
5500 Cox Rd Ste E  
Glen Allen , VA 23060

Date Received 10/13/05  
Date Examined 10/14/05

AmeriSci Job No.105101244  
P.O. # NASA-Phase I Demo  
Page 3 of 3

RE NASA-Phase I Demo; Building 1192D

**Reporting Notes:**

Analyzed by: Gordon T. Saleeby Gordon T. Saleeby Date Oct 14, 2005  
\*NAD/NSD = no asbestos detected; Detection Limit <1%; Reporting Limits: CVES = 1%, 400 Pt Ct = 0.25%, 1000 Pt Ct = 0.1%; NA = not analyzed; NA/PS = not analyzed / positive stop; PLM Bulk Asbestos Analysis by EPA 600/M4-82-020 per 40 CFR 763 (NVLAP Lab #101904-0) and ELAP PLM Analysis Protocol 198.1 for New York samples (NYSDOH ELAP Lab # 10984); CA ELAP Lab # 2508; Note: PLM is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. TEM is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos-containing in New York State (also see EPA Advisory for floor tile, FR 59, 146, 38970, 8/1/94). National Institute of Standards and Technology Accreditation requirements mandate that this report must not be reproduced except in full without the approval of the laboratory. This PLM report relates ONLY to the items tested.

Reviewed By: \_\_\_\_\_



**AmeriSci Richmond**

13635 GENITO ROAD  
 MIDLOTHIAN, VA 23112  
 TEL: (804) 763-1200 • FAX: (804) 763-1800

**PLM Bulk Asbestos Report**

Environmental Investigations, P.A.  
 Attn: Brandie Hadaway  
 5500 Cox Rd Ste E  
 Glen Allen, VA 23060

**Date Received** 10/13/05  
**Date Examined** 10/14/05

**AmeriSci Job No.** 105101242  
**P.O. #** NASA-Phase I Demo  
**Page** 1 of 3

**RE** NASA-Phase I Demo; Building 1192E

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
1192E-1 Location:	105101242-01	<b>Yes</b>	5 %
Description: Lt. Gray, Homogeneous, Non-Fibrous, Caulking Asbestos Types: Chrysotile 5. % Other Material: Non-fibrous 95. %			
1192E-2 Location:	105101242-02	<b>No</b>	NAD
Description: Lt. Gray, Homogeneous, Fibrous, Insulation Asbestos Types: Other Material: Fibrous glass 45. %, Non-fibrous 55. %			
1192E-3 Location:	105101242-03	<b>No</b>	NAD
Description: Ivory/Silver, Heterogeneous, Fibrous, Mastic Asbestos Types: Other Material: Cellulose 25. %, Fibrous glass 15. %, Synthetic fibers 5. %, Non-fibrous 55. %			
1192E-4 Location:	105101242-04	<b>No</b>	NAD
Description: Dark Brown, Heterogeneous, Fibrous, Mastic Asbestos Types: Other Material: Cellulose 12. %, Non-fibrous 88. %			
1192E-5 Location:	105101242-05T1	<b>Yes</b>	3 %
Description: Beige, Homogeneous, Non-Fibrous, Cementitious, Floor Tile Asbestos Types: Chrysotile 3. % Other Material: Non-fibrous 97. %			



**AmeriSci Richmond**

13635 GENITO ROAD  
 MIDLOTHIAN, VA 23112  
 TEL: (804) 763-1200 • FAX: (804) 763-1800

**PLM Bulk Asbestos Report**

Environmental Investigations, P.A.  
 Attn: Brandie Hadaway  
 5500 Cox Rd Ste E  
 Glen Allen, VA 23060

Date Received 10/13/05  
 Date Examined 10/14/05  
 AmeriSci Job No. 105101242  
 P.O. # NASA-Phase I Demo  
 Page 2 of 3  
 RE NASA-Phase I Demo; Building 1192E

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
1192E-5 Location:	105101242-05M1	No	NAD
Description: Black, Homogeneous, Non-Fibrous, Floor Tile Mastic Asbestos Types: Other Material: Non-fibrous 100. %			
1192E-6 Location:	105101242-06.1	No	NAD
Description: White, Homogeneous, Non-Fibrous, Cementitious, Skim Coat (Plaster) Asbestos Types: Other Material: Non-fibrous 100. %			
1192E-6 Location:	105101242-06.2	No	NAD
Description: Gray, Homogeneous, Non-Fibrous, Cementitious, Base Coat (Plaster) Asbestos Types: Other Material: Non-fibrous 100. %			
1192E-7 Location:	105101242-07	Yes	5 %
Description: Off White, Homogeneous, Fibrous, Insulation Asbestos Types: Chrysotile 5. % Other Material: Fibrous glass 40. %, Non-fibrous 55. %			
1192E-8 Location:	105101242-08.1	No	NAD
Description: Off White, Homogeneous, Non-Fibrous, Joint Compound Asbestos Types: Other Material: Non-fibrous 100. %			



**AmeriSci Richmond**

13635 GENITO ROAD  
MIDLOTHIAN, VA 23112  
TEL: (804) 763-1200 • FAX: (804) 763-1800

**PLM Bulk Asbestos Report**

Environmental Investigations, P.A.  
Attn: Brandie Hadaway  
5500 Cox Rd Ste E  
Glen Allen, VA 23060

Date Received 10/13/05  
Date Examined 10/14/05

AmeriSci Job No.105101242  
P.O. # NASA-Phase I Demo  
Page 3 of 3

RE NASA-Phase I Demo; Building 1192E

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
1192E-8	105101242-08.2	No	NAD

Location:

Description: Brown/Gray, Heterogeneous, Fibrous, Drywall

Asbestos Types:

Other Material: Cellulose 20. %, Non-fibrous 80. %

**Reporting Notes:**

Analyzed by: Donna M. Blackwell Donna M Blackwell Date 10/14/05  
 \*NAD/NSD = no asbestos detected; Detection Limit <1%; Reporting Limlts: CVES = 1%, 400 Pt Ct = 0.25%, 1000 Pt Ct = 0.1%; NA = not analyzed; NA/PS = not analyzed / positive stop; PLM Bulk Asbestos Analysis by EPA 600/M4-82-020 per 40 CFR 763 (NVLAP Lab #101904-0) and ELAP PLM Analysis Protocol 198.1 for New York samples (NYSDOH ELAP Lab # 10984); CA ELAP Lab # 2508; Note: PLM is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. TEM is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos-containing in New York State (also see EPA Advlsory for floor tile, FR 59, 146, 38970, 8/1/94). National Institute of Standards and Technology Accreditation requirements mandate that this report must not be reproduced except in full without the approval of the laboratory. This PLM report relates ONLY to the items tested.  
 Reviewed By: \_\_\_\_\_



HAZARDOUS MATERIALS STUDY  
NASA LANGLEY RESEARCH CENTER  
BUILDING 645A

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APPENDIX B  
TCLP SAMPLES ANALYTICAL REPORTS

**ENVIRONMENTAL HAZARDS SERVICES, L.L.C.**

7469 WHITE PINE ROAD - RICHMOND, VA 23237  
804-275-4788 FAX 804-275-4907

**TCLP (LEAD) ANALYSIS SUMMARY**

CLIENT: Environmental Investigations  
5500 Cox Road, Suite E  
Glen Allen, VA 28060

DATE OF SAMPLING: 17 OCT 2005  
DATE OF RECEIPT: 20 OCT 2005  
DATE OF ANALYSIS: 21 OCT 2005  
DATE OF REPORT: 21 OCT 2005

CLIENT NUMBER: 48-1920 A  
EHS PROJECT #: 2005-10-2879  
PROJECT: Nasa New Town Phase 1

EHS SAMPLE #	CLIENT SAMPLE #/ LABORATORY GROSS DESCRIPTION	SAMPLE WEIGHT (g)	INITIAL pH	CONCENTRATION PPM (mg/L)
02	TCLP 1192/ Brick; Concrete; Soil; Insulation	100	7.03	<0.50
03	TCLP 1192 C/ Wood; Insulation; Concrete; Drywall; Metal	100	8.79	<0.50
04	TCLP 1192 D/ Roof; Insulation; Drywall; Brick; Concrete; Soil	100	8.01	<0.50
05	TCLP 1192 E/ Brick; Soil; Concrete; Insulation	100	7.78	<0.50

**QUALITY CONTROL DATA**

BATCH#:	102105T-1
INCLUSIVE EHS SAMPLE NUMBERS:	01-05
Initial Calibration Verification (5.00ppm Pb)	102% Recovery
Continuing Calibration Verification 5 (5.00ppm Pb)	108% Recovery
Laboratory Control Standard	101% Recovery
Matrix Spike	98.8% Recovery
Duplicate Relative Percent Difference	0.00 RPD
Regulatory Limit	5.0mg/L
Reporting Limit	0.50mg/L
Method Detection Limit	0.060mg/L

METHOD: EPA SW846 1311/8010A/7420

ANALYST: Aubrey Simonds

Reviewed By Authorized Signatory:

*Irma Faszewski*  
Michael A. Mueller, MPH, Laboratory Director  
Howard Varner, General Manager  
Irma Faszewski, Quality Assurance Coordinator  
David Xu, MS, Senior Chemist  
Feng Jiang, MS, Technical Director



HAZARDOUS MATERIALS STUDY  
NASA LANGLEY RESEARCH CENTER  
BUILDING 645A

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APPENDIX C  
PHOTOS



BUILDING 1192 CRAWLSPACE



APPENDIX D  
CERTIFICATION AND ACCREDITATIONS



Department of  
Professional and  
Occupational  
Regulation  
Virginia Board for  
Asbestos, Lead, and  
Home Inspectors

Asbestos Individual License	
NAME:	BAUM, MICHAEL ALLEN
LICENSE TYPE:	ASBESTOS INSPECTOR
LICENSE:	3303002651
CITY, STATE:	RICHMOND, VA
INITIAL CERTIFICATION DATE:	JUNE 26, 2001
EXPIRATION DATE:	JUNE 30, 2006

**Open Enforcement Cases: 0**

File Number:  
NONE

"Open Enforcement Cases" reflect only those complaints for which a departmental investigation has determined that sufficient evidence exists to establish probable cause of a violation of the law or regulations. Only those cases that have proceeded through an investigation to the adjudication stage are displayed. Complaints involving allegations of criminal activity, and cases subject to Alternative Dispute Resolution, are not subject to disclosure and therefore are not displayed.

State law prohibits the disclosure of any information about open enforcement cases [Code of Virginia Section 54.1-108]. Members of the public may review official records and obtain copies only after a complaint investigation is closed.

**Closed Enforcement Cases: 0**

File Number      Disposition      Date Case Closed  
NONE

"Closed Enforcement Cases" reflect complaints closed since 1990. Cases closed without disciplinary action are purged after three years in accordance with DPOR's record retention policy. Complaints involving allegations of criminal activity, and cases subject to Alternative Dispute Resolution, are not subject to disclosure and therefore are not displayed.

