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ASBESTOS-CONTAINING MATERIAL RE-INSPECTION FOR BUILDING 35 VOLUME 7 CNC
CHARLESTON SC
2/15/2000
BAT ASSOCIATES, INC.

Volume 7

**Asbestos-Containing Material Re-inspection
For Building 35
Charleston Naval Shipyard
Charleston, South Carolina**

Contract No. N2467-96-D-0998
Delivery Order No. 0013

Prepared for:

Department of the Navy
Southern Division
NAVFACENGCOM
2305 Eagle Drive
North Charleston, SC 29419

Prepared by:

BAT Associates, Inc.
5151 Brook Hollow Parkway
Suite 250
Norcross, Georgia 30071
(770) 242-3908

February 15, 2000

APPENDIX A
SAMPLE AND ACM LOCATION DRAWINGS

APPENDIX B

**PHOTOGRAPHIC DOCUMENTATION
OF IDENTIFIED ACM**

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1.0 EXECUTIVE SUMMARY

BAT Associates, Inc. (BAT) was retained by the U.S. Department of the Navy, Southern Division (SouthDiv), Naval Facilities Engineering Command (NAVFACENGCOM) to perform an asbestos-containing material (ACM) re-inspection of Building 35 located at the Charleston Naval Shipyard (CNS) in Charleston, South Carolina.

A list of ACM identified in Building 35 is summarized in Table 1.0.

Table 1.0
Summary of Identified ACM

HA No.	Material Description	Sample Analysis Results	Approx. Quantity of ACM	NESHAP Category
1	Floor Tile, 9" x 9" black w/ black mastic	Tile = 7% chrysotile, Mastic = 2% chrysotile	21,000 SF	Category I, non-friable
4	Floor Tile, 12" x 12" brown with light and dark streaks w/ black mastic	Tile = 3% chrysotile, Mastic = 10% chrysotile	5,230 SF	Category I, non-friable
6	Floor Tile, 12" x 12" off-white with brown streaks w/ black mastic	Tile = 10% chrysotile, Mastic = 1-2% chrysotile	7,420 SF	Category I, non-friable
7	Floor Tile, 12" x 12" off-white with beige streaks w/ black mastic	Tile = 5% chrysotile, Mastic = 5% chrysotile	7,140 SF	Category I, non-friable
17	Pipe Fitting Insulation, 3" with canvas wrap on domestic water	Assumed to contain asbestos due to inaccessibility of the material in walls	375 EA	Regulated, friable
18	Pipe Fitting Insulation, 3" with canvas wrap on	15-20% chrysotile, 15-20% amosite	300 EA	Regulated, friable
22	Pipe Insulation, 12" with metal wrap	Layer 1 = 15% amosite, Layer 2 = NAD	160 LF	Regulated, friable

NOTES: HA = Homogeneous Area SF = Square Feet LF = Linear Feet
 EA = Each

1. One percent or less asbestos content is considered a non-asbestos-containing material by EPA and the State of South Carolina.
2. Federal and state regulations require a minimum of three non-asbestos-containing analysis results per homogeneous area (material) to classify that material as being a non-asbestos-containing material. However, one "positive" asbestos-containing analysis result would classify that material as being an asbestos-containing material.
3. No Quality Control discrepancies were noted.

BAT recommends the following management actions for the identified ACM in Building 35 in Table 2.0.

Table 2.0
Recommended Response Actions

HA No.	Material Description	Recommended Response Action
1	Floor Tile, 9" x 9" black w/ black mastic	Remove prior to renovation or demolition
4	Floor Tile, 12" x 12" brown with light and dark streaks w/ black mastic	Remove prior to renovation or demolition
6	Floor Tile, 12" x 12" off-white with brown streaks w/ black mastic	Remove prior to renovation or demolition
7	Floor Tile, 12" x 12" off-white with beige streaks w/ black mastic	Remove prior to renovation or demolition
17	Pipe Fitting Insulation, 3" with canvas wrap on domestic water	Remove prior to renovation or demolition
18	Pipe Fitting Insulation, 3" with canvas wrap on	Remove prior to renovation or demolition
22	Pipe Insulation, 12" with metal wrap	Remove prior to renovation or demolition

Other suspect ACM not identified could be present in areas of the building inaccessible to the asbestos building inspectors. For example, materials could exist in walls and other locations where access could only be gained by demolition of the building. Also, other materials currently not recognized by the asbestos building inspection industry could exist.

The total estimated cost for the removal of the identified and/or assumed ACM in Building 35 is approximately \$129,500. See Section 10.0 for a break down of the preliminary cost estimate for the removal of the identified or assumed ACM.

2.0 BUILDING INSPECTION INFORMATION FORM

Building Name: Barracks
Building Number: 35
Facility: Charleston Naval Shipyard
Building Area (square footage): 35,880
Year Built: 1959
Building Type: Living Quarters
No. of Floors in Building: Three
Purpose of ACM Survey: Re-Inspection
Facility Unit Identification Code (UIC): N/A

Building Contact: Mr. Matthew Humphrey
Contact's Telephone No.: (843) 743-9985
Building Survey Date(s): November 23, 1999 and January 28, 2000

Asbestos Inspector's Name: Mr. Jason McGlashan and Mr. Foshie Bell
Asbestos Inspector's Accreditation No: GA2900
Inspection Company: BAT Associates, Inc.
Company Telephone No. (770) 242-3908

3.0 INTRODUCTION

BAT Associates, Inc. (BAT) was retained by the U.S. Department of the Navy, Southern Division (SouthDiv), Naval Facilities Engineering Command (NAVFACENGCOM) to perform an asbestos-containing material (ACM) re-inspection of all buildings located at the Charleston Naval Shipyard in Charleston, South Carolina. The purpose of this re-inspection was to:

1. Perform a comprehensive ACM re-inspection of 34 buildings in accordance with Federal and U.S. Navy requirements;
2. Assess the condition of previously identified friable and non-friable ACM; and
3. Provide a preliminary cost estimate for the removal of identified ACM.

The re-inspection was performed in accordance with the Navy's Asbestos Facility Inventory/Assessment Protocol (NEESA 70.2-010) and the U.S. Environmental Protection Agency's (USEPA) Asbestos Hazard Emergency Response Act (AHERA) and the Asbestos School Hazard Abatement Reauthorization Act (ASHARA).

The results of the re-inspection survey are presented in 24 separate volume reports. This report describes the results for Building 35.

This re-inspection survey was performed by Mr. Jason McGlashan and Mr. Foshie Bell, under the direct supervision of Mr. Douglas J. Milton, CIH, on November 23, 1999 and January 28, 2000. Mr. McGlashan is an accredited building inspector. Mr. Bell is an accredited asbestos building inspector and management planner. Mr. Milton, a Certified Industrial Hygienist, is an accredited asbestos inspector, management planner, and project designer.

This report discusses the sampling methodology used during the re-inspection and assessment (Section 4.0); a list of all identified suspect materials (Section 5.0); a summary of the bulk sample analysis results (Section 6.0); results of quality control sampling; (Section 7.0); physical assessments of the identified ACM (Section 8.0); a hazard assessment of the identified ACM (Section 9.0); preliminary cost estimates for removal (Section 10.0); and conclusions (Section 11.0). Appendix A contains drawings identifying the location of collected bulk samples and the locations of identified ACM. Appendix B contains photographic documentation of identified ACM. Appendix C contains personnel and laboratory accreditations. Appendix D contains laboratory analysis results.

The assessment protocol for ACM involved three distinct steps:

1. Performed preliminary walk-through of the building to identify suspect ACM and to determine the amount of suspect ACM, to define the number of samples to be collected, to identify access problems (e.g., collection of samples in a limited access pipe chase below the building), and to determine the degree of personal protection necessary for the bulk sample collection.

2. Visually inspected the building for ACM to identify the location of the suspect ACM and to determine if the material was friable or non-friable. Suspect materials were then categorized according to the EPA National Emission Standards for Hazardous Air Pollutants (NESHAP) for asbestos as: Category I non-friable materials, Category II non-friable materials, and Regulated (friable) Asbestos-Containing Materials (RACM).
3. Collected bulk samples for the analysis for asbestos content (see Section 4.0, *Sampling Methodology*, for details).

4.0 SAMPLE METHODOLOGY

Representative, randomly selected bulk samples were collected in accordance with the Navy's and AHERA sampling protocol, as described in 40 CFR 353.35, and in accordance with BAT's contract requirements. Bulk samples were collected from homogenous areas (materials) in a manner that minimized any release of airborne asbestos fibers. A homogeneous area (material) is defined as a material uniform in size, color and texture.

The minimum number of samples collected from each homogeneous area was as follows:

1. *Friable Spray-Applied or Trowel-Applied Material* (including plaster)
 - a. Less than or equal to 1,000 Square Feet (S.F.) = 3 samples
 - b. Greater than 1,000 S.F and less than or equal to 5,000 S.F. = 5 samples
 - c. Greater than 5,000 = 7 samples
2. *Pipe and Duct Insulation*
 - a. Three samples per homogeneous area of insulation.
3. *Elbows, Valves, Fittings, and Connection Mud*

Three representative samples from each type of insulated elbow, valve, fitting, and connection mud.
4. *Boiler, Tanks, and Furnaces*

A minimum of 3 samples per unit.
5. *Patchwork*

Patchwork is defined as a patch or repair to existing material based on the following quantities:

- a. Surfacing material patches are limited to a maximum of 6 S.F.
- b. Pipe and duct insulation patches are limited to a maximum of 6 Linear Feet (L.F.) or 6 S.F.
- c. Boiler, tank, and furnace patches are limited to 6 S.F.

If the patchwork exceeded the limits prescribed above, it was sampled according to the homogeneous area protocol in items 1 to 4 above. If a material qualifies as patchwork, a single sample was collected per patch.

6. *Ceiling or Acoustical Tile*

3 samples

7. *Miscellaneous Friable Material*

3 samples

8. *Non-Friable Material*

Non-friable materials for purpose of this survey included Transite-type panels, floor tiles, floor tile mastic, and other miscellaneous materials.

Minimum of 3 samples.