To inquire about any disciplinary actions prior to 1990, contact the department's Public Records Section at (804) 367-8583 or [RecordsMgt@dpor.virginia.gov](mailto:RecordsMgt@dpor.virginia.gov).

EXHIBIT B - SOLICITATION NNL14504840E HAZARDOUS  
MATERIALS SURVEY, BUILDING 1213

**NOTE:** This study is partial assessment for information only. Areas that were inaccessible were not included. The quantity amounts have been removed. Piping plans and schedules from the original construction are not available. The Contractor is responsible for reviewing the site and conditions to develop an estimate of the quantities required to provide complete abatement of all hazardous wastes within the facility and scope of the demolition. As noted the crawl space under the facility has deteriorated pipe insulation that is identified as ACM. The contractor shall be responsible for remediation of all ACM prior to facility demolition.

# **HAZARDOUS MATERIALS STUDY**

**Conducted At:**



**Building 1213  
NASA Langley Research Center  
Hampton, Virginia**

**Prepared For:**

**Mainthia Technologies, Inc.  
NASA LaRC Safety and Mission Assurance Support Contract  
Mail Stop 305  
Building 1232  
Hampton, Virginia 23681**

**November 2006**

**HAZARDOUS MATERIALS STUDY**

Conducted at

**Building 1213**  
**NASA Langley Research Center**  
**Hampton, Virginia**

for

**Mainthia Technologies, Inc.**  
**NASA LaRC Safety and Mission Assurance Support Contract**  
**Mail Stop 305**  
**Building 1232**  
**Hampton, Virginia 23681**

**Michael Baum**

*Project Manager*

VA Asbestos Inspector #3303 002651

VA Asbestos Project Designer #3305 001030



---

**Wynston D. Holbrook, II**

*Manager, Industrial Hygiene Services*

VA Asbestos Inspector #3303 001818

VA Asbestos Project Designer #3305 000901

VA Asbestos Management Planner #3304 001175



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Prepared By:

*El, Inc.*

*5500 Cox Road*

*Glen Allen, VA 23060*

*Telephone:*

*(804) 320-9300*

*Fax:*

*(804) 320-9302*

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### TABLES

Bulk Asbestos Sample Tables

### DRAWINGS

Asbestos Sample Location Drawings

### APPENDICES

Appendix A - Asbestos Samples Analytical Report

Appendix B - TCLP Samples Analytical Report

Appendix C - Photos

Appendix D - Certifications and Accreditations



## **1.0 INTRODUCTION**

A Hazardous Materials Study was conducted at building 1213, located at NASA Langley Research Center in Hampton, Virginia on November 9, 2006. The study included a limited asbestos-containing materials survey, lead toxicity characteristic leachate procedure (TCLP) sampling, identification and quantification of PCB Ballasts and thermostats with mercury switches, and visual observation of other hazardous conditions or materials. This study was authorized by Mr. Carter Ficklen of Mainthia Technologies, Inc.



## 2.0 METHODOLOGY

### 2.1 Asbestos Containing Materials Survey

The purpose of the asbestos-containing materials survey was to identify and quantify the asbestos-containing materials (ACMs) present in the facility. A material is defined by the Environmental Protection Agency (EPA) to be asbestos-containing if greater than 1% asbestos by weight is detected in the sample.

Building components which have been generally known to contain asbestos were identified and, where appropriate, sampled for transport to the laboratory. Suspect materials are typically grouped into two categories: friable (able to be crushed or pulverized by hand pressure) and non-friable. Additionally, those materials which are typically non-friable in their normal usage, such as floor tile, may be considered potentially friable. This means that they may be subjected to mechanical abrasion activities (e.g., floor sanding) which would cause them to become friable. Such suspect materials and their typical application are identified in the EPA document entitled, "Guidance for Controlling Asbestos-Containing Materials in Buildings, 1985 Edition."

Legislation has been promulgated by the Department of Labor - Occupational Safety and Health Administration (OSHA) regarding inspection of buildings for ACMs. According to regulations (29 CFR 1910.1001, 29 CFR 1926.1101), a material is presumed to contain asbestos unless it has been demonstrated to be non-asbestos-containing through an asbestos survey. This survey, which includes sampling of suspect ACM, is conducted in accordance with the Asbestos Hazard Emergency Response Act (40 CFR 763 AHERA) guidelines. A material may be considered non-asbestos-containing only if analytical results from this survey report 1% or less than 1% asbestos by weight, in the material.



This survey was supplemented by information contained in previous surveys conducted by Technology Application, Inc. Roofing materials were not collected or analyzed as part of this survey.

## **2.2 Lead Toxicity Characteristic Leachate Procedure (TCLP)**

The purpose of the TCLP analysis was to determine whether the anticipated waste stream to be generated by the demolition of the structure must be disposed of utilizing hazardous waste handling and disposal procedures, as regards to lead. Even with a prior lead survey to provide a baseline on Lead-Based Paints (LBP's) identified on the interior or exterior of the building, the classification of the waste stream should be determined utilizing TCLP analysis. This can greatly lower the cost of waste disposal and limit the liability to the generator under the Resource Conservation and Recovery Act (RCRA).

## **2.3 PCB Ballasts and Other Hazardous Conditions/Materials**

Fluorescent lighting fixtures have the potential to contain two chemical hazards: Polychlorinated Biphenyl (PCB) containing ballasts and elemental mercury in the fluorescent light bulbs themselves.

PCBs are synthetic organic chemicals that were produced in the United States from 1929 to 1977. A major use of PCBs was in fluorescent light fixture ballasts. Concern over adverse health effects caused by PCBs in the environment led Congress in 1976 to enact §6(e) of the Toxic Substances Control Act (TSCA) that included among other things, prohibitions on the manufacture, processing, and distribution in commerce of PCB's.



Nearly all fluorescent light ballasts manufactured prior to 1979 contain PCBs. All ballasts manufactured after July 1, 1978 that do not contain PCB's are required to be clearly marked "NO PCBs". Ballasts without a date of manufacture or clearly marked "NO PCBs" must be assumed to contain PCB's.

A representative number of ballasts within fluorescent light fixtures in the building were inspected. Information including manufacturer and model numbers were recorded. A cross reference was made to known listings of PCB ballast manufacturers to determine if the ballast should be assumed PCB containing. Ballasts were not disassembled. If the ballast was not marked clearly "NO PCBs", the ballast was considered PCB containing.

Electrical transformers also have the potential to contain PCBs, and are presumed to contain PCBs if not clearly marked "NO PCBs."



### 3.0 SAMPLING TECHNIQUES AND LABORATORY ANALYSIS

#### 3.1 Asbestos

During the survey, the building included in the study was inspected and sampled according to homogeneous area. A material or area is considered homogeneous if it is consistent in size, texture, color, and application. All samples were collected in a randomly distributed manner.

Each sample was individually sealed in plastic and submitted to Amerisci Richmond in Midlothian, Virginia for analysis. Amerisci Richmond was accredited by the National Institute of Standards and Technology (NIST) for polarized light microscopy (PLM) analysis of asbestos in bulk materials and under the National Voluntary Laboratory Accreditation Program (NVLAP) at the time of the survey. Samples were analyzed by PLM with dispersion staining techniques (EPA Interim Method for Determination of Asbestos in Bulk Materials, EPA-600/M4-822-020).

The EPA adopted the National Emission Standards for Hazardous Air Pollutants (NESHAP) policy on the analysis of multi-layered asbestos samples (40 CFR Part 61). This policy requires laboratories to prep, analyze, and report, separately, each layer of a multi-layered sample. Any layer containing more than one percent (1%) asbestos is declared an ACM.

Table 1 provides a summary of the sampling activities conducted at the facility, and presents each sample identification, a material description of each homogeneous area, sample location, type and percent of asbestos present, friability and physical condition of the material. A laboratory analytical report provided by Amerisci Richmond has been included in Appendix A.



### 3.2 TCLP

To determine the Toxicity Characteristic (TC) of the construction debris that is anticipated to be generated by the renovation of the structure, a composite sample of the anticipated waste stream of the structure was collected. The composite sample consisted of representative samples of the building components collected in the same weight proportion as will be generated in the entire bulk of the waste stream of the structure. The composite sample was then submitted to Environmental Hazards Services, L.L.C., an accredited laboratory, for TCLP analysis via EPA Method SW846 1311/8010A/7420. This process extracts the leachable lead from the sampled building materials and determines if the concentration is above or below TC regulatory threshold for lead of 5 part per million (ppm). Waste that displays a TC below 5ppm may be treated and disposed of as general construction debris without regard to hazardous waste handling/disposal procedures, as regards to lead.

### 3.3 PCB Ballasts and Other Hazardous Conditions/Materials

No PCBs or other hazardous chemicals other than those described above were sampled or submitted for laboratory analysis during this study. PCB ballasts and other hazardous chemicals were catalogued as described in Section 2.3.



## 4.0 SURVEY RESULTS

### 4.1 Asbestos Containing Materials

The following materials were determined to contain asbestos above regulated levels:

Material	Location	Quantity	Condition	Friability
Paper Duct Wrap with Black Mastic	128, 131		Good	Non-Friable
Black Mastic Under Carpet	144, 131, 139		Good	Non-Friable
9" x 9" Gray Floor Tile & Associated Mastic	133, 133A, 133B, H1D		Good	Non-Friable
9" x 9" Red Floor Tile & Associated Mastic	H1D, 133B		Good	Non-Friable
Transite Wall Panels	H1D, 133, 133A		Good	Non-Friable
9" x 9" Beige Floor Tile & Associated Mastic	133B		Good	Non-Friable
9" x 9" Brown Floor Tile & Associated Mastic	129A, H1A, 142, 144B		Good	Non-Friable
18" x 18" Black Floor Border Tile & Associated Mastic	144A, 144B		Good	Non-Friable
Mastic Associated with 6" Dark Brown Cove Base Molding	142A, 143, 144A, 142, 144, H1A, 144B		Good	Non-Friable
Preformed Pipe Insulation	126, 127 Crawlspace Under Restrooms		Damaged Damaged	Friable Friable
Mudded Pipe Fitting Insulation	126, 118, 117, 127, 109 Crawlspace Under Restrooms		Damaged Damaged	Friable Friable



**HAZARDOUS MATERIALS STUDY  
NASA LANGLEY RESEARCH CENTER  
BUILDING 1213**

12" x 12" Orange Floor Tile & Associated Mastic	109		Good	Non-Friable
Light Fixture Heat Shield	Hall 1		Damaged	Non-Friable
Sink Mastic	117		Good	Non-Friable
Canvas Vibration Damper	118		Good	Non-Friable
Fire Doors	139		Good	Non-Friable
12" x 12" Cream/Green Streaked Floor Tile and Associated Mastic	140, 141		Good	Non-Friable

Laboratory analysis indicated that none of the remaining samples collected and submitted to Amerisci Richmond for analysis contained levels of asbestos above 1%. The analytical results, location, quantities, and condition for the samples collected during this survey are presented in Table 1.

**Notes:** The transite wall panels, fire doors, light fixture heat shield and canvas vibration damper described above were not sampled, but were presumed to contain asbestos. The 9" x 9" floor tiles, black border tile and 12" x 12" orange floor tile were determined to be ACM in a previous survey.

#### **4.2 Toxicity Characteristic Leachate Procedure**

The Toxicity Characteristic (TC) regulatory threshold for lead is 5.0 milligrams per liter (mg/L). TCLP analysis result for building 1213 was <0.50, which is below the regulatory threshold. The waste generated from the renovation of building 1213 can be disposed of as general construction debris.



### 4.3 PCB Ballasts

The following presumed PCB containing fluorescent light ballasts were observed during this study:

Building	Locations	Quantity
1213	H1B	4 Fixtures with 1 Ballast Each
	117	21 Fixtures with 1 Ballast Each

### 4.3 Thermostats with Mercury Switches

The following thermostats containing mercury switches were observed during this study:

Building	Location	Quantity
1213	H1B	1
	141	1

### 4.4 Other Hazardous Conditions/Materials

In addition to those listed above, the following potentially hazardous conditions and/or materials were observed during this study:

Building	Description
1213	None



**HAZARDOUS MATERIALS STUDY  
NASA LANGLEY RESEARCH CENTER  
BUILDING 1213**

---

**Note:** All fluorescent light bulbs within all structures observed during this study should be presumed to contain mercury.



**TABLES**

**TABLE 1  
BULK ASBESTOS SAMPLING RESULTS**

**Building 1213  
NASA Langley Research Center  
Hampton, Virginia**

**Survey Date: November 9, 2006**

<b>Sample ID</b>	<b>Material Description</b>	<b>Sample Location</b>	<b>Asbestos Type</b>	<b>Asbestos Percent</b>	<b>Condition</b>	<b>Friable/ Non-friable</b>
1213-01-0001	2' x 2' Fissured/Pinhole Ceiling Tile	131	ND	ND	Good	Friable
1213-01-0002	2' x 2' Fissured/Pinhole Ceiling Tile	132	ND	ND	Good	Friable
1213-01-0003	2' x 2' Fissured/Pinhole Ceiling Tile	132	ND	ND	Good	Friable
1213-02-0004	Sheetrock and Joint Compound	128	ND	ND	Good	Non-Friable
1213-02-0005	Sheetrock and Joint Compound	127	ND	ND	Good	Non-Friable
1213-02-0006	Sheetrock and Joint Compound	128	ND	ND	Good	Non-Friable
1213-03-0007	Plaster	128	ND	ND	Good	Non-Friable
1213-03-0008	Plaster	127	ND	ND	Good	Non-Friable
1213-03-0009	Plaster	H1D	ND	ND	Good	Non-Friable
1213-04-0010	Paper Duct Wrap / Black Mastic	128	Chrysotile	3%	Good	Non-Friable
1213-04-0011	Paper Duct Wrap / Black Mastic	131	ND	ND	Good	Non-Friable
1213-04-0012	Paper Duct Wrap / Black Mastic	131	ND	ND	Good	Non-Friable
1213-05-0013	Black Mastic Under Carpet	131	Chrysotile	5%	Good	Non-Friable
1213-05-0014	Black Mastic Under Carpet	139	Chrysotile	8%	Good	Non-Friable
1213-05-0015	Black Mastic Under Carpet	144	Chrysotile	8%	Good	Non-Friable
1213-13-0017	Tar Paper Pipe Wrap	134	ND	ND	Good	Non-Friable
1213-13-0018	Tar Paper Pipe Wrap	134	ND	ND	Good	Non-Friable
1213-14-0019	White Pipe Insulation Mastic	134	ND	ND	Good	Non-Friable
1213-14-0020	White Pipe Insulation Mastic	151	ND	ND	Good	Non-Friable
1213-14-0021	White Pipe Insulation Mastic	151	ND	ND	Good	Non-Friable
1213-15-0022	White Duct Mastic	150	ND	ND	Good	Non-Friable

ND = Not Detected    SF = Square Feet    LF = Linear Feet    NA = Not Analyzed  
**Condition** - Good = <1% damaged, Damaged = 1-25% localized/1-10% distributed, Significantly Damaged = >25% localized/>10% distributed

**TABLE 1  
BULK ASBESTOS SAMPLING RESULTS**

**Building 1213  
NASA Langley Research Center  
Hampton, Virginia**

**Survey Date: November 9, 2006**

<b>Sample ID</b>	<b>Material Description</b>	<b>Sample Location</b>	<b>Asbestos Type</b>	<b>Asbestos Percent</b>	<b>Condition</b>	<b>Friable/ Non-friable</b>
1213-15-0023	White Duct Mastic	134	ND	ND	Good	Non-Friable
1213-15-0024	White Duct Mastic	128	ND	ND	Good	Non-Friable
1213-16-0025	White Canvas Tank Wrap	134	ND	ND	Good	Non-Friable
1213-16-0026	White Canvas Tank Wrap	134	ND	ND	Good	Non-Friable
1213-16-0027	White Canvas Tank Wrap	134	ND	ND	Good	Non-Friable
1213-17-0028	2' x 2' Flat Fissured/Pinhole Ceiling Tile	Hall 1	ND	ND	Good	Friable
1213-17-0029	2' x 2' Flat Fissured/Pinhole Ceiling Tile	141	ND	ND	Good	Friable
1213-17-0030	2' x 2' Flat Fissured/Pinhole Ceiling Tile	140	ND	ND	Good	Friable
1213-18-0031	12" x 12" Light Blue Floor Tile and Associated Mastic	Hall 1	ND	ND	Good	Non-Friable
1213-18-0032	12" x 12" Light Blue Floor Tile and Associated Mastic	H1B	ND	ND	Good	Non-Friable
1213-18-0033	12" x 12" Light Blue Floor Tile and Associated Mastic	H1B	ND	ND	Good	Non-Friable
1213-19-0034	4" Light Brown Cove Base Molding and Adhesive	Hall 1	ND	ND	Good	Non-Friable
1213-19-0035	4" Light Brown Cove Base Molding and Adhesive	Hall 1	ND	ND	Good	Non-Friable
1213-19-0036	4" Light Brown Cove Base Molding and Adhesive	Hall 1	ND	ND	Good	Non-Friable
1213-22-0037	6" Dark Brown Cove Base Molding and Associated Adhesive	144B	ND Chrysotile	ND 8%	Good	Non-Friable
1213-22-0038	6" Dark Brown Cove Base Molding and Associated Adhesive	H1A	ND ND	ND ND	Good	Non-Friable
1213-22-0039	6" Dark Brown Cove Base Molding and Associated Adhesive	144A	ND ND	ND ND	Good	Non-Friable
1213-23-0040	2' x 2' Flat, Pinhole Ceiling Tile	H1A	ND	ND	Good	Friable

ND = Not Detected    SF = Square Feet    LF = Linear Feet    NA = Not Analyzed  
**Condition** - Good = <1% damaged, Damaged = 1-25% localized/1-10% distributed, Significantly Damaged = >25% localized/>10% distributed

**TABLE 1  
BULK ASBESTOS SAMPLING RESULTS**

**Building 1213  
NASA Langley Research Center  
Hampton, Virginia**

**Survey Date: November 9, 2006**

<b>Sample ID</b>	<b>Material Description</b>	<b>Sample Location</b>	<b>Asbestos Type</b>	<b>Asbestos Percent</b>	<b>Condition</b>	<b>Friable/ Non-friable</b>
1213-23-0041	2' x 2' Flat, Pinhole Ceiling Tile	144B	ND	ND	Good	Friable
1213-23-0042	2' x 2' Flat, Pinhole Ceiling Tile	144A	ND	ND	Good	Friable
1213-24-0043	6" Light Brown Cove Base and Adhesive	H1A	ND	ND	Good	Non-Friable
1213-24-0044	6" Light Brown Cove Base and Adhesive	H1B	ND	ND	Good	Non-Friable
1213-24-0045	6" Light Brown Cove Base and Adhesive	H1B	ND	ND	Good	Non-Friable
1213-31-0052	2' x 2' Heavily Fissured Ceiling Tile	109	ND	ND	Good	Friable
1213-31-0053	2' x 2' Heavily Fissured Ceiling Tile	109	ND	ND	Good	Friable
1213-31-0054	2' x 2' Heavily Fissured Ceiling Tile	109	ND	ND	Good	Friable
1213-33-0055	6" Black Cove Base and Adhesive	139	ND	ND	Good	Non-Friable
1213-33-0056	6" Black Cove Base and Adhesive	140	ND	ND	Good	Non-Friable
1213-33-0057	6" Black Cove Base and Adhesive	129A	ND	ND	Good	Non-Friable
1213-34-0058	12" x 12" Tan Waffle Pattern Floor Tile and Mastic	H1B	ND	ND	Good	Non-Friable
1213-34-0059	12" x 12" Tan Waffle Pattern Floor Tile and Mastic	H1B	ND	ND	Good	Non-Friable
1213-34-0060	12" x 12" Tan Waffle Pattern Floor Tile and Mastic	H1B	ND	ND	Good	Non-Friable
1213-35-0061	Textured Ceiling Coating	Ext - B	Chrysotile	Trace (<1%)	Good	Non-Friable
1213-35-0062	Textured Ceiling Coating	Ext - L	Chrysotile	Trace (<1%)	Good	Non-Friable
1213-35-0063	Textured Ceiling Coating	Ext - F	Chrysotile	Trace (<1%)	Good	Non-Friable
1213-36-0064	Fiberglass Canvas Pipe Wrap	118	ND	ND	Good	Non-Friable

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BULK ASBESTOS SAMPLING RESULTS**

**Building 1213  
NASA Langley Research Center  
Hampton, Virginia**

**Survey Date: November 9, 2006**

<b>Sample ID</b>	<b>Material Description</b>	<b>Sample Location</b>	<b>Asbestos Type</b>	<b>Asbestos Percent</b>	<b>Condition</b>	<b>Friable/ Non-friable</b>
1213-36-0065	Fiberglass Canvas Pipe Wrap	118	ND	ND	Good	Non-Friable
1213-36-0066	Fiberglass Canvas Pipe Wrap	117	ND	ND	Good	Non-Friable
1213-37-0067	Sink Mastic	117	Chrysotile	7%	Good	Non-Friable
1213-37-0068	Sink Mastic	117	Chrysotile	7%	Good	Non-Friable
1213-37-0069	Sink Mastic	117	Chrysotile	7%	Good	Non-Friable
1213-40-0070	12" x 12" Cream / Green Streaked Floor Tile and Associated Mastic	140	Chrysotile Chrysotile	3% 8%	Good	Non-Friable
1213-40-0071	12" x 12" Cream / Green Streaked Floor Tile and Associated Mastic	140	Chrysotile Chrysotile	3% 8%	Good	Non-Friable
1213-40-0072	12" x 12" Cream / Green Streaked Floor Tile and Associated Mastic	140	Chrysotile Chrysotile	3% 8%	Good	Non-Friable
1213-41-0073	4" Black Cove Base and Adhesive	141	ND	ND	Good	Non-Friable
1213-41-0074	4" Black Cove Base and Adhesive	138A	ND	ND	Good	Non-Friable
1213-41-0075	4" Black Cove Base and Adhesive	136A	ND	ND	Good	Non-Friable
1213-42-0076	Tile Grout	136A	ND	ND	Good	Non-Friable
1213-42-0077	Tile Grout	138A	ND	ND	Good	Non-Friable
1213-42-0078	Tile Grout	138A	ND	ND	Good	Non-Friable
1213-44-0079	Exterior Vent Caulk	Ext - Left	ND	ND	Good	Non-Friable
1213-44-0080	Exterior Vent Caulk	Ext - Left	ND	ND	Good	Non-Friable
1213-44-0081	Exterior Vent Caulk	Ext - Left	ND	ND	Good	Non-Friable
1213-45-0082	Window Caulk	Ext - Rear	ND	ND	Good	Non-Friable