The procedures followed for collection of each bulk sample is outlined briefly below:

1. The accredited inspector collecting the sample was equipped with the appropriate personal protective equipment. This included a half-mask air-purifying respirator, protective gloves and protective eyewear.
2. The surface of the material being sampled was wetted with amended water (containing a surfactant to aid penetration) mist to lessen the risk of fiber release during sampling.
3. Each sample was extracted using the appropriate equipment, (e.g., a sample container, knife, core borer). Care was taken to insure that all layers of the suspect materials, down to the substrate, were included in the sample.
4. Each sample was placed in an individual container, which was then sealed and labeled with a unique identification number which was also recorded on the sample data log-in sheet.

5. After each sample was collected, the area immediately surrounding the sampling location was inspected for debris and wet-cleaned as necessary to lessen the risk of an airborne fiber release.
6. All necessary data were recorded on the BAT Suspect Material Inventory Form including sample number, sample location, type of suspect material, name of inspector collecting the sample and other relevant information.
7. Samples were then transported to Cape Environmental Management Inc. (CAPE) Asbestos Laboratories in Atlanta, Georgia, for Polarized Light Microscopy (PLM) analysis. The CAPE Asbestos Laboratory participates in the National Voluntary Laboratory Assurance Program (NVLAP) for the analysis of asbestos content in suspect materials. CAPE's NVLAP Laboratory Code is 102111-0.
8. BAT collected duplicate samples during the collection of primary bulk sampling for quality control (QC) purposes. QC samples were collected at ten percent of the bulk sample locations. They were assigned unrelated sample identification numbers and analyzed by Analytical Environmental Services, Inc. (AES). AES participates in the National Voluntary Laboratory Assurance Program (NVLAP) for the analysis of asbestos content in suspect materials. AES's NVLAP Laboratory Code is 102033-0.
9. Upon receipt by the laboratory, the samples were logged in and assigned a unique laboratory identification number. The laboratory analyzed the samples in accordance with 40 CFR 353.87 subpart F. Copies of the laboratory accreditations for both laboratories may be found in Appendix C.

5.0 ASBESTOS INVENTORY AND ASSESSMENT

Table 3.0 describes the suspect ACM identified in and around Building 35.

Table 3.0
Summary of Identified Suspect ACM

HA No.	Description of Suspect ACM	Location of Suspect ACM	AHERA Category of Material
1	Floor Tile, 9" x 9" black w/ black mastic	Throughout the building, below HA # 2, 3, 4, 6, and 7	Misc.
2	Floor Tile, 12" x 12" off-white with gray and beige speckles w/ black mastic	Third floor, corridor (over HA # 1)	N/A
3	Floor Tile, 12" x 12" blue with white streaks w/ black mastic	Third floor, corridor (over HA # 1) and janitor closet	N/A
4	Floor Tile, 12" x 12" off-white with beige and brown speckles w/ black mastic	Third floor, rooms (over HA # 1)	Misc.
5	Floor Tile, 12" x 12" aqua with green streaks w/ brown mastic	First floor, day room	N/A
6	Floor Tile, 12" x 12" off-white with beige streaks w/ black mastic	First floor, main lobby and office; second floor, all rooms except restrooms and stairwells (over HA # 1)	Misc.
7	Floor Tile, 12" x 12" off-white with beige and brown streaks w/ black mastic	First floor, east and west wing rooms, corridor and day room (over HA # 1)	Misc.
8	Floor Tile, 12" x 12" beige with brown speckles w/ black mastic	First floor, janitor closet	N/A
9	Floor Tile, 12" x 12" red w/ black mastic	Second floor, janitor closet	N/A
10	Sheet Flooring, yellow and brown w/ black mastic	First floor, day room	N/A
11	Drywall, on walls	Throughout the building	N/A
12	Joint Sealer Compound, on drywall	Throughout the building	N/A
13	Ceiling Tile, 2' x 4' white suspended groove and pinhole (old)	First floor, day room	N/A
14	Ceiling Tile, 2' x 4' white suspended groove and pinhole (new)	First floor, day room	N/A
15	Spray-Applied Textured Ceiling Finish	Third floor, restrooms	N/A
17	Pipe Fitting Insulation, 3" with canvas wrap on domestic water	All floors, in walls behind all water fixtures	TSI
18	Pipe Fitting Insulation, 3" with canvas wrap on steam	Piping to all wall mounted radiators	TSI
19	Window Glazing, interior	All interior windows	N/A
20	Roofing, built-up	Roof	N/A
22	Pipe Insulation, 12" with metal wrap	In crawl space and between buildings 35 and 36	TSI
23	Tank Insulation	In exterior mechanical room	N/A

HA No.	Description of Suspect ACM	Location of Suspect ACM	AHERA Category of Material
24	Mastic on Sink, black	Second floor, writing room	N/A

Notes: Misc. = Miscellaneous Material N/A = Not Applicable

6.0 SUMMARY OF SAMPLE ANALYSIS RESULTS

Table 4.0 contains a summary of the bulk sample analysis results for suspect ACM identified in this building. Sample identification numbers do not necessarily match the building number since barracks 31, 32, 33, 34, 35, and 36 are of similar construction, have the same square footage, and the same construction date and were inspected as one unit.

All thermal system insulation (TSI), if present, was classified as friable material. As long as the outer covering remains intact and is in good condition the TSI can be considered non-friable (29 CFR 353.85). Ceiling tile, if asbestos is present was considered a friable material. However, if non-friable materials are drilled, sawed, ground or otherwise physically or mechanically disturbed, they may release asbestos fibers to the environment and therefore would be considered a friable material.

According to AHERA protocol, all samples within a homogeneous area must have an asbestos content of one percent or less by weight using Polarized Light Microscopy (PLM) analysis before the material can be categorized as non-asbestos-containing. If one sample is determined as asbestos-containing using PLM analysis, the entire homogeneous area must be classified asbestos-containing.

Table 4.0
Summary of Sample Analysis Results

HA No.	Sample ID No.	Suspect Material Description	Asbestos Content	Friability
1	31-5-1	Floor Tile, 9" x 9" black w/ black mastic	Tile = 7% chrysotile, Mastic = 2% chrysotile	Non
2	32-2-1, 32-2-2, 32-2-3	Floor Tile, 12" x 12" off-white with gray streaks w/ black mastic	Tile = NAD, Mastic = NAD	N/A
3	33-4-1, 33-4-2, 33-4-3	Floor Tile, 12" x 12" dark blue with white streaks w/ black mastic	Tile = NAD, Mastic = NAD	N/A
4	33-5-1	Floor Tile, 12" x 12" brown with light and dark streaks w/ black mastic	Tile = 3% chrysotile, Mastic = 10% chrysotile	Non
5	35-5-1, 35-5-2, 35-5-3	Floor Tile, 12" x 12" aqua with green streaks w/ brown mastic	Tile = NAD, Mastic = NAD	N/A
6	31-2-1	Floor Tile, 12"x 12" off-white with brown streaks w/ black mastic	Tile = 10% chrysotile, Mastic = 1-2% chrysotile	Non
7	34-3-1, 34-3-2	Floor Tile, 12'x 12" off-white with beige streaks w/ black mastic	Tile = 5% chrysotile, Mastic = 5% chrysotile	Non
8	34-10-1, 34-10-2, 34-10-3	Floor Tile, 12"x 12" beige with brown streaks w/ black mastic	Tile = NAD, Mastic = NAD	N/A

HA No.	Sample ID No.	Suspect Material Description	Asbestos Content	Friability
9	32-6-1, 32-6-2, 32-6-3	Floor Tile, 12"x 12" red w/ black mastic	Tile = NAD, Mastic = 3% chrysotile	Non
10	35-10-1, 35-10-2, 35-10-3	Sheet Flooring, yellow and brown w/ black mastic	NAD	N/A
11	31-10-1, 31-10-2, 31-10-3	Drywall, on walls	NAD	N/A
12	31-11-1, 31-11-2, 31-11-3	Joint Sealer Compound, on drywall	NAD	N/A
13	31-6-1, 31-6-2, 31-6-3	Ceiling Tile, 2' x 4' white suspended groove and pinhole (old)	NAD	N/A
14	31-7-1, 31-7-2, 31-7-3	Ceiling Tile, 2' x 4' white suspended groove and pinhole (new)	NAD	N/A
15	33-11-1, 33-11-2, 33-11-3	Spray-Applied Textured Ceiling Finish	NAD	N/A
17	Assume	Pipe Fitting Insulation, 3" with canvas wrap on domestic water	Assumed to contain asbestos due to inaccessibility of the material in walls	Friable
18	33-3-1, 33-3-2, 33-3-3	Pipe Fitting Insulation, 3" with canvas wrap on steam	15-20% chrysotile, 15-20% amosite	Friable
19	36-4-1, 36-4-2, 36-4-3	Window Glazing, interior	NAD	N/A
20	36-15-1, 36-15-2, 36-15-3	Roofing, built-up	NAD	N/A
22	Exterior Pipe-32	Pipe Insulation, 12" with metal wrap	Layer 1 = 155 amosite, Layer 2 = NAD	Friable
23	B35-S1, B35-S2, B35-S3	Tank Insulation	NAD	N/A
24	35-24-1, 35-24-2, 35-24-3	Mastic on Sink, black	NAD	N/A

Notes: NAD = No Asbestos Detected N/A = Not Applicable

7.0 RESULTS OF QUALITY CONTROL SAMPLING

The purpose of quality control (QC) sampling was to ensure reproducibility of the primary laboratory analysis results. Duplicate samples were collected for ten percent of the total building samples for QC purposes.

Quality control sampling and analysis was performed for buildings 31, 32, 33, 34, and 36.

No discrepancies between primary laboratory and quality control laboratory bulk sample analysis were noted.

8.0 PHYSICAL ASSESSMENT OF IDENTIFIED ACM

The following sections contain a summary of the methodology BAT specialists used to conduct the physical assessment for this building. This methodology was developed in accordance with USEPA AHERA re-inspection requirements contained in 40 CFR Part 353.85.

1. Physical Assessment for Friable ACM.

A. **Condition.** Friable ACM were assigned to one of the following categories based on a visual inspection and touch test:

- 1) **Significantly Damaged Condition.** Material which met one or both of the following characteristics:
 - a. Ten percent (10%) or more of the material in the functional space is crumbled, blistered, or is hanging from the surface, deteriorated, showing adhesive failure, water stained, gouged or marred, and the damage is evenly distributed.
 - b. Twenty-five percent (25%) or more of the material in the functional space is crumbled, blistered, or is hanging from the surface, deteriorated, showing adhesive failure, water stained, gouged or marred, and the damage is localized.
- 2) **Damaged Condition.** Material which met one or both of the following characteristics:
 - a. The surface is crumbling, blistered, water stained, gouged or marred, or otherwise damaged on less than ten percent (10%) of the material in the functional space (but material is too damaged to be characterized as good condition) and the damage is evenly distributed.
 - a. The surface is crumbling, blistered, water stained, gouged or marred, or otherwise damaged on twenty-five percent (25%) or more of the material in the functional space (but material is too damaged to be characterized as good condition) and the damage is localized.
- 3) **Good Condition.** Material with very limited, or no visible damage or deterioration.

B. **Potential for Disturbance.** Friable ACM were assigned to one of the following categories based on a visual inspection and assessment of surroundings:

- 1) **Potential for Significant Damage.** Material which met one or more of the following conditions:
 - a. High potential for Contact. Service workers are in the vicinity of the material more than once each week or the material is in a public area and is accessible to building occupants.
 - b. High Potential for Vibration. Loud motors or engines present in the vicinity of the material or there are intrusive noises or easily sensed vibrations from surrounding area, such as nearby highways or airports.
 - c. High Potential for Air Erosion. High velocity air moving across or against material.

- 2) **Potential for Damage.** Material which met one or more of the following conditions for potential for significant damage:
 - a. Moderate Potential for Contact. Service workers are in the vicinity of the material at least once each month, but less than once each week or the material is in a room or office and is accessible to the occupants.
 - b. Moderate Potential for Vibration. Motors or engines present but not obtrusive or occasional loud noise in the vicinity of the material.
 - c. Moderate potential for Air Erosion. Noticeable movement of air across or against material, but not high in velocity.

- 3) **Low Potential for Damage.** Material which met one or more of the following conditions and met none of the conditions for potential for significant damage or potential for damage:
 - a. Low Potential for Contact. Service workers are in the vicinity of the material less than once each month or the material is visible but not accessible to the building occupants in the course of normal activity.
 - b. Low Potential for Vibration. None of the conditions for high or moderate potential for vibration are met.
 - c. Low Potential for Air Erosion. None of the conditions for high or moderate potential for air erosion are met.

2. Physical Assessment for Thermal ACM.

A. **Condition.** Thermal ACMs were assigned to one of the following categories based on a visual inspection:

- 1) **Significantly Damaged Condition.** Material which met one or both of the following characteristics:
 - a. Missing jackets, crushed, heavily gouged, or punctured insulation on equal to or greater than ten percent (10%) of the material in the functional space, and the damage is evenly distributed.
 - b. Missing jackets, crushed, heavily gouged, or punctured insulation on equal to or greater than twenty-five percent (25%) of the material in the functional space, and the damage is localized.
- 2) **Damaged Condition.** Material which met one or both of the following characteristics:
 - a. Missing jackets, crushed, heavily gouged, or punctured insulation on less than ten percent (10%) of the material in the functional space, and the damage is evenly distributed.
 - b. Missing jackets, crushed, heavily gouged, or punctured insulation on greater than twenty-five percent (25%) of the material in the functional space, and the damage is localized.
- 3) **Good Condition.** Material with very limited, or no visible damage or deterioration.

B. **Potential for Disturbance.** Thermal ACMs were assigned to one of the following categories based on a visual inspection and assessment of surroundings:

- 1) **Potential for Significant Damage.** Material which met one or more of the following conditions:
 - a. **High Potential for Contact.** Service workers are in the vicinity of the material more than once each week or the material is in a public area and is accessible to building occupants.
 - b. **High Potential for Vibration.** Loud motors or engines present in the vicinity of the material or there are intrusive noises or easily sensed vibrations from surrounding area, such as a nearby highway or airport.

- c. High Potential for Air Erosion. High velocity air moving across or against the material.
- 2) **Potential for Damage.** Material which met one or more of the following conditions and met none of the conditions for potential for significant damage.
- a. Moderate Potential for Contact. Service workers are in the vicinity of the material at least once each month but less than once each week or the material is in a room or office and is accessible to the occupants.
 - b. Moderate Potential for Vibration. Motors or engines present but not obtrusive or occasional loud noise in the vicinity of the material.
 - c. Moderate Potential for Air Erosion. Noticeable movement of air across or against material, but not high in velocity.
- 3) **Low Potential for Damage.** Material which met one or more of the following conditions and met none of the conditions for potential for significant damage or potential for damage:
- a. Low Potential for Contact. Service workers are in the vicinity of the material less than once per month or the material is visible but not accessible to the building occupants in the course of normal activity.
 - b. Low Potential for Vibration. None of the conditions for high or moderate potential for vibration are met.
 - c. Low Potential for Air Erosion. None of the conditions for high or moderate potential for air erosion are met.

PHYSICAL ASSESSMENT DATA FOR IDENTIFIED ACM

BUILDING: Charleston Naval Shipyard, Building Number 35

SAMPLE NUMBER(S): 31-5-1

HOMOGENEOUS AREA No.: 1

TYPE OF MATERIAL: Surfacing TSI X Other

Description: Floor Tile, 9" x 9" black w/ black mastic

Approximate Amount of Asbestos-Containing Material (Linear or Square Foot): 21,000 SF

CONDITION:

Percent Damage: <1 % Damage Localized Distributed

Type of Damage: Deterioration Water Physical

DESCRIPTION:

Overall Rating: X Good Fair Poor

POTENTIAL FOR DISTURBANCE:

Frequency of Potential Contact: X High Moderate Low

Description: Material is located in high traffic areas.

Influence of Vibration: High Moderate X Low

Description: None identified.

Potential for Air Erosion: High Moderate X Low

Description: None identified.

OVERALL RATING: X Potential for Significant Damage Potential for Damage Low Potential for Damage

COMMENTS: Material should be removed prior to renovation or demolition.

PHYSICAL ASSESSMENT DATA FOR IDENTIFIED ACM

BUILDING: Charleston Naval Shipyard, Building Number 35

SAMPLE NUMBER(S): 33-5-1

HOMOGENEOUS AREA No.: 4

TYPE OF MATERIAL: Surfacing TSI X Other

Description: Floor Tile, 12" x 12" brown with light and dark streaks w/ black mastic

Approximate Amount of Asbestos-Containing Material (Linear or Square Foot): 5,230 SF

CONDITION:

Percent Damage: <1 % Damage Localized Distributed

Type of Damage: Deterioration Water Physical

DESCRIPTION:

Overall Rating: X Good Fair Poor

POTENTIAL FOR DISTURBANCE:

Frequency of Potential Contact: X High Moderate Low

Description: Material is located in high traffic areas.

Influence of Vibration: High Moderate X Low

Description: None identified.

Potential for Air Erosion: High Moderate X Low

Description: None identified.

OVERALL RATING: X Potential for Significant Damage Potential for Damage Low Potential for Damage

COMMENTS: Material should be removed prior to renovation or demolition.

PHYSICAL ASSESSMENT DATA FOR IDENTIFIED ACM

BUILDING: Charleston Naval Shipyard, Building Number 35

SAMPLE NUMBER(S): 31-2-1

HOMOGENEOUS AREA No.: 6

TYPE OF MATERIAL: Surfacing TSI X Other

Description: Floor Tile, 12" x 12" off-white with brown streaks w/ black mastic

Approximate Amount of Asbestos-Containing Material (Linear or Square Foot): 7,420 SF

CONDITION:

Percent Damage: <1 % Damage Localized Distributed

Type of Damage: Deterioration Water Physical

DESCRIPTION:

Overall Rating: X Good Fair Poor

POTENTIAL FOR DISTURBANCE:

Frequency of Potential Contact: X High Moderate Low

Description: Material is located in high traffic areas.

Influence of Vibration: High Moderate X Low

Description: None identified.

Potential for Air Erosion: High Moderate X Low

Description: None identified.

OVERALL RATING: X Potential for Significant Damage Potential for Damage Low Potential for Damage

COMMENTS: Material should be removed prior to renovation or demolition.

PHYSICAL ASSESSMENT DATA FOR IDENTIFIED ACM

BUILDING: Charleston Naval Shipyard, Building Number 35

SAMPLE NUMBER(S): 34-3-1 and 34-3-2

HOMOGENEOUS AREA No.: 7

TYPE OF MATERIAL: Surfacing TSI Other

Description: Floor Tile, 12" x 12" off-white with beige streaks w/ black mastic

Approximate Amount of Asbestos-Containing Material (Linear or Square Foot): 7,140 SF

CONDITION:

Percent Damage: <1 % Damage Localized Distributed

Type of Damage: Deterioration Water Physical

DESCRIPTION:

Overall Rating: Good Fair Poor

POTENTIAL FOR DISTURBANCE:

Frequency of Potential Contact: High Moderate Low

Description: Material is located in high traffic areas.

Influence of Vibration: High Moderate Low

Description: None identified.

Potential for Air Erosion: High Moderate Low

Description: None identified.

OVERALL RATING: Potential for Significant Damage Potential for Damage Low Potential for Damage

COMMENTS: Material should be removed prior to renovation or demolition.

PHYSICAL ASSESSMENT DATA FOR IDENTIFIED ACM

BUILDING: Charleston Naval Shipyard, Building Number 35

SAMPLE NUMBER(S): Assumed to contain asbestos

HOMOGENEOUS AREA No.: 17

TYPE OF MATERIAL: Surfacing TSI Other

Description: Pipe Fitting Insulation, 3" white with canvas wrap on domestic water

Approximate Amount of Asbestos-Containing Material (Linear or Square Foot): 375 EA

CONDITION:

Percent Damage: UNK % Damage Localized Distributed

Type of Damage: Deterioration Water Physical

DESCRIPTION:

Overall Rating: UNK Good Fair Poor

POTENTIAL FOR DISTURBANCE:

Frequency of Potential Contact: High Moderate Low

Description: Material is located in walls.

Influence of Vibration: High Moderate Low

Description: None identified.

Potential for Air Erosion: High Moderate Low

Description: None identified.

OVERALL RATING: Potential for Significant Damage Potential for Damage Low Potential for Damage

COMMENTS: Material should be removed prior to renovation or demolition.