ND = Not Detected    SF = Square Feet    LF = Linear Feet    NA = Not Analyzed

Condition - Good = <1% damaged, Damaged = 1-25% localized/1-10% distributed, Significantly Damaged = >25% localized/>10% distributed

**TABLE 1  
BULK ASBESTOS SAMPLING RESULTS**

**Building 1213  
NASA Langley Research Center  
Hampton, Virginia**

**Survey Date: November 9, 2006**

<b>Sample ID</b>	<b>Material Description</b>	<b>Sample Location</b>	<b>Asbestos Type</b>	<b>Asbestos Percent</b>	<b>Condition</b>	<b>Friable/ Non-friable</b>
1213-45-0083	Window Caulk	Ext - Front	ND	ND	Good	Non-Friable
1213-45-0084	Window Caulk	Ext - Front	ND	ND	Good	Non-Friable

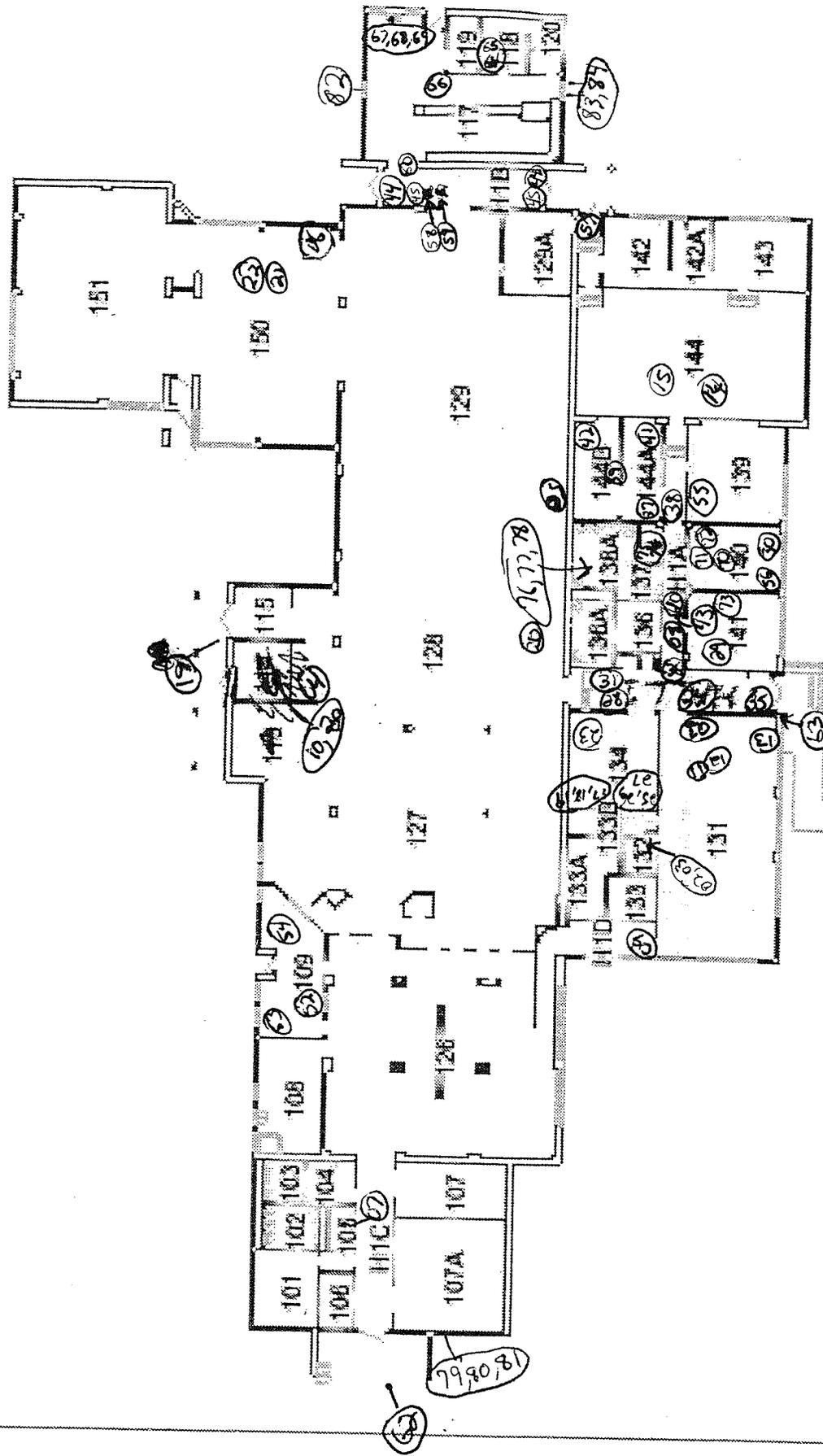
ND = Not Detected    SF = Square Feet    LF = Linear Feet    NA = Not Analyzed  
Condition - Good = <1% damaged, Damaged = 1-25% localized/1-10% distributed, Significantly Damaged = >25% localized/>10% distributed



**HAZARDOUS MATERIALS STUDY**  
**NASA LANGLEY RESEARCH CENTER**  
**BUILDING 1213**

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## **DRAWINGS**





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BUILDING 1213

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## APPENDICES



HAZARDOUS MATERIALS STUDY  
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BUILDING 1213

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APPENDIX A  
ASBESTOS SAMPLES ANALYTICAL REPORT



**AmeriSci Richmond**  
13635 GENITO ROAD  
MIDLOTHIAN, VIRGINIA 23112  
TEL: (804) 763-1200 • FAX: (804) 763-1800

## PLM Bulk Asbestos Report

Environmental Investigations, P.A.    **Date Received** 11/14/06    **AmeriSci Job No.** 106111400  
Attn: Brandie Hadaway    **Date Examined** 11/15/06    **P.O. #** IHRI060666.00  
5500 Cox Rd Ste E    **Page** 1 of 19  
Glen Allen, VA 23060    **RE** IHRI060666.00; NASA Langley; AB Sampling - Bldg  
1213

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
1213-01-0001 <b>Location:</b> 2'x2' Fissured/Pinhole Ceiling <b>Description:</b> White/Lt.Grey, Homogeneous, Fibrous, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Cellulose 25 %, Fibrous glass 45 %, Non-fibrous 30 %	106111400-01	No	NAD (by CVES) by Gordon T. Saleeby on 11/15/06
1213-01-0002 <b>Location:</b> 2'x2' Fissured/Pinhole Ceiling <b>Description:</b> White/Lt.Grey, Homogeneous, Fibrous, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Cellulose 25 %, Fibrous glass 45 %, Non-fibrous 30 %	106111400-02	No	NAD (by CVES) by Gordon T. Saleeby on 11/15/06
1213-01-0003 <b>Location:</b> 2'x2' Fissured/Pinhole Ceiling <b>Description:</b> White/Lt.Grey, Homogeneous, Fibrous, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Cellulose 25 %, Fibrous glass 45 %, Non-fibrous 30 %	106111400-03	No	NAD (by CVES) by Gordon T. Saleeby on 11/15/06
1213-02-0004 <b>Location:</b> Sheetrock and Joint Compound <b>Description:</b> White, Homogeneous, Non-Fibrous, Joint Compound <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100 %	106111400-04.1	No	NAD (by CVES) by Gordon T. Saleeby on 11/15/06
1213-02-0004 <b>Location:</b> Sheetrock and Joint Compound <b>Description:</b> White/Brown, Homogeneous, Non-Fibrous, Drywall <b>Asbestos Types:</b> <b>Other Material:</b> Cellulose 10 %, Non-fibrous 90 %	106111400-04.2	No	NAD (by CVES) by Gordon T. Saleeby on 11/15/06

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Client Name: Environmental Investigations, P.A.

## PLM Bulk Asbestos Report

IHRI060666.00; NASA Langley; AB Sampling - Bldg  
1213

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
1213-02-0005 <b>Location:</b> Sheetrock and Joint Compound  <b>Description:</b> White, Homogeneous, Non-Fibrous, Joint Compound <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100 %	106111400-05.1	<b>No</b>	NAD (by CVES) by Gordon T. Saleeby on 11/15/06
1213-02-0005 <b>Location:</b> Sheetrock and Joint Compound  <b>Description:</b> White/Brown, Homogeneous, Non-Fibrous, Drywall <b>Asbestos Types:</b> <b>Other Material:</b> Cellulose 10 %, Non-fibrous 90 %	106111400-05.2	<b>No</b>	NAD (by CVES) by Gordon T. Saleeby on 11/15/06
1213-02-0006 <b>Location:</b> Sheetrock and Joint Compound  <b>Description:</b> White/Brown, Homogeneous, Non-Fibrous, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Cellulose 10 %, Non-fibrous 90 % <b>Comment:</b> No Joint Compound in Sample, Drywall only.	106111400-06	<b>No</b>	NAD (by CVES) by Gordon T. Saleeby on 11/15/06
1213-03-0007 <b>Location:</b> Plaster  <b>Description:</b> White, Homogeneous, Non-Fibrous, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100 %	106111400-07	<b>No</b>	NAD (by CVES) by Gordon T. Saleeby on 11/15/06
1213-03-0008 <b>Location:</b> Plaster  <b>Description:</b> White, Homogeneous, Non-Fibrous, Skim Coat (Plaster) <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100 %	106111400-08.1	<b>No</b>	NAD (by CVES) by Gordon T. Saleeby on 11/15/06
1213-03-0008 <b>Location:</b> Plaster  <b>Description:</b> Gray, Homogeneous, Non-Fibrous, Cementitious, Base Coat (Plaster) <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100 %	106111400-08.2	<b>No</b>	NAD (by CVES) by Gordon T. Saleeby on 11/15/06

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## PLM Bulk Asbestos Report

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Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
1213-03-0009 <b>Location:</b> Plaster	106111400-09.1	<b>No</b>	NAD (by CVES) by Gordon T. Saleeby on 11/15/06
<b>Description:</b> White, Homogeneous, Non-Fibrous, Skim Coat (Plaster)			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Non-fibrous 100 %			
1213-03-0009 <b>Location:</b> Plaster	106111400-09.2	<b>No</b>	NAD (by CVES) by Gordon T. Saleeby on 11/15/06
<b>Description:</b> Lt. Beige, Homogeneous, Non-Fibrous, Cementitious, Base Coat (Plaster)			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Non-fibrous 100 %			
1213-04-0010 <b>Location:</b> Paper Duct Wrap/Black Mastic	106111400-10	<b>Yes</b>	3 % <sup>1</sup> (by CVES) by Gordon T. Saleeby on 11/15/06
<b>Description:</b> Black, Heterogeneous, Non-Fibrous, Bulk Material			
<b>Asbestos Types:</b> Chrysotile 3.0 %			
<b>Other Material:</b> Cellulose 40 %, Non-fibrous 57 %			
1213-04-0011 <b>Location:</b> Paper Duct Wrap/Black Mastic	106111400-11	<b>No</b>	NAD <sup>1</sup> (by CVES) by Gordon T. Saleeby on 11/15/06
<b>Description:</b> Black, Heterogeneous, Non-Fibrous, Bulk Material			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Fibrous glass 20 %, Non-fibrous 80 %			
1213-04-0012 <b>Location:</b> Paper Duct Wrap/Black Mastic	106111400-12	<b>No</b>	NAD <sup>1</sup> (by CVES) by Gordon T. Saleeby on 11/15/06
<b>Description:</b> Black, Heterogeneous, Non-Fibrous, Bulk Material			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Cellulose 5 %, Fibrous glass 20 %, Non-fibrous 75 %			
1213-05-0013 <b>Location:</b> Black Mastic Under Carpet	106111400-13	<b>Yes</b>	5 % (by CVES) by Gordon T. Saleeby on 11/15/06
<b>Description:</b> Black, Heterogeneous, Non-Fibrous, Bulk Material			
<b>Asbestos Types:</b> Chrysotile 5.0 %			
<b>Other Material:</b> Non-fibrous 95 %			

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Client Name: Environmental Investigations, P.A.

**PLM Bulk Asbestos Report**IHRI060666.00; NASA Langley; AB Sampling - Bldg  
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Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
1213-05-0014	106111400-14	Yes	8 %
Location: Black Mastic Under Carpet			(by CVES)
Description: Black, Heterogeneous, Non-Fibrous, Bulk Material			by Gordon T. Saleeby
Asbestos Types: Chrysotile 8.0 %			on 11/15/06
Other Material: Non-fibrous 92 %			
1213-05-0015	106111400-15	Yes	8 %
Location: Black Mastic Under Carpet			(by CVES)
Description: Black, Heterogeneous, Non-Fibrous, Bulk Material			by Gordon T. Saleeby
Asbestos Types: Chrysotile 8.0 %			on 11/15/06
Other Material: Non-fibrous 92 %			
1213-13-0017	106111400-16	No	NAD
Location: Tar Paper Pipe Wrap			(by CVES)
Description: Black, Heterogeneous, Non-Fibrous, Bulk Material			by Gordon T. Saleeby
Asbestos Types:			on 11/15/06
Other Material: Cellulose 65 %, Non-fibrous 35 %			
1213-13-0018	106111400-17	No	NAD
Location: Tar Paper Pipe Wrap			(by CVES)
Description: Black/White, Heterogeneous, Non-Fibrous, Bulk Material			by Gordon T. Saleeby
Asbestos Types:			on 11/15/06
Other Material: Animal hair 5 %, Cellulose 45 %, Non-fibrous 50 %			
1213-14-0019	106111400-18	No	NAD
Location: White Pipe Insulation Mastic			(by CVES)
Description: White, Homogeneous, Non-Fibrous, Bulk Material			by Gordon T. Saleeby
Asbestos Types:			on 11/15/06
Other Material: Non-fibrous 100 %			
Comment: Appears to be White Paint on Black Tar Paper.			
1213-14-0020	106111400-19	No	NAD
Location: White Pipe Insulation Mastic			(by CVES)
Description: White, Homogeneous, Non-Fibrous, Bulk Material			by Gordon T. Saleeby
Asbestos Types:			on 11/15/06
Other Material: Non-fibrous 100 %			

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## PLM Bulk Asbestos Report

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Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
1213-14-0021	106111400-20	<b>No</b>	NAD
<b>Location:</b> White Pipe Insulation Mastic			(by CVES) by Gordon T. Saleeby on 11/15/06
<b>Description:</b> White, Homogeneous, Non-Fibrous, Bulk Material			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Non-fibrous 100 %			
1213-15-0022	106111400-21	<b>No</b>	NAD
<b>Location:</b> White Duct Mastic			(by CVES) by Gordon T. Saleeby on 11/15/06
<b>Description:</b> White, Homogeneous, Non-Fibrous, Bulk Material			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Non-fibrous 100 %			
1213-15-0023	106111400-22	<b>No</b>	NAD
<b>Location:</b> White Duct Mastic			(by CVES) by Gordon T. Saleeby on 11/15/06
<b>Description:</b> White, Homogeneous, Non-Fibrous, Bulk Material			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Non-fibrous 100 %			
1213-15-0024	106111400-23	<b>No</b>	NAD
<b>Location:</b> White Duct Mastic			(by CVES) by Gordon T. Saleeby on 11/15/06
<b>Description:</b> White, Homogeneous, Non-Fibrous, Bulk Material			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Non-fibrous 100 %			
1213-16-0025	106111400-24	<b>No</b>	NAD
<b>Location:</b> White Canvas Tank Wrap			(by CVES) by Gordon T. Saleeby on 11/15/06
<b>Description:</b> White, Homogeneous, Fibrous, Bulk Material			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Cellulose 45 %, Fibrous glass 5 %, Non-fibrous 50 %			
1213-16-0026	106111400-25	<b>No</b>	NAD
<b>Location:</b> White Canvas Tank Wrap			(by CVES) by Gordon T. Saleeby on 11/15/06
<b>Description:</b> White, Homogeneous, Fibrous, Bulk Material			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Cellulose 45 %, Fibrous glass 5 %, Non-fibrous 50 %			

See Reporting notes on last page

Client Name: Environmental Investigations, P.A.

**PLM Bulk Asbestos Report**IHRI060666.00; NASA Langley; AB Sampling - Bldg  
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Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
1213-16-0027	106111400-26	No	NAD
<b>Location:</b> White Canvas Tank Wrap			(by CVES) by Gordon T. Saleeby on 11/15/06
<b>Description:</b> White, Homogeneous, Fibrous, Bulk Material			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Cellulose 45 %, Fibrous glass 5 %, Non-fibrous 50 %			
1213-17-0028	106111400-27	No	NAD
<b>Location:</b> 2'x2' Flat Fissured/Pinhole Ceiling			(by CVES) by Gordon T. Saleeby on 11/15/06
<b>Description:</b> White/Beige, Homogeneous, Fibrous, Bulk Material			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Cellulose 25 %, Fibrous glass 45 %, Non-fibrous 30 %			
1213-17-0029	106111400-28	No	NAD
<b>Location:</b> 2'x2' Flat Fissured/Pinhole Ceiling			(by CVES) by Gordon T. Saleeby on 11/15/06
<b>Description:</b> White/Beige, Homogeneous, Fibrous, Bulk Material			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Cellulose 25 %, Fibrous glass 45 %, Non-fibrous 30 %			
1213-17-0030	106111400-29	No	NAD
<b>Location:</b> 2'x2' Flat Fissured/Pinhole Ceiling			(by CVES) by Gordon T. Saleeby on 11/15/06
<b>Description:</b> White/Beige, Homogeneous, Fibrous, Bulk Material			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Cellulose 25 %, Fibrous glass 45 %, Non-fibrous 30 %			
1213-18-0031	106111400-30L1	No	NAD
<b>Location:</b> 12"x12" Light Blue Floor Tile			(by CVES) by Gordon T. Saleeby on 11/15/06
<b>Description:</b> Lt. Blue, Homogeneous, Non-Fibrous, Floor Tile			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Non-fibrous 100 %			
1213-18-0031	106111400-30L2	No	NAD
<b>Location:</b> 12"x12" Light Blue Floor Tile			(by CVES) by Gordon T. Saleeby on 11/15/06
<b>Description:</b> Transparent Amber, Heterogeneous, Non-Fibrous, Mastic			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Non-fibrous 100 %			

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## PLM Bulk Asbestos Report

IHRI060666.00; NASA Langley; AB Sampling - Bldg  
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Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
1213-18-0031	106111400-30.3 <b>Location:</b> 12"x12" Light Blue Floor Tile	<b>No</b>	NAD (by CVES) by Gordon T. Saleeby on 11/15/06
<b>Description:</b> Lt. Gray/White, Heterogeneous, Non-Fibrous, Leveling Compound			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Cellulose 2 %, Non-fibrous 98 %			
1213-18-0032	106111400-31 <b>Location:</b> 12"x12" Light Blue Floor Tile	<b>No</b>	NAD (by CVES) by Gordon T. Saleeby on 11/15/06
<b>Description:</b> Lt. Blue, Heterogeneous, Non-Fibrous, Bulk Material			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Non-fibrous 100 %			
1213-18-0033	106111400-32L1 <b>Location:</b> 12"x12" Light Blue Floor Tile	<b>No</b>	NAD (by CVES) by Gordon T. Saleeby on 11/15/06
<b>Description:</b> Lt. Blue, Heterogeneous, Non-Fibrous, Floor Tile			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Non-fibrous 100 %			
1213-18-0033	106111400-32L2 <b>Location:</b> 12"x12" Light Blue Floor Tile	<b>No</b>	NAD (by CVES) by Gordon T. Saleeby on 11/15/06
<b>Description:</b> Transparent Yellow, Heterogeneous, Non-Fibrous, Mastic			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Non-fibrous 100 %			
1213-19-0034	106111400-33L1 <b>Location:</b> 4" Light Brown Cove Base and	<b>No</b>	NAD (by CVES) by Gordon T. Saleeby on 11/15/06
<b>Description:</b> Lt. Brown, Heterogeneous, Non-Fibrous, Base Cove			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Non-fibrous 100 %			
1213-19-0034	106111400-33L2 <b>Location:</b> 4" Light Brown Cove Base and	<b>No</b>	NAD (by CVES) by Gordon T. Saleeby on 11/15/06
<b>Description:</b> Off White, Heterogeneous, Non-Fibrous, Mastic			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Non-fibrous 100 %			

See Reporting notes on last page

Client Name: Environmental Investigations, P.A.