PHYSICAL ASSESSMENT DATA FOR IDENTIFIED ACM

BUILDING: Charleston Naval Shipyard, Building Number 35

SAMPLE NUMBER(S): 33-3-1, 33-3-2, and 33-3-3

HOMOGENEOUS AREA No.: 18

TYPE OF MATERIAL: Surfacing TSI Other

Description: Pipe Fitting Insulation, 3" with canvas wrap on steam

Approximate Amount of Asbestos-Containing Material (Linear or Square Foot): 300 EA

CONDITION:

Percent Damage: <1 % Damage Localized Distributed

Type of Damage: Deterioration Water Physical

DESCRIPTION:

Overall Rating: Good Fair Poor

POTENTIAL FOR DISTURBANCE:

Frequency of Potential Contact: High Moderate Low

Description: Material is located near the walls.

Influence of Vibration: High Moderate Low

Description: None identified.

Potential for Air Erosion: High Moderate Low

Description: None identified.

OVERALL RATING: Potential for Significant Damage Potential for Damage Low Potential for Damage

COMMENTS: Material should be removed prior to renovation or demolition.

PHYSICAL ASSESSMENT DATA FOR IDENTIFIED ACM

BUILDING: Charleston Naval Shipyard, Building Number 35

SAMPLE NUMBER(S): Exterior pipe-32

HOMOGENEOUS AREA No.: 22

TYPE OF MATERIAL: Surfacing TSI Other

Description: Pipe Insulation, 12" with metal wrap

Approximate Amount of Asbestos-Containing Material (Linear or Square Foot): 160 LF

CONDITION:

Percent Damage: 10 % Damage Localized Distributed

Type of Damage: Deterioration Water Physical

DESCRIPTION:

Overall Rating: Good Fair Poor

POTENTIAL FOR DISTURBANCE:

Frequency of Potential Contact: High Moderate Low

Description: Majority of material is located above head level.

Influence of Vibration: High Moderate Low

Description: None identified.

Potential for Air Erosion: High Moderate Low

Description: None identified.

OVERALL RATING: Potential for Significant Damage Potential for Damage Low Potential for Damage

COMMENTS: Material should be removed prior to renovation or demolition.

9.0 HAZARD ASSESSMENT OF IDENTIFIED ACM

AHERA describes a hazard assessment as "the means of collecting and considering whatever data were necessary for the management planner to make an informed, responsible recommendation to the LEA [Local Education Agency] consistent with response action requirements". As stated in AHERA, there is no single assessment method that is required in the regulations.

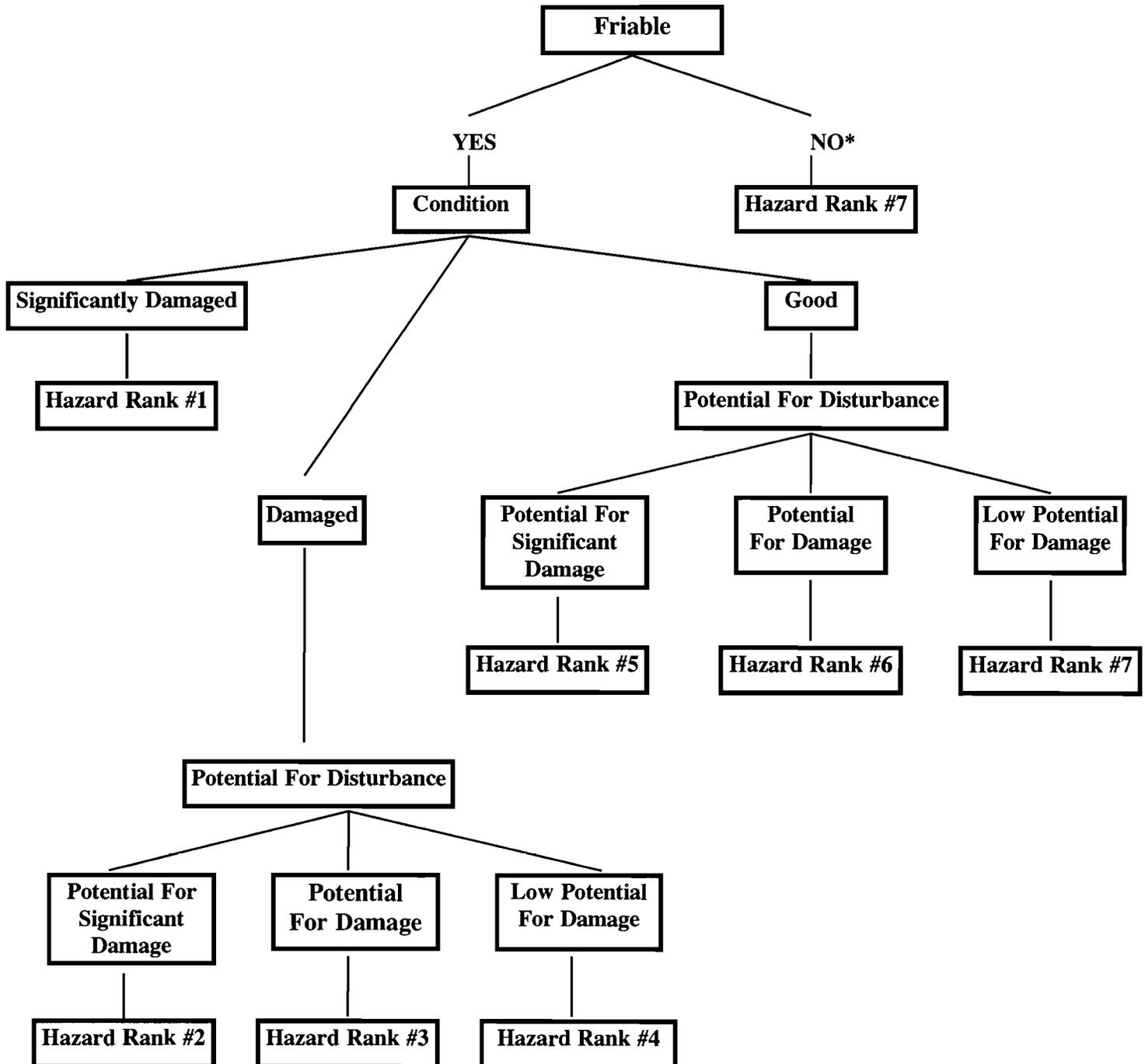
BAT adopted for this re-inspection one of the four general classes of hazard assessment models considered during the AHERA rule-making process. This method for hazard assessment is a modified decision tree as detailed in the USEPA, *Guidance for Assessing and Managing Exposure to Asbestos in Buildings*, or the *Pink Book*. Based on the physical assessment responses documented in the field, the BAT Management Planner proceeded through the decision tree process depicted in Figure 1.0 on the following page.

Only the identified and/or assumed asbestos-containing materials were assessed for hazards.

All of the identified and/or assumed asbestos-containing materials observed in this building were in good condition on the day of the survey.

Figure 1.0 Decision Tree Diagram For Hazard Assessment

Hazard rank #1 are materials of highest concern, and hazard rank #7 are the materials least likely to release asbestos fibers to the work area.



*Miscellaneous materials that are considered non-friable were placed in the Hazard Rank #8 category, which is in good condition with a low potential for damage.

**HAZARD ASSESSMENT AND RESPONSE ACTION DATA
FOR IDENTIFIED ACM**

BUILDING: Charleston Naval Shipyard, Building Number 35

SAMPLE NUMBER(S): 33-5-1

HOMOGENEOUS AREA No.: 4

TYPE OF MATERIAL: Surfacing TSI X Other

Description: Floor Tile, 12" x 12" brown with light and dark streaks w/ black mastic

Approximate Amount of Asbestos-Containing Material (Linear or Square Foot): 5,230 SF

Approximate Recommended Response Action Cost:

HAZARD ASSESSMENT

RESPONSE ACTION RECOMMENDATION

- | | |
|--|--|
| (1) Significantly damaged | <u>X</u> (1) Removal |
| (2) Damaged plus potential for significant damage | (2) Encapsulation |
| (3) Damaged plus potential for damage | (3) Enclosure |
| (4) Damaged plus low potential for damage | (4) Repair |
| (5) ACM (good condition) with potential for significant damage | (5) Operations and Maintenance Program |
| (6) ACM (good condition) with potential for damage | |
| (7) Any remaining friable ACM or friable suspect ACM | |
| <u>X</u> (8) Non-friable ACM | |

COMMENTS: Material should be removed prior to renovation or demolition.

**HAZARD ASSESSMENT AND RESPONSE ACTION DATA
FOR IDENTIFIED ACM**

BUILDING: Charleston Naval Shipyard, Building Number 35

SAMPLE NUMBER(S): 31-2-1

HOMOGENEOUS AREA No.: 6

TYPE OF MATERIAL: Surfacing TSI X Other

Description: Floor Tile, 12" x 12" off-white with brown streaks w/ black mastic

Approximate Amount of Asbestos-Containing Material (Linear or Square Foot): 7,420 SF

Approximate Recommended Response Action Cost:

HAZARD ASSESSMENT

RESPONSE ACTION RECOMMENDATION

- (1) Significantly damaged
- (2) Damaged plus potential for significant damage
- (3) Damaged plus potential for damage
- (4) Damaged plus low potential for damage
- (5) ACM (good condition) with potential for significant damage
- (6) ACM (good condition) with potential for damage
- (7) Any remaining friable ACM or friable suspect ACM
- X (8) Non-friable ACM

- X (1) Removal
- (2) Encapsulation
- (3) Enclosure
- (4) Repair
- (5) Operations and Maintenance Program

COMMENTS: Material should be removed prior to renovation or demolition.

**HAZARD ASSESSMENT AND RESPONSE ACTION DATA
FOR IDENTIFIED ACM**

BUILDING: Charleston Naval Shipyard, Building Number 35

SAMPLE NUMBER(S): 34-3-1 and 34-3-2

HOMOGENEOUS AREA No.: 7

TYPE OF MATERIAL: Surfacing TSI Other

Description: Floor Tile, 12" x 12" off-white with beige streaks w/ black mastic

Approximate Amount of Asbestos-Containing Material (Linear or Square Foot): 7,140 SF

Approximate Recommended Response Action Cost:

HAZARD ASSESSMENT

RESPONSE ACTION RECOMMENDATION

- (1) Significantly damaged
- (2) Damaged plus potential for significant damage
- (3) Damaged plus potential for damage
- (4) Damaged plus low potential for damage
- (5) ACM (good condition) with potential for significant damage
- (6) ACM (good condition) with potential for damage
- (7) Any remaining friable ACM or friable suspect ACM
- (8) Non-friable ACM

- (1) Removal
- (2) Encapsulation
- (3) Enclosure
- (4) Repair
- (5) Operations and Maintenance Program

COMMENTS: Material should be removed prior to renovation or demolition.

**HAZARD ASSESSMENT AND RESPONSE ACTION DATA
FOR IDENTIFIED ACM**

BUILDING: Charleston Naval Shipyard, Building Number 35

SAMPLE NUMBER(S): Assumed to contain asbestos

HOMOGENEOUS AREA No.: 17

TYPE OF MATERIAL: Surfacing TSI Other

Description: Pipe Fitting Insulation, 3" with canvas wrap on domestic water

Approximate Amount of Asbestos-Containing Material (Linear or Square Foot): 375 EA

Approximate Recommended Response Action Cost:

HAZARD ASSESSMENT

RESPONSE ACTION RECOMMENDATION

- | | |
|---|---|
| (1) Significantly damaged | <input checked="" type="checkbox"/> (1) Removal |
| (2) Damaged plus potential for significant damage | (2) Encapsulation |
| (3) Damaged plus potential for damage | (3) Enclosure |
| <input checked="" type="checkbox"/> (4) Damaged plus low potential for damage | (4) Repair |
| (5) ACM (good condition) with potential for significant damage | (5) Operations and Maintenance Program |
| (6) ACM (good condition) with potential for damage | |
| (7) Any remaining friable ACM or friable suspect ACM | |
| (8) Non-friable ACM | |

COMMENTS: Material should be removed prior to renovation or demolition.

**HAZARD ASSESSMENT AND RESPONSE ACTION DATA
FOR IDENTIFIED ACM**

BUILDING: Charleston Naval Shipyard, Building Number 35

SAMPLE NUMBER(S): 33-3-1, 33-3-2, and 33-3-3

HOMOGENEOUS AREA No.: 18

TYPE OF MATERIAL: Surfacing TSI Other

Description: Pipe Fitting Insulation, 3" with canvas wrap on steam

Approximate Amount of Asbestos-Containing Material (Linear or Square Foot): 300 EA

Approximate Recommended Response Action Cost:

HAZARD ASSESSMENT

RESPONSE ACTION RECOMMENDATION

- | | |
|---|---|
| (1) Significantly damaged | <input checked="" type="checkbox"/> (1) Removal |
| (2) Damaged plus potential for significant damage | (2) Encapsulation |
| (3) Damaged plus potential for damage | (3) Enclosure |
| <input checked="" type="checkbox"/> (4) Damaged plus low potential for damage | (4) Repair |
| (5) ACM (good condition) with potential for significant damage | (5) Operations and Maintenance Program |
| (6) ACM (good condition) with potential for damage | |
| (7) Any remaining friable ACM or friable suspect ACM | |
| (8) Non-friable ACM | |

COMMENTS: Material should be removed prior to renovation or demolition.

**HAZARD ASSESSMENT AND RESPONSE ACTION DATA
FOR IDENTIFIED ACM**

BUILDING: Charleston Naval Shipyard, Building Number 35

SAMPLE NUMBER(S): Exterior Pipe-32

HOMOGENEOUS AREA No.: 22

TYPE OF MATERIAL: Surfacing TSI Other

Description: Pipe Insulation, 12" with metal wrap

Approximate Amount of Asbestos-Containing Material (Linear or Square Foot): 160 LF

Approximate Recommended Response Action Cost:

HAZARD ASSESSMENT

RESPONSE ACTION RECOMMENDATION

- | | |
|---|---|
| (1) Significantly damaged | <input checked="" type="checkbox"/> (1) Removal |
| (2) Damaged plus potential for significant damage | (2) Encapsulation |
| <input checked="" type="checkbox"/> (3) Damaged plus potential for damage | (3) Enclosure |
| (4) Damaged plus low potential for damage | (4) Repair |
| (5) ACM (good condition) with potential for significant damage | (5) Operations and Maintenance Program |
| (6) ACM (good condition) with potential for damage | |
| (7) Any remaining friable ACM or friable suspect ACM | |
| (8) Non-friable ACM | |

COMMENTS: Material should be removed prior to renovation or demolition.

10.0 PRELIMINARY COST ESTIMATE FOR REMOVAL OF IDENTIFIED ACM

The following is a preliminary cost estimate for the abatement (removal) of identified ACM in Building 35. This estimate is based on removing all of the materials during the same project. It does not include the cost of replacement materials. The cost estimate includes, project surveillance, air monitoring, and disposal of materials. These costs are estimates only; BAT made no attempt to obtain bids from removal contractors for this work, however, the average unit costs of three asbestos abatement contractors were used to develop the preliminary removal costs. Additionally, quantities noted are based upon engineering measurements. BAT recommends the use of architectural measurements for more accurate quantification.

Material Description	Unit Cost (\$)	Quantity	Total Abatement Cost (\$)
Floor Tile (multi-layers) with Mastic	2.78	21,000 SF	58,380
Pipe Insulation (25-30 feet above ground)	5.25	160 LF	840
Pipe Fitting Insulation (including demolition of walls)	32.59	675 EA	21,998
Handling Cost	25.00	134EA	3,350
Mobilization	300.00	3 EA	900
Waste Disposal Cost	<u>50.00</u>	<u>8 CY</u>	<u>400</u>
Removal Subtotal			85,868
IH Supervision and Monitoring			<u>10,750</u>
Project Subtotal			96,618
Contingency (34%)			<u>32,850</u>
Project Total			129,468

SF = Square Feet LF = Linear Feet EA = Each CY = Cubic Yard

11.0 CONCLUSIONS

Inspection of Building 35 and confirmatory laboratory bulk sample analysis of selected samples identified the following materials with asbestos concentrations greater than one percent.

<u>Identified ACM</u>	<u>Quantity</u>	<u>NESHAP Category</u>
Floor Tile, 9" x 9" black w/ black mastic	21,000 SF	Category I, non-friable
Floor Tile, 12" x 12" brown with light and dark streaks w/ black mastic	5,230 SF	Category I, non-friable
Floor Tile, 12" x 12" off-white with brown streaks w/ black mastic	7,420 SF	Category I, non-friable
Floor Tile, 12" x 12" off-white with beige streaks w/ black mastic	7,140 SF	Category I, non-friable
Pipe Fitting Insulation, 3" with canvas wrap on	300 EA	Regulated, friable
Pipe Insulation, 12" with metal wrap	160 LF	Regulated, friable

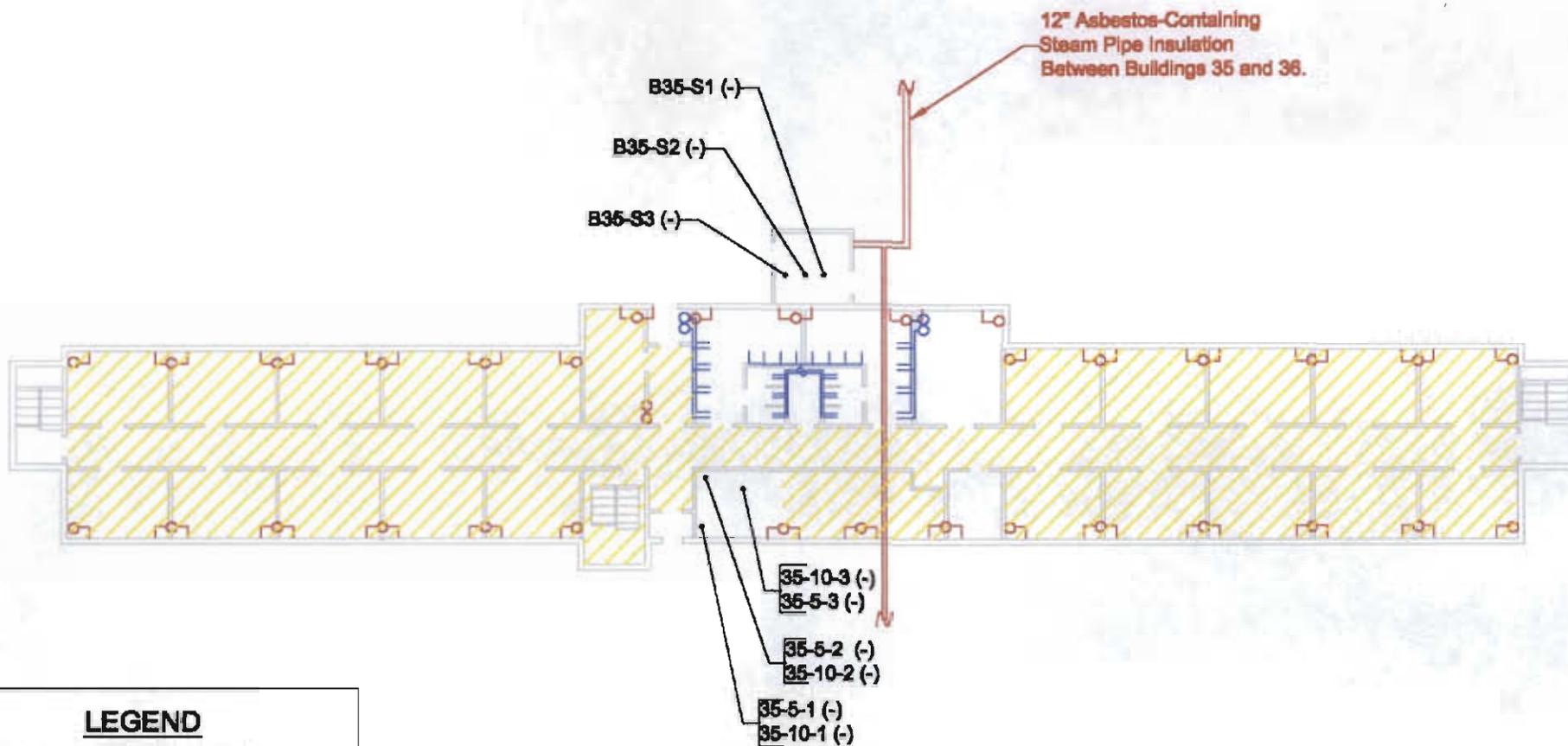
The following materials were not sampled in order to avoid disrupting their integrity, and they were assumed to contain asbestos:

<u>Assumed ACM</u>	<u>Quantity</u>	<u>NESHAP Category</u>
Pipe Fitting Insulation, 3" with canvas wrap on domestic water	375 EA	Regulated, friable

Other suspect ACM not identified could be present in areas of the building inaccessible to the asbestos-building inspectors. For example, material could exist in walls and other locations where access could only be gained by demolition of the building. Also, other materials currently not recognized as ACM by the asbestos building inspection industry could exist.