## PLM Bulk Asbestos Report

IHRI060666.00; NASA Langley; AB Sampling - Bldg  
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Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
1213-19-0034 <b>Location:</b> 4" Light Brown Cove Base and  <b>Description:</b> Brown, Heterogeneous, Non-Fibrous, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100 %	106111400-33L3	<b>No</b>	NAD  (by CVES) by Gordon T. Saleeby on 11/15/06
1213-19-0035 <b>Location:</b> 4" Light Brown Cove Base and  <b>Description:</b> Lt. Brown, Heterogeneous, Non-Fibrous, Base Cove <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100 %	106111400-34L1	<b>No</b>	NAD  (by CVES) by Gordon T. Saleeby on 11/15/06
1213-19-0035 <b>Location:</b> 4" Light Brown Cove Base and  <b>Description:</b> Off White, Heterogeneous, Non-Fibrous, Mastic <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100 %	106111400-34L2	<b>No</b>	NAD  (by CVES) by Gordon T. Saleeby on 11/15/06
1213-19-0036 <b>Location:</b> 4" Light Brown Cove Base and  <b>Description:</b> Lt. Brown, Heterogeneous, Non-Fibrous, Base Cove <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100 %	106111400-35L1	<b>No</b>	NAD  (by CVES) by Gordon T. Saleeby on 11/15/06
1213-19-0036 <b>Location:</b> 4" Light Brown Cove Base and  <b>Description:</b> Off White, Heterogeneous, Non-Fibrous, Mastic <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100 %	106111400-35L2	<b>No</b>	NAD  (by CVES) by Gordon T. Saleeby on 11/15/06
1213-22-0037 <b>Location:</b> 6" Dark Brown Cove Base and  <b>Description:</b> Dark Brown, Homogeneous, Non-Fibrous, Base Cove <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100 %	106111400-36L1	<b>No</b>	NAD  (by CVES) by Gordon T. Saleeby on 11/15/06

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Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
1213-22-0037	106111400-36L2	No	NAD
Location: 6" Dark Brown Cove Base and			(by CVES)
Description: Brown, Heterogeneous, Non-Fibrous, Mastic 1			by Gordon T. Saleeby
Asbestos Types:			on 11/15/06
Other Material: Non-fibrous 100 %			
1213-22-0037	106111400-36L3	Yes	8 %
Location: 6" Dark Brown Cove Base and			(by CVES)
Description: Black, Heterogeneous, Non-Fibrous, Mastic 2			by Gordon T. Saleeby
Asbestos Types: Chrysotile 8.0 %			on 11/15/06
Other Material: Non-fibrous 92 %			
1213-22-0038	106111400-37L1	No	NAD
Location: 6" Dark Brown Cove Base and			(by CVES)
Description: Black/Brown, Heterogeneous, Non-Fibrous, Base Cove			by Gordon T. Saleeby
Asbestos Types:			on 11/15/06
Other Material: Non-fibrous 100 %			
1213-22-0038	106111400-37L2	No	NAD
Location: 6" Dark Brown Cove Base and			(by CVES)
Description: Off White, Heterogeneous, Non-Fibrous, Mastic			by Gordon T. Saleeby
Asbestos Types:			on 11/15/06
Other Material: Non-fibrous 100 %			
1213-22-0039	106111400-38L1	No	NAD
Location: 6" Dark Brown Cove Base and			(by CVES)
Description: Brown, Heterogeneous, Non-Fibrous, Base Cove			by Gordon T. Saleeby
Asbestos Types:			on 11/15/06
Other Material: Non-fibrous 100 %			
1213-22-0039	106111400-38L2	No	NAD
Location: 6" Dark Brown Cove Base and			(by CVES)
Description: Off White, Heterogeneous, Non-Fibrous, Mastic			by Gordon T. Saleeby
Asbestos Types:			on 11/15/06
Other Material: Non-fibrous 100 %			

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Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
1213-23-0040	106111400-39	<b>No</b>	NAD
<b>Location:</b> 2'x2' Flat Pinhole Ceiling Tile			(by CVES) by Gordon T. Saleeby on 11/15/06
<b>Description:</b> White/Beige, Homogeneous, Fibrous, Bulk Material			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Cellulose 35 %, Fibrous glass 35 %, Non-fibrous 30 %			
1213-23-0041	106111400-40	<b>No</b>	NAD
<b>Location:</b> 2'x2' Flat Pinhole Ceiling Tile			(by CVES) by Gordon T. Saleeby on 11/15/06
<b>Description:</b> White/Beige, Homogeneous, Fibrous, Bulk Material			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Cellulose 35 %, Fibrous glass 35 %, Non-fibrous 30 %			
1213-23-0042	106111400-41	<b>No</b>	NAD
<b>Location:</b> 2'x2' Flat Pinhole Ceiling Tile			(by CVES) by Gordon T. Saleeby on 11/15/06
<b>Description:</b> White/Beige, Homogeneous, Fibrous, Bulk Material			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Cellulose 35 %, Fibrous glass 35 %, Non-fibrous 30 %			
1213-24-0043	106111400-42L1	<b>No</b>	NAD
<b>Location:</b> 6" Light Brown Cove Base and			(by CVES) by Gordon T. Saleeby on 11/15/06
<b>Description:</b> Lt. Brown, Homogeneous, Non-Fibrous, Base Cove			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Non-fibrous 100 %			
1213-24-0043	106111400-42L2	<b>No</b>	NAD
<b>Location:</b> 6" Light Brown Cove Base and			(by CVES) by Gordon T. Saleeby on 11/15/06
<b>Description:</b> Yellow/White, Heterogeneous, Non-Fibrous, Mastic			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Non-fibrous 100 %			
1213-24-0044	106111400-43L1	<b>No</b>	NAD
<b>Location:</b> 6" Light Brown Cove Base and			(by CVES) by Gordon T. Saleeby on 11/15/06
<b>Description:</b> Lt. Brown, Heterogeneous, Non-Fibrous, Base Cove			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Non-fibrous 100 %			

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Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
1213-24-0044	106111400-43L2 <b>Location:</b> 6" Light Brown Cove Base and	<b>No</b>	NAD (by CVES) by Gordon T. Saleeby on 11/15/06
<b>Description:</b> Yellow/White, Heterogeneous, Non-Fibrous, Mastic			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Non-fibrous 100 %			
1213-24-0045	106111400-44L1 <b>Location:</b> 6" Light Brown Cove Base and	<b>No</b>	NAD (by CVES) by Gordon T. Saleeby on 11/15/06
<b>Description:</b> Lt. Brown, Heterogeneous, Non-Fibrous, Base Cove			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Non-fibrous 100 %			
1213-24-0045	106111400-44L2 <b>Location:</b> 6" Light Brown Cove Base and	<b>No</b>	NAD (by CVES) by Gordon T. Saleeby on 11/15/06
<b>Description:</b> Yellow/White, Heterogeneous, Non-Fibrous, Mastic 1			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Non-fibrous 100 %			
1213-24-0045	106111400-44L3 <b>Location:</b> 6" Light Brown Cove Base and	<b>No</b>	NAD (by CVES) by Gordon T. Saleeby on 11/15/06
<b>Description:</b> Yellow/Brown, Heterogeneous, Non-Fibrous, Mastic 2			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Non-fibrous 100 %			
1213-31-0052	106111400-45 <b>Location:</b> 2'x2' Heavily Fissured Ceiling	<b>No</b>	NAD (by CVES) by Gordon T. Saleeby on 11/15/06
<b>Description:</b> White/Beige, Homogeneous, Fibrous, Bulk Material			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Cellulose 30 %, Fibrous glass 40 %, Non-fibrous 30 %			
1213-31-0053	106111400-46 <b>Location:</b> 2'x2' Heavily Fissured Ceiling	<b>No</b>	NAD (by CVES) by Gordon T. Saleeby on 11/15/06
<b>Description:</b> White/Beige, Homogeneous, Fibrous, Bulk Material			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Cellulose 30 %, Fibrous glass 40 %, Non-fibrous 30 %			

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Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
1213-31-0054	106111400-47	<b>No</b>	NAD
<b>Location:</b> 2'x2' Heavily Fissured Ceiling			(by CVES) by Gordon T. Saleeby on 11/15/06
<b>Description:</b> White/Beige, Homogeneous, Fibrous, Bulk Material			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Cellulose 30 %, Fibrous glass 40 %, Non-fibrous 30 %			
1213-33-0055	106111400-48L1	<b>No</b>	NAD
<b>Location:</b> 6" Black Cove Base and Mastic			(by CVES) by Gordon T. Saleeby on 11/15/06
<b>Description:</b> Black, Homogeneous, Non-Fibrous, Base Cove			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Non-fibrous 100 %			
1213-33-0055	106111400-48L2	<b>No</b>	NAD
<b>Location:</b> 6" Black Cove Base and Mastic			(by CVES) by Gordon T. Saleeby on 11/15/06
<b>Description:</b> Off White, Homogeneous, Non-Fibrous, Mastic			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Non-fibrous 100 %			
1213-33-0056	106111400-49L1	<b>No</b>	NAD
<b>Location:</b> 6" Black Cove Base and Mastic			(by CVES) by Gordon T. Saleeby on 11/15/06
<b>Description:</b> Black, Homogeneous, Non-Fibrous, Base Cove			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Non-fibrous 100 %			
1213-33-0056	106111400-49L2	<b>No</b>	NAD
<b>Location:</b> 6" Black Cove Base and Mastic			(by CVES) by Gordon T. Saleeby on 11/15/06
<b>Description:</b> Off-White/Brown, Homogeneous, Non-Fibrous, Mastic			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Non-fibrous 100 %			
1213-33-0057	106111400-50L1	<b>No</b>	NAD
<b>Location:</b> 6" Black Cove Base and Mastic			(by CVES) by Gordon T. Saleeby on 11/15/06
<b>Description:</b> Black, Heterogeneous, Non-Fibrous, Base Cove			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Non-fibrous 100 %			

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Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
1213-33-0057	106111400-50L2 <b>Location:</b> 6" Black Cove Base and Mastic	<b>No</b>	NAD (by CVES) by Gordon T. Saleeby on 11/15/06
<b>Description:</b> Yellowish Brown, Heterogeneous, Non-Fibrous, Mastic			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Non-fibrous 100 %			
1213-34-0058	106111400-51L1 <b>Location:</b> 12"x12" Tan Waffle Pattern Fl	<b>No</b>	NAD (by CVES) by Gordon T. Saleeby on 11/15/06
<b>Description:</b> Tan, Heterogeneous, Non-Fibrous, Floor Tile			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Non-fibrous 100 %			
1213-34-0058	106111400-51L2 <b>Location:</b> 12"x12" Tan Waffle Pattern Fl	<b>No</b>	NAD (by CVES) by Gordon T. Saleeby on 11/15/06
<b>Description:</b> Yellow, Heterogeneous, Non-Fibrous, Mastic			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Non-fibrous 100 %			
1213-34-0059	106111400-52L1 <b>Location:</b> 12"x12" Tan Waffle Pattern Fl	<b>No</b>	NAD (by CVES) by Gordon T. Saleeby on 11/15/06
<b>Description:</b> Tan, Heterogeneous, Non-Fibrous, Floor Tile			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Non-fibrous 100 %			
1213-34-0059	106111400-52L2 <b>Location:</b> 12"x12" Tan Waffle Pattern Fl	<b>No</b>	NAD (by CVES) by Gordon T. Saleeby on 11/15/06
<b>Description:</b> Yellow, Heterogeneous, Non-Fibrous, Mastic			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Non-fibrous 100 %			
1213-34-0060	106111400-53L1 <b>Location:</b> 12"x12" Tan Waffle Pattern Fl	<b>No</b>	NAD (by CVES) by Gordon T. Saleeby on 11/15/06
<b>Description:</b> Tan, Heterogeneous, Non-Fibrous, Floor Tile			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Non-fibrous 100 %			