Rooms that were inaccessible to the asbestos-building inspectors have been identified on the drawings of the building in Appendix B, *Sample and ACM Location Drawings*.

EPA rules governing the application, removal and disposal of ACM were promulgated under NESHAP [40 CFR 61 Part M]. NESHAP requires the building owner or asbestos removal contractor to notify EPA when a building containing ACM is to be renovated, ACM is to be removed, or the building is to be demolished. At least 20 days notification is required "...if less than 260 linear feet of asbestos pipe covering or 160 square feet of asbestos material are removed during building renovation". Ten days notification is required when the amount is greater than 260 linear feet or 160 square feet of friable ACM.



LEGEND

- - Sample Location
- (-) - Non-Asbestos-Containing Sample Location
- Asbestos-Containing Floor Tile and Mastic
- Asbestos-Containing Pipe Fitting Insulation on Riser and Branches to Radiator
- Asbestos-Containing Pipe Fitting Insulation on Domestic Water (Inaccessible in Walls)

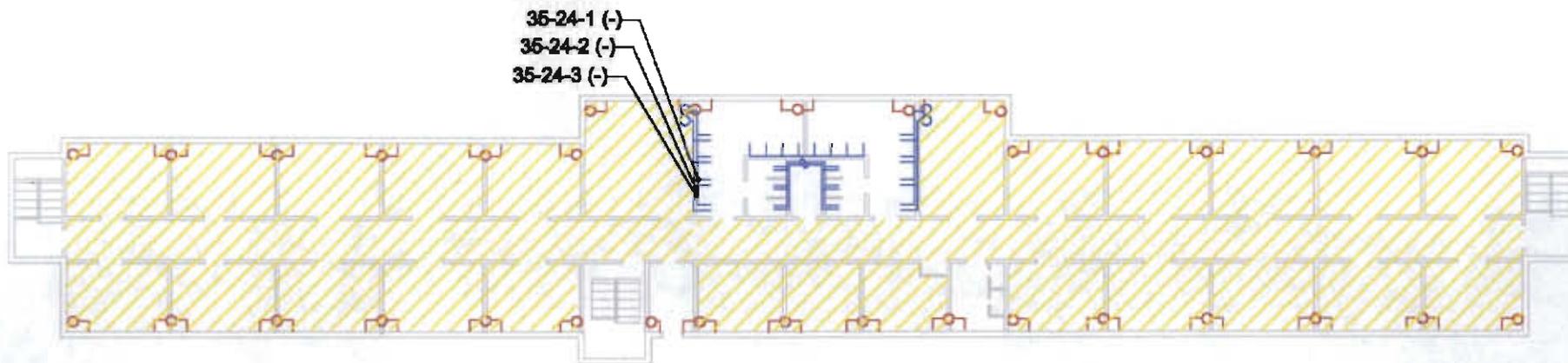
**BUILDING 35
FIRST FLOOR**

Sample and Asbestos-Containing Material Locations



12" Asbestos-Containing
Steam Pipe Insulation
Between Buildings 35 and 36.

BAT Associates, Inc.
ENVIRONMENTAL, HEALTH & SAFETY SERVICES
5151 BROOK HOLLOW PARKWAY, SUITE 250
NORCROSS, GA 30071



LEGEND

- - Sample Location
- (-) - Non-Asbestos-Containing Sample Location

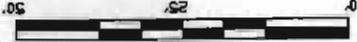
-  - Asbestos-Containing Floor Tile and Mastic
-  - Asbestos-Containing Pipe Fitting Insulation on Riser and Branches to Radiator
-  - Asbestos-Containing Pipe Fitting Insulation on Domestic Water (Inaccessible in Walls)

**BUILDING 35
SECOND FLOOR**

Sample and Asbestos-Containing Material Locations

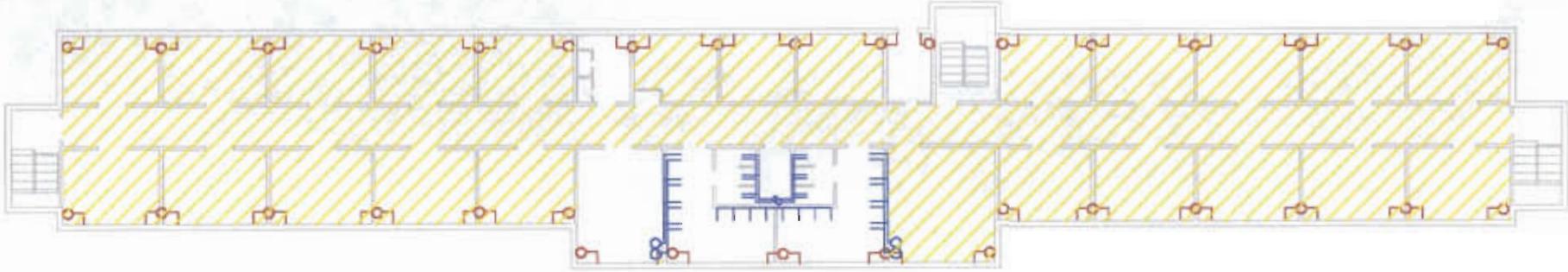


BAT Associates, Inc.
 ENVIRONMENTAL, HEALTH & SAFETY SERVICES
 5151 BROOK HOLLOW PARKWAY, SUITE 250
 NORCROSS, GA 30071



BUILDING 35
THIRD FLOOR
Asbestos-Containing
Material Locations

- LEGEND**
-  - Asbestos-Containing Floor Tile and Mastic
 -  - Asbestos-Containing Pipe Fitting Insulation on Riser and Branches to Radiator
 -  - Asbestos-Containing Pipe Fitting Insulation on Domestic Water (Inaccessible in Walls)



INACCESSIBLE IN WALLS

Pipe Fitting Insulation, 3" white with canvas wrap on domestic water, HA # 17



Pipe Fitting Insulation, 3" with canvas wrap on steam, HA # 18



Floor Tile, 12"x 12" off-white with brown streaks w/ black mastic, HA # 6



Floor Tile, 12" x 12" off-white with beige streaks w/ black mastic, HA # 7

SEE HA # 6 FOR PHOTOGRAPHIC DOCUMENTATION

Floor Tile, 9" x 9" black w/ black mastic, HA # 1



Floor Tile, 12" x 12" brown with light and dark streaks w/ black mastic, HA # 4

Pipe Insulation, 12" with metal wrap, HA # 22



INACCESSIBLE IN WALLS

Pipe Fitting Insulation, 3" white with canvas wrap on domestic water, HA # 17



Pipe Fitting Insulation, 3" with canvas wrap on steam, HA # 18



Floor Tile, 12"x 12" off-white with brown streaks w/ black mastic, HA # 6



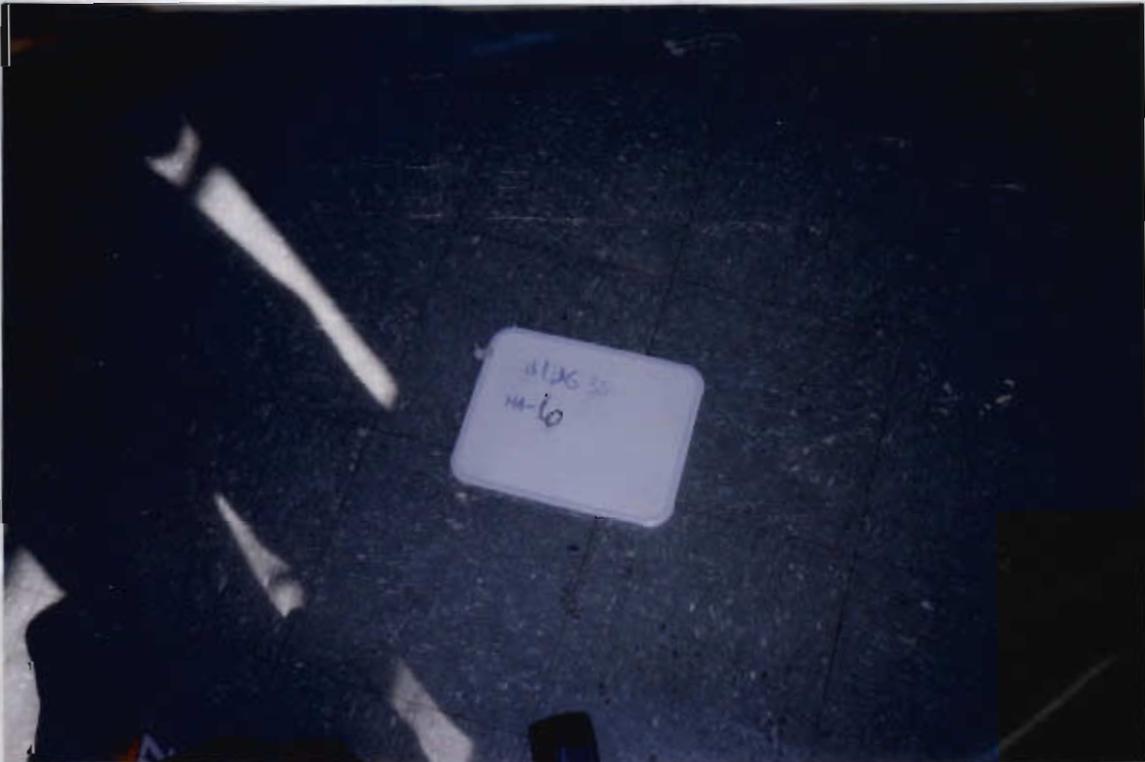
Floor Tile, 12" x 12" off-white with beige streaks w/ black mastic, HA # 7

Pipe Insulation, 12" with metal wrap, HA # 22



SEE HA # 6 FOR PHOTOGRAPHIC DOCUMENTATION

Floor Tile, 9" x 9" black w/ black mastic, HA # 1



Floor Tile, 12" x 12" brown with light and dark streaks w/ black mastic, HA # 4

APPENDIX C
PERSONNEL AND LABORATORY ACCREDITATIONS

APPENDIX D

LABORATORY ANALYSIS RESULTS



The Georgia Institute of Technology

This is to certify that

Foshie Bell

has attended an EPA-approved half-day Continuing Education Course entitled:

***Inspecting Buildings for Asbestos Containing Materials
(Annual Refresher Course for Building Inspectors)***

*as required by the Federal EPA AHERA Model Accreditation Plan for
re-accreditation as a Building Inspector for Asbestos (TSCA Title II).*

Georgia Tech Research Institute
Electro-Optics, Environment and Materials Laboratory
Atlanta, GA 30332
Phone: (404) 894-7430; FAX: (404) 894-1267

August 26, 1998

Dates of Attendance

August 26, 1999

Expiration Date

149-64-0385

Social Security Number

Myrtle I. Turner

Myrtle I. Turner, CET
Course Director

2900

Certificate Number

The Environmental Institute

Douglas J. Milton

Social Security Number - 266-55-7179

*Has completed coursework and satisfactorily passed
an examination that meets all criteria required for
EPA/AHERA/ASHARA (TSCA Title II) Approved Reaccreditation
and NESHAP Regulations Training*

*Asbestos in Buildings: Inspector & Management
Planner Refresher*

December 15, 1999

Course Date

6398

Certificate Number

December 15, 1999

Examination Date

December 14, 2000

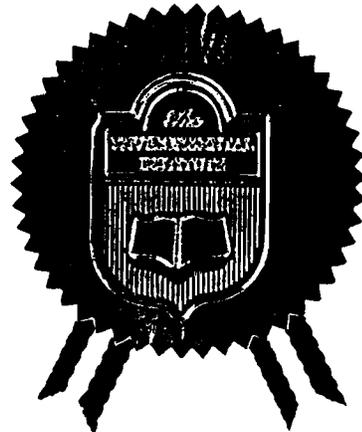
Expiration Date

Tod A. Dawson

Tod A. Dawson - Course Director

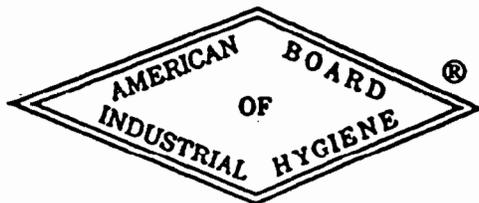
Rachel G. McCain

Rachel G. McCain - Exam Administrator



TEI - 1300 Williams Drive, Suite E - Marietta, Georgia 30066 - (770) 427-3600

The
American Board of Industrial Hygiene®
ABIH®



organized to improve the practice of Industrial Hygiene
proclaims that

Douglas J. Milton

having met all requirements through
education, experience and examination,
is hereby certified in the

**COMPREHENSIVE PRACTICE
of
INDUSTRIAL HYGIENE**

and has the right to use the designations

CERTIFIED INDUSTRIAL HYGIENIST

CIH

November 12, 1997

date

A handwritten signature in cursive script, reading "J. Kenneth Conner".

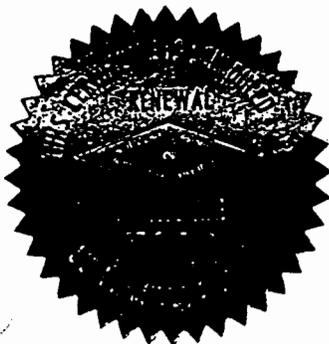
Chair ABIH

CP 7612

certificate
number

A handwritten signature in cursive script, reading "Robert T. Conner".

Secretary ABIH





South Carolina Department of Health and Environmental Control

ASBESTOS ABATEMENT LICENSE

No. 22860

This certifies that

Douglas J Milton

266-NEB-7179

doing business as *B A T Associates, Inc*

has satisfactorily completed the training required by South Carolina Regulation No. 61-86.1 and the EPA Model Accreditation Plan, 40 CFR 763 Subpart E Appendix C, for the category of

Consultant/Management Planner

The holder of this license shall comply with all the requirements of said Regulation.

This License, License Number, or any Representation thereof, is not transferable to any other licensee or company. Use of this License is only authorized for the licensee and Company whose name appears hereon and shall expire one year from

09/26/98.

The holder of this license is qualified in accordance with requirements of the Asbestos Hazard Emergency Response Act of 1986 (AHERA) to perform as an abatement Building Inspector.

07/28/99

ORIGINAL

07/28/99 14:31



Richard D. Sharpe

Richard D. Sharpe, Director
Air Compliance Management Division
Bureau of Air Quality
South Carolina Department of Health & Environmental Control
CR-001126



South Carolina Department of Health and Environmental Control

ASBESTOS ABATEMENT LICENSE

No. 22859

This certifies that

Douglas J Milton

266-BCJ-7179

doing business as *B A T Associates, Inc*

has satisfactorily completed the training required by South Carolina Regulation No. 61-86.1 and the EPA Model Accreditation Plan, 40 CFR 763 Subpart E Appendix C, for the category of

Consultant/Building Inspector

The holder of this license shall comply with all the requirements of said Regulation.

This License, License Number, or any Representation thereof, is not transferable to any other licensee or company. Use of this License is only authorized for the licensee and Company whose name appears hereon and shall expire one year from

09/23/98.

07/28/99

ORIGINAL

07/28/99 14:28



Richard D. Sharpe

Richard D. Sharpe, Director
Air Compliance Management Division
Bureau of Air Quality
South Carolina Department of Health & Environmental Control
CR-001126



United States Department of Commerce
National Institute of Standards and Technology

NVLAP[®]



ISO/IEC GUIDE 25:1990
ISO 9002:1987

Certificate of Accreditation

ANALYTICAL ENVIRONMENTAL SERVICES, INC.
ATLANTA, GA

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

BULK ASBESTOS FIBER ANALYSIS

September 30, 2000

Effective through

For the National Institute of Standards and Technology

NVLAP Lab Code: 102033-0

United States Department of Commerce
National Institute of Standards and Technology

NVLAP[®]

ISO/IEC GUIDE 25:1990
ISO 9002:1987

Certificate of Accreditation



CAPE ENVIRONMENTAL MANAGEMENT, INC.
ATLANTA, GA

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

BULK ASBESTOS FIBER ANALYSIS

June 30, 2000

Effective through

For the National Institute of Standards and Technology

NVLAP Lab Code: 102111-0

**POLARIZED LIGHT MICROSCOPY (PLM)
BULK SAMPLE ANALYSIS REPORT**

CLIENT NAME: BAT ASSOCIATES LAB JOB NO: B9334-2
PROJECT NAME: CHARLESTON NSY / 971001-13.03 DATE RECEIVED: 12/16/99
PROJECT NO: L802Z.000 REPORT ISSUED: 1/13/00
SAMPLE FIELD ID: 31-5-1 LAB ID: 928071
SAMPLE INFO: _____ DATE ANALYZED: 1/10/00

SAMPLE DESCRIPTION

LAYERED: NO
APPEARANCE: BLACK HARD SILTY TO GRANULAR (FT) WITH FIBERS AND BROWN MASTIC

RESULT OF ANALYSIS IN VOLUME PERCENTAGE (BY VISUAL ESTIMATE)

ASBESTOS FIBERS		NONASBESTOS FIBERS	NONFIBROUS COMPONENTS	OTHER COMPONENTS	
CHRYSTOLE	7	CELLULOSE	VERMICULITE/MICA	BITUMEN/TAR	
AMOSITE		GLASS FIBERS	PERLITE	SAND/AGGR.	20
CROCIDOLITE		SYNTHETICS	EXPANDED GLASS	GLUE/CAULK	5
TREMOLITE		WOLLASTONITE	SYNTHETIC FOAM	VINYL	
ACTINOLITE		TALC	ALUMINUM/METAL	CORK	
ANTHOPHYLLITE			FOAM RUBBER	LATEX/RUBBER	
				PAINT/OTHER	68

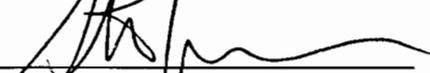
COMMENTS: 2% CHRYSTOLE IN MASTIC

SAMPLE WAS ANALYZED BY PLM USING DISPERSION STAINING TECHNIQUES IN ACCORDANCE WITH U.S. EPA METHOD 40CFR Ch. I (7-1-92) PT. 763, SUBPT. F, APP. A. LAST CALIBRATION OF EQUIPMENT WAS PERFORMED ON: 1/10/00 FOR ALL HETEROGENEOUS AND LAYERED SAMPLES EASILY SEPARATED INTO SUBLAYERS, EACH LAYER IS ANALYZED SEPARATELY. REPORT 1 OF 1

ANALYST


ALEKSEY REZNIK

QUALITY CONTROL


STEVE JARVIS



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BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc. Project Number 971001
 Project Name: Charleston Naval Shipyard AES Lab ID: 3438
 Client Sample ID: 32-2-1
 Location: Not given

Sample Description: Green hard compact partly granular with fibers, glue and paint.

All percentages given below are visually estimated by volume

ASBESTOS FIBERS	
Chrysotile:	
Amosite:	
Crocidolite:	
Anthophyllite:	
Tremolite:	
Actinolite:	

NON-ASBESTOS FIBERS	
Synthetics:	1
Mineral Wool:	
Fiberglass:	
Cellulose:	1
Animal Hair:	
Antigorite:	

NON-FIBROUS MATERIALS	
Vermiculite:	
Biotite:	
Mica:	
Perlite:	
Aggregates:	45
Styrofoam:	

OTHERS	
Aluminum:	
Bitumen:	
Resilient Material:	
Glue:	3
Binders:	50

COMMENTS: Paint included as binder.

It is certified by the signatures below that the laboratory identified is accredited by the National Institute of Standards and Technology for Polarized Light Microscopy (PLM) analysis under the EPA Interim Asbestos Bulk Sample Quality Assurance Program, Laboratory 102082-0.

Microanalyst:

Svetlana Arkhipov

QC Analyst:

Andrew Pittman

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BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc. Project Number: 971001
 Project Name: Charleston Naval Shipyard AES Lab ID: 3439
 Client Sample ID: 32-2-2
 Location: Not given

Sample Description: Green hard compact partly granular with fibers, glue and paint.

All percentages given below are visually estimated by volume

ASBESTOS FIBERS	
Chrysotile:	
Amosite:	
Crocidolite:	
Anthophyllite:	
Tremolite:	
Actinolite:	

NON-ASBESTOS FIBERS	
Synthetics:	1
Mineral Wool:	
Fiberglass:	
Cellulose:	1
Animal Hair:	
Antigorite:	

NON-FIBROUS MATERIALS	
Vermiculite:	
Biotite:	
Mica:	
Perlite:	
Aggregates:	45
Styrofoam:	

OTHERS	
Aluminum:	
Bitumen:	
Resilient Material:	
Glue:	3
Binders:	50

COMMENTS: Paint included as binder.

It is certified by the signatures below that the laboratory identified is accredited by the National Institute of Standards and Technology for Polarized Light Microscopy (PLM) analysis under the EPA Interim Asbestos Bulk Sample Quality Assurance Program, Laboratory 102082-0.

Microanalyst:

Svetlana Arkhipov

QCA analyst:

Andrew Pittman

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BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc. Project Number 971001
 Project Name: Charleston Naval Shipyard AES Lab ID: 3440
 Client Sample ID: 32-2-3
 Location: Not given

Sample Description: Green hard compact partly granular with fibers, glue and paint.

All percentages given below are visually estimated by volume

ASBESTOS FIBERS	
Chrysotile:	
Amosite:	
Crocidolite:	
Anthophyllite:	
Tremolite:	
Actinolite:	

NON-ASBESTOS FIBERS	
Synthetics:	1
Mineral Wool:	
Fiberglass:	
Cellulose:	1
Animal Hair:	
Antigorite:	

NON-FIBROUS MATERIALS	
Vermiculite:	
Biotite:	
Mica:	
Perlite:	
Aggregates:	45
Styrofoam:	

OTHERS	
Aluminum:	
Bitumen:	
Resilient Material:	
Glue:	3
Binders:	50

COMMENTS: Paint included as binder.

It is certified by the signatures below that the laboratory identified is accredited by the National Institute of Standards and Technology for Polarized Light Microscopy (PLM) analysis under the EPA Interim Asbestos Bulk Sample Quality Assurance Program, Laboratory 102082-0.

Microanalyst:

Svetlana Arkhipov

QCAlyst:

Andrew Pittman

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BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc. Project Number 971001
 Project Name: Charleston Naval Shipyard AES Lab ID: 3423
 Client Sample ID: 33-4-1
 Location: Not given

Sample Description: Blue hard compact partly granular with fibers and glue.

All percentages given below are visually estimated by volume

ASBESTOS FIBERS	
Chrysotile:	
Amosite:	
Crocidolite:	
Anthophyllite:	
Tremolite:	
Actinolite:	

NON-ASBESTOS FIBERS	
Synthetics:	1
Mineral Wool:	
Fiberglass:	
Cellulose:	1
Animal Hair:	
Antigorite:	

NON-FIBROUS MATERIALS	
Vermiculite:	
Biotite:	
Mica:	
Perlite:	
Aggregates:	45
Styrofoam:	

OTHERS	
Aluminum:	
Bitumen:	
Resilient Material:	
Glue:	3
Binders:	50

COMMENTS:

It is certified by the signatures below that the laboratory identified is accredited by the National Institute of Standards and Technology for Polarized Light Microscopy (PLM) analysis under the EPA Interim Asbestos Bulk Sample Quality Assurance Program, Laboratory 102082-0.

Microanalyst:

Svetlana Arkhipov

QCAnalyst:

Andrew Pittman

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BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc. Project Number 971001
 Project Name: Charleston Naval Shipyard AES Lab ID: 3424
 Client Sample ID: 33-4-2
 Location: Not given

Sample Description: Blue hard compact partly granular with fibers and glue.

All percentages given below are visually estimated by volume

ASBESTOS FIBERS	
Chrysotile:	
Amosite:	
Crocidolite:	
Anthophyllite:	
Tremolite:	
Actinolite:	

NON-ASBESTOS FIBERS	
Synthetics:	1
Mineral Wool:	
Fiberglass:	
Cellulose:	1
Animal Hair:	
Antigorite:	

NON-FIBROUS MATERIALS	
Vermiculite:	
Biotite:	
Mica:	
Perlite:	
Aggregates:	45
Styrofoam:	

OTHERS	
Aluminum:	
Bitumen:	
Resilient Material:	
Glue:	3
Binders:	50

COMMENTS:

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Microanalyst:

Svetlana Arkhipov

QCAlyst:

Andrew Pittman

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BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc. Project Number 971001
 Project Name: Charleston Naval Shipyard AES Lab ID: 3425
 Client Sample ID: 33-4-3
 Location: Not given

Sample Description: Blue hard compact partly granular with fibers and glue.

All percentages given below are visually estimated by volume

ASBESTOS FIBERS	
Chrysotile:	
Amosite:	
Crocidolite:	
Anthophyllite:	
Tremolite:	
Actinolite:	

NON-ASBESTOS FIBERS	
Synthetics:	1
Mineral Wool:	
Fiberglass:	
Cellulose:	1
Animal Hair:	
Antigorite:	

NON-FIBROUS MATERIALS	
Vermiculite:	
Biotite:	
Mica:	
Perlite:	
Aggregates:	45
Styrofoam:	

OTHERS	
Aluminum:	
Bitumen:	
Resilient Material:	
Glue:	3
Binders:	50

COMMENTS:

It is certified by the signatures below that the laboratory identified is accredited by the National Institute of Standards and Technology for Polarized Light Microscopy (PLM) analysis under the EPA Interim Asbestos Bulk Sample Quality Assurance Program, Laboratory 102082-0.

Microanalyst:

Svetlana Arkhipov

QCAlyst:

Andrew Pittman

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BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc. Project Number: 971001
 Project Name: Charleston Naval Shipyard AES Lab ID: 3426
 Client Sample ID: 33-5-1
 Location: Not given

Sample Description: Gray to brown hard compact partly granular with fibers, glue and bitumen.

All percentages given below are visually estimated by volume

ASBESTOS FIBERS	
Chrysotile:	3
Amosite:	
Crocidolite:	
Anthophyllite:	
Tremolite:	
Actinolite:	

NON-FIBROUS MATERIALS	
Vermiculite:	
Biotite:	
Mica:	
Perlite:	
Aggregates:	45
Styrofoam:	

NON-ASBESTOS FIBERS	
Synthetics:	1
Mineral Wool:	
Fiberglass:	
Cellulose:	1
Animal Hair:	
Antigorite:	

OTHERS	
Aluminum:	
Bitumen:	5
Resilient Material:	
Glue:	3
Binders:	37

COMMENTS: Floor tile contains 3 % chrysotile. Bitumen contains 10 % chrysotile. Glue does not contain asbestos.

It is certified by the signatures below that the laboratory identified is accredited by the National Institute of Standards and Technology for Polarized Light Microscopy (PLM) analysis under the EPA Interim Asbestos Bulk Sample Quality Assurance Program, Laboratory 102082-0.

Microanalyst:

Svetlana Arkhipov

QCAnalyst:

Svetlana Arkhipov

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BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc. Project Number 971001
 Project Name: Charleston Naval Shipyard AES Lab ID: 3384
 Client Sample ID: 35-5-1
 Location: Not given

Sample Description: Gray hard compact partly granular with fibers and glue.

All percentages given below are visually estimated by volume

ASBESTOS FIBERS	
Chrysotile:	
Amosite:	
Crocidolite:	
Anthophyllite:	
Tremolite:	
Actinolite:	

NON-ASBESTOS FIBERS	
Synthetics:	1
Mineral Wool:	
Fiberglass:	
Cellulose:	1
Animal Hair:	
Antigorite:	

NON-FIBROUS MATERIALS	
Vermiculite:	
Biotite:	
Mica:	
Perlite:	
Aggregates:	45
Styrofoam:	

OTHERS	
Aluminum:	
Bitumen:	
Resilient Material:	
Glue:	1
Binders:	52

COMMENTS:

It is certified by the signatures below that the laboratory identified is accredited by the National Institute of Standards and Technology for Polarized Light Microscopy (PLM) analysis under the EPA Interim Asbestos Bulk Sample Quality Assurance Program, Laboratory 102082-0.

Microanalyst:

Svetlana Arkhipov

QCAlyst:

Svetlana Arkhipov

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BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc. Project Number: 971001
 Project Name: Charleston Naval Shipyard AES Lab ID: 3385
 Client Sample ID: 35-5-2
 Location: Not given

Sample Description: Gray hard compact partly granular with fibers and glue.

All percentages given below are visually estimated by volume

ASBESTOS FIBERS		NON-FIBROUS MATERIALS	
Chrysotile:		Vermiculite:	
Amosite:		Biotite:	
Crocidolite:		Mica:	
Anthophyllite:		Perlite:	
Tremolite:		Aggregates:	45
Actinolite:		Styrofoam:	
NON-ASBESTOS FIBERS		OTHERS	
Synthetics:	1	Aluminum:	
Mineral Wool:		Bitumen:	
Fiberglass:		Resilient Material:	
Cellulose:	1	Glue:	1
Animal Hair:		Binders:	52
Antigorite:			

COMMENTS:

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Microanalyst:

Svetlana Arkhipov

QCAlyst:

Svetlana Arkhipov

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BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc. Project Number: 971001
 Project Name: Charleston Naval Shipyard AES Lab ID: 3386
 Client Sample ID: 35-5-3
 Location: Not given

Sample Description: Gray hard compact partly granular with fibers and glue.

All percentages given below are visually estimated by volume

ASBESTOS FIBERS	
Chrysotile:	
Amosite:	
Crocidolite:	
Anthophyllite:	
Tremolite:	
Actinolite:	

NON-FIBROUS MATERIALS	
Vermiculite:	
Biotite:	
Mica:	
Perlite:	
Aggregates:	45
Styrofoam:	

NON-ASBESTOS FIBERS	
Synthetics:	1
Mineral Wool:	
Fiberglass:	
Cellulose:	1
Animal Hair:	
Antigorite:	

OTHERS	
Aluminum:	
Bitumen:	
Resilient Material:	
Glue:	1
Binders:	52

COMMENTS:

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Microanalyst:

Svetlana Arkhipov

QCAlyst:

Svetlana Arkhipov

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BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc. Project Number: 971001
 Project Name: Charleston Naval Shipyard AES Lab ID: 3503
 Client Sample ID: 31-2-1
 Location: Not given

Sample Description: Red hard compact partly granular with fibers and glue.

All percentages given below are visually estimated by volume

ASBESTOS FIBERS	
Chrysotile:	10
Amosite:	
Crocidolite:	
Anthophyllite:	
Tremolite:	