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Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
1213-34-0060	106111400-53L2 <b>Location:</b> 12"x12" Tan Waffle Pattern Fl	<b>No</b>	NAD (by CVES) by Gordon T. Saleeby on 11/15/06
<b>Description:</b> Clear/Gray, Heterogeneous, Non-Fibrous, Mastic			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Non-fibrous 100 %			
1213-35-0061	106111400-54.1 <b>Location:</b> Textured Ceiling Coating	<b>Yes</b>	Trace (<1 %) (by CVES) by Gordon T. Saleeby on 11/16/06
<b>Description:</b> White, Heterogeneous, Non-Fibrous, Skim Coat (Plaster)			
<b>Asbestos Types:</b> Chrysotile <1. %			
<b>Other Material:</b> Non-fibrous 100 %			
1213-35-0061	106111400-54.2 <b>Location:</b> Textured Ceiling Coating	<b>Yes</b>	Trace (<1 %) (by CVES) by Gordon T. Saleeby on 11/16/06
<b>Description:</b> Beige, Heterogeneous, Non-Fibrous, Base Coat (Plaster)			
<b>Asbestos Types:</b> Chrysotile <1. %			
<b>Other Material:</b> Non-fibrous 100 %			
1213-35-0062	106111400-55.1 <b>Location:</b> Textured Ceiling Coating	<b>Yes</b>	Trace (<1 %) (by CVES) by Gordon T. Saleeby on 11/16/06
<b>Description:</b> White, Heterogeneous, Non-Fibrous, Skim Coat (Plaster)			
<b>Asbestos Types:</b> Chrysotile <1. %			
<b>Other Material:</b> Non-fibrous 100 %			
1213-35-0062	106111400-55.2 <b>Location:</b> Textured Ceiling Coating	<b>Yes</b>	Trace (<1 %) (by CVES) by Gordon T. Saleeby on 11/16/06
<b>Description:</b> Beige, Heterogeneous, Non-Fibrous, Base Coat (Plaster)			
<b>Asbestos Types:</b> Chrysotile <1. %			
<b>Other Material:</b> Non-fibrous 100 %			
1213-35-0063	106111400-56 <b>Location:</b> Textured Ceiling Coating	<b>No</b>	NAD <sup>1</sup> (by CVES) by Gordon T. Saleeby on 11/16/06
<b>Description:</b> White/Beige, Heterogeneous, Non-Fibrous, Bulk Material			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Non-fibrous 100 %			

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Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
1213-36-0064	106111400-57 <b>Location:</b> Fiberglass Canvas Wrap Pipe	<b>No</b>	NAD (by CVES) by Gordon T. Saleeby on 11/16/06
<b>Description:</b> White/Beige, Heterogeneous, Non-Fibrous, Bulk Material			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Animal hair 5 %, Cellulose 75 %, Non-fibrous 20 %			
1213-36-0065	106111400-58 <b>Location:</b> Fiberglass Canvas Wrap Pipe	<b>No</b>	NAD (by CVES) by Gordon T. Saleeby on 11/16/06
<b>Description:</b> White/Beige, Heterogeneous, Non-Fibrous, Bulk Material			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Cellulose 70 %, Fibrous glass 10 %, Non-fibrous 20 %			
1213-36-0066	106111400-59 <b>Location:</b> Fiberglass Canvas Wrap Pipe	<b>No</b>	NAD (by CVES) by Gordon T. Saleeby on 11/16/06
<b>Description:</b> Silver/Brown, Heterogeneous, Non-Fibrous, Bulk Material			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Cellulose 85 %, Non-fibrous 15 %			
1213-37-0067	106111400-60 <b>Location:</b> Sink Mastic	<b>Yes</b>	7 % (by CVES) by Gordon T. Saleeby on 11/16/06
<b>Description:</b> Gray, Homogeneous, Non-Fibrous, Bulk Material			
<b>Asbestos Types:</b> Chrysotile 7.0 %			
<b>Other Material:</b> Non-fibrous 93 %			
1213-37-0068	106111400-61 <b>Location:</b> Sink Mastic	<b>Yes</b>	7 % (by CVES) by Gordon T. Saleeby on 11/16/06
<b>Description:</b> Gray, Homogeneous, Non-Fibrous, Bulk Material			
<b>Asbestos Types:</b> Chrysotile 7.0 %			
<b>Other Material:</b> Non-fibrous 93 %			
1213-37-0069	106111400-62 <b>Location:</b> Sink Mastic	<b>Yes</b>	7 % (by CVES) by Gordon T. Saleeby on 11/16/06
<b>Description:</b> Gray, Homogeneous, Non-Fibrous, Bulk Material			
<b>Asbestos Types:</b> Chrysotile 7.0 %			
<b>Other Material:</b> Non-fibrous 93 %			

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Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
1213-40-0070	106111400-63L1	<b>Yes</b>	3 %
<b>Location:</b> 12"x12" Cream/Green Streak			(by CVES)
<b>Description:</b> Cream, Homogeneous, Non-Fibrous, Floor Tile			by Gordon T. Saleeby on 11/16/06
<b>Asbestos Types:</b> Chrysotile 3.0 %			
<b>Other Material:</b> Non-fibrous 97 %			
1213-40-0070	106111400-63L2	<b>Yes</b>	8 %
<b>Location:</b> 12"x12" Cream/Green Streak			(by CVES)
<b>Description:</b> Black, Homogeneous, Non-Fibrous, Mastic			by Gordon T. Saleeby on 11/16/06
<b>Asbestos Types:</b> Chrysotile 8.0 %			
<b>Other Material:</b> Non-fibrous 92 %			
1213-40-0071	106111400-64L1	<b>Yes</b>	3 %
<b>Location:</b> 12"x12" Cream/Green Streak			(by CVES)
<b>Description:</b> Cream, Homogeneous, Non-Fibrous, Floor Tile			by Gordon T. Saleeby on 11/16/06
<b>Asbestos Types:</b> Chrysotile 3.0 %			
<b>Other Material:</b> Non-fibrous 97 %			
1213-40-0071	106111400-64L2	<b>Yes</b>	8 %
<b>Location:</b> 12"x12" Cream/Green Streak			(by CVES)
<b>Description:</b> Black, Homogeneous, Non-Fibrous, Mastic			by Gordon T. Saleeby on 11/16/06
<b>Asbestos Types:</b> Chrysotile 8.0 %			
<b>Other Material:</b> Non-fibrous 92 %			
1213-40-0072	106111400-65L1	<b>Yes</b>	3 %
<b>Location:</b> 12"x12" Cream/Green Streak			(by CVES)
<b>Description:</b> Cream, Heterogeneous, Non-Fibrous, Floor Tile			by Gordon T. Saleeby on 11/16/06
<b>Asbestos Types:</b> Chrysotile 3.0 %			
<b>Other Material:</b> Non-fibrous 97 %			
1213-40-0072	106111400-65L2	<b>Yes</b>	8 %
<b>Location:</b> 12"x12" Cream/Green Streak			(by CVES)
<b>Description:</b> Black, Heterogeneous, Non-Fibrous, Mastic			by Gordon T. Saleeby on 11/16/06
<b>Asbestos Types:</b> Chrysotile 8.0 %			
<b>Other Material:</b> Non-fibrous 92 %			

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Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
1213-41-0073	106111400-66L1	<b>No</b>	NAD
<b>Location:</b> 4" Black Cove Base and Mastic			(by CVES) by Gordon T. Saleeby on 11/16/06
<b>Description:</b> Black, Heterogeneous, Non-Fibrous, Base Cove			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Non-fibrous 100 %			
1213-41-0073	106111400-66L2	<b>No</b>	NAD
<b>Location:</b> 4" Black Cove Base and Mastic			(by CVES) by Gordon T. Saleeby on 11/16/06
<b>Description:</b> Cream, Heterogeneous, Non-Fibrous, Mastic 1			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Non-fibrous 100 %			
1213-41-0073	106111400-66L3	<b>No</b>	NAD
<b>Location:</b> 4" Black Cove Base and Mastic			(by CVES) by Gordon T. Saleeby on 11/16/06
<b>Description:</b> Dark Brown, Heterogeneous, Non-Fibrous, Mastic 2			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Non-fibrous 100 %			
1213-41-0074	106111400-67L1	<b>No</b>	NAD
<b>Location:</b> 4" Black Cove Base and Mastic			(by CVES) by Gordon T. Saleeby on 11/16/06
<b>Description:</b> Black, Heterogeneous, Non-Fibrous, Base Cove			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Non-fibrous 100 %			
1213-41-0074	106111400-67L2	<b>No</b>	NAD
<b>Location:</b> 4" Black Cove Base and Mastic			(by CVES) by Gordon T. Saleeby on 11/16/06
<b>Description:</b> White, Heterogeneous, Non-Fibrous, Mastic			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Non-fibrous 100 %			
1213-41-0075	106111400-68L1	<b>No</b>	NAD
<b>Location:</b> 4" Black Cove Base and Mastic			(by CVES) by Gordon T. Saleeby on 11/16/06
<b>Description:</b> Black, Homogeneous, Non-Fibrous, Base Cove			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Non-fibrous 100 %			

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Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
1213-41-0075	106111400-68L2	<b>No</b>	NAD
<b>Location:</b> 4" Black Cove Base and Mastic			(by CVES)
<b>Description:</b> White, Heterogeneous, Non-Fibrous, Mastic			by Gordon T. Saleeby
<b>Asbestos Types:</b>			on 11/16/06
<b>Other Material:</b> Non-fibrous 100 %			
1213-42-0076	106111400-69	<b>No</b>	NAD
<b>Location:</b> Tile Grout			(by CVES)
<b>Description:</b> Brown/Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material			by Gordon T. Saleeby
<b>Asbestos Types:</b>			on 11/16/06
<b>Other Material:</b> Non-fibrous 100 %			
1213-42-0077	106111400-70	<b>No</b>	NAD
<b>Location:</b> Tile Grout			(by CVES)
<b>Description:</b> Brown/Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material			by Gordon T. Saleeby
<b>Asbestos Types:</b>			on 11/16/06
<b>Other Material:</b> Non-fibrous 100 %			
1213-42-0078	106111400-71	<b>No</b>	NAD
<b>Location:</b> Tile Grout			(by CVES)
<b>Description:</b> Brown/Gray, Heterogeneous, Non-Fibrous, Bulk Material			by Gordon T. Saleeby
<b>Asbestos Types:</b>			on 11/16/06
<b>Other Material:</b> Non-fibrous 100 %			
1213-44-0079	106111400-72	<b>No</b>	NAD
<b>Location:</b> Exterior Vent Caulk			(by CVES)
<b>Description:</b> Off White, Heterogeneous, Non-Fibrous, Bulk Material			by Gordon T. Saleeby
<b>Asbestos Types:</b>			on 11/16/06
<b>Other Material:</b> Fibrous Talc 2 %, Non-fibrous 98 %			
1213-44-0080	106111400-73	<b>No</b>	NAD
<b>Location:</b> Exterior Vent Caulk			(by CVES)
<b>Description:</b> Off White, Heterogeneous, Non-Fibrous, Bulk Material			by Gordon T. Saleeby
<b>Asbestos Types:</b>			on 11/16/06
<b>Other Material:</b> Fibrous Talc 2 %, Non-fibrous 98 %			

See Reporting notes on last page

Client Name: Environmental Investigations, P.A.

## PLM Bulk Asbestos Report

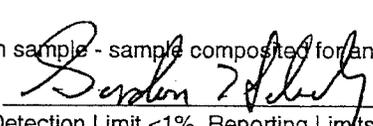
IHRI060666.00; NASA Langley; AB Sampling - Bldg  
1213

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
1213-44-0081	106111400-74	<b>No</b>	<b>NAD</b>
<b>Location:</b> Exterior Vent Caulk			(by CVES) by Gordon T. Saleeby on 11/16/06
<b>Description:</b> Off White, Heterogeneous, Non-Fibrous, Bulk Material			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Fibrous Talc 2 %, Non-fibrous 98 %			
1213-45-0082	106111400-75	<b>No</b>	<b>NAD</b>
<b>Location:</b> Window Caulk			(by CVES) by Gordon T. Saleeby on 11/16/06
<b>Description:</b> Gray, Heterogeneous, Non-Fibrous, Bulk Material			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Non-fibrous 100 %			
1213-45-0083	106111400-76	<b>No</b>	<b>NAD</b>
<b>Location:</b> Window Caulk			(by CVES) by Gordon T. Saleeby on 11/16/06
<b>Description:</b> Gray, Homogeneous, Non-Fibrous, Bulk Material			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Non-fibrous 100 %			
1213-45-0084	106111400-77	<b>No</b>	<b>NAD</b>
<b>Location:</b> Window Caulk			(by CVES) by Gordon T. Saleeby on 11/16/06
<b>Description:</b> Gray, Homogeneous, Non-Fibrous, Bulk Material			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Non-fibrous 100 %			

**Reporting Notes:**

(1) Physically inseparable layers in sample - sample composited for analysis

Analyzed by: Gordon T. Saleeby



Date

*NOV 16, 2006*

\*NAD = no asbestos detected, Detection Limit <1%, Reporting Limits: CVES = 1%, 400 Pt Ct = 0.25%, 1000 Pt Ct = 0.1%; "Present" or NVA = "No Visible Asbestos" are observations made during a qualitative analysis; NA = not analyzed; NA/PS = not analyzed / positive stop; PLM Bulk Asbestos Analysis by EPA 600/M4-82-020 per 40 CFR 763 (NVLAP Lab #101904-0) and ELAP PLM Analysis Protocol 198.1 for New York friable samples (198.6 for NOB samples)(NYSDOH ELAP Lab # 10984); CA ELAP Lab # 2508; Note: PLM is not consistently reliable in detecting asbestos in floor coverings and similar NOB materials. TEM is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos-containing in New York State (also see EPA Advisory for floor tile, FR 59, 146, 38970, 8/1/94). NIST Accreditation requirements mandate that this report must not be reproduced except in full without the approval of the laboratory. This PLM report relates ONLY to the items tested.

Reviewed By: \_\_\_\_\_





HAZARDOUS MATERIALS STUDY  
NASA LANGLEY RESEARCH CENTER  
BUILDING 1213

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**APPENDIX B**  
**TCLP SAMPLES ANALYTICAL REPORT**

**ENVIRONMENTAL HAZARDS SERVICES, L.L.C.**

7469 WHITE PINE ROAD - RICHMOND, VA 23237

804-275-4788 FAX 804-275-4907

**TCLP (LEAD) ANALYSIS SUMMARY**

CLIENT: The EI Group, Inc.  
5500 Cox Road, Suite E  
Glen Allen, VA 23060

DATE OF SAMPLING: 30 Aug 2006  
DATE OF RECEIPT: 15 Sep 2006  
DATE OF ANALYSIS: 19 Sep 2006  
DATE OF REPORT: 20 Sep 2006

CLIENT NUMBER: 48-1920 SA  
EHS PROJECT #: 2006-09-1889  
PROJECT: IHRI060666.01

EHS SAMPLE #	CLIENT SAMPLE #/ LABORATORY GROSS DESCRIPTION	SAMPLE WEIGHT (g)	INITIAL pH	CONCENTRATION PPM (mg/L)
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01	TCLP 1213/ Building Debris	100	10.28	<0.50
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**QUALITY CONTROL DATA**

BATCH#:	091906T-1
INCLUSIVE EHS SAMPLE NUMBERS:	01
Initial Calibration Verification (5.00ppm Pb):	100% Recovery
Continuing Calibration Verification 5 (5.00ppm Pb)	102% Recovery
Laboratory Control Standard	106% Recovery
Matrix Spike	116% Recovery
Duplicate Relative Percent Difference	8.88 RPD
Regulatory Limit	5.0mg/L
Reporting Limit	0.50mg/L
Method Detection Limit	0.060mg/L

METHOD: EPA SW846 1311/8010A/7420

ANALYST: Aubrey Simonds

Reviewed By Authorized Signatory:

*Irma Paszewski*  
Michael A. Mueller, MPH, Laboratory Director  
Howard Varner, General Manager  
Irma Paszewski, Quality Assurance Coordinator  
David Xu, MS, Senior Chemist

Method EPA SW846 1311 recommends 100g for analysis.

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume etc., was provided by the client. This report shall not be reproduced, except in full, without the written consent of Environmental Hazards Services, L.L.C. California Certification #2319 NY ELAP #11714.

LEGEND	g = gram	ug = microgram	ppm = parts per million
	ml = milliliter	Pb = lead	mg/L = milligrams per liter

tclppb2.do/AA220/07APR2006/REV3/pd

EHS 2006-09-1889

ENVIRONMENTAL HAZARDS SERVICES, L.L.C.  
7469 Whitepine Road Richmond, Virginia 23237 Phone (804) 275-4788 Fax (804) 275-4907

CHAIN OF CUSTODY FORM

1P1TCLP

Company Name: The EI Group, Inc. Date: 9/1/2006  
 Address: 5500 Cox Road, Suite E Contact Name: MIKE BAUM  
 City, State, Zip: Glen Allen, VA 23060 Sampler Name: MIKE BAUM  
 EHS Client Account #: 48-1920 A Project #: INR1060666, 01  
 Phone #: (804) 320-9300 Fax #: (804) 320-9302  
 P.O. #:

Sample Number	Sample & Date	Asbestos					Lead					Other Metals <small>(Specify metals below)</small>			Indoor Air Quality				Particulate: Total Nuisance (NIOSH 0500) Respirable (NIOSH 0600)		Comments <small>* Specify: -Total Fungal Count w/ID -Stachybotrys Culture w/Total Fungal Count &amp; IDS -Total Thermophilic Fungal Count w/ID</small>				
		Bulk ID by PLM (PCM) Fiber Count	PLM Point Count	PLM Gravimetric	TEM AHERA (Air)	TEM Chatfield (Bulk)	Air	Paint (%)	Paint (PPM)	Paint (mg/cm <sup>2</sup> )	Soil	Wine * (Sea Note)	TCLP (Pb)	Waste Water	TCLP RCRA 8	Welding Fume	Toxic Metal Profile	Biocassette	Slide	Surface Swab		Surface Tape	Bulk	Culturable*	Air Volume (L) OR Wipe Area (ft <sup>2</sup> ) OR Scrape Area (cm <sup>2</sup> )
TCLP 1213	9/1/06											<input checked="" type="checkbox"/>													
<p><b>SAMPLE CONDITION</b>  <b>Acceptable</b>  <b>Unacceptable</b></p>																									

\* Do wipe samples submitted meet ASTM E1792 requirements? Yes  No

Released by: MIKE BAUM Signature: [Signature] Date/Time: 9/1/06  
 Received by: T. Johnson Signature: [Signature] Date/Time: 9/1/06  
 Received by: \_\_\_\_\_ Signature: \_\_\_\_\_ Date/Time: \_\_\_\_\_

revised 2/2002



HAZARDOUS MATERIALS STUDY  
NASA LANGLEY RESEARCH CENTER  
BUILDING 1213

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APPENDIX C  
PHOTOGRAPHS



**BUILDING 1213 ASBESTOS-CONTAINING MATERIALS**



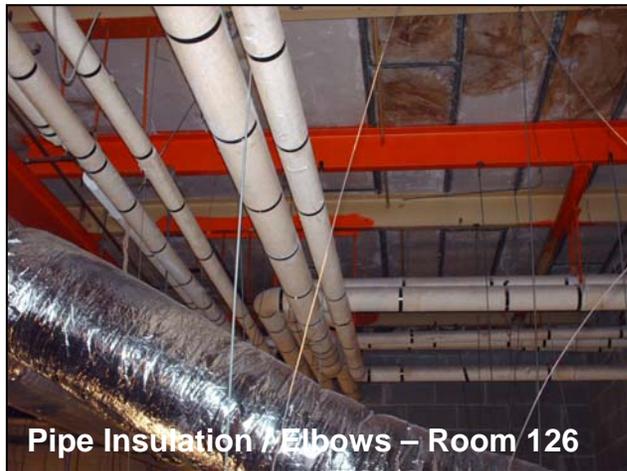
**Paper Duct Wrap / Black Mastic**



**Transite Panels**



**Light Fixture Heat Shield**



**Pipe Insulation / Elbows – Room 126**



**Pipe Insulation / Elbows - Crawlspace**



**Vibration Damper**

**APPENDIX D**  
**CERTIFICATION AND ACCREDITATIONS**

DEPARTMENT OF PROFESSIONAL AND OCCUPATIONAL REGULATION  
COMMONWEALTH OF VIRGINIA

EXPIRES ON  
05-31-2007

3600 West Broad Street, Richmond, VA 23230  
Telephone: 1 (804) 367-8500

NUMBER  
3305 001030

VIRGINIA ASBESTOS LICENSE  
PROJECT DESIGNER LICENSE

MICHAEL ALLEN BAUM  
5003 HALLMARK COURT  
RICHMOND, VA 23234



*Jay W. DeBoer*  
Jay W. DeBoer, Director

ALTERATION OF THIS DOCUMENT, USE AFTER EXPIRATION, OR USE BY PERSONS OR FIRMS OTHER THAN THOSE NAMED MAY RESULT IN CRIMINAL PROSECUTION UNDER THE CODE OF VIRGINIA.

(SEE REVERSE SIDE FOR NAME AND/OR ADDRESS CHANGE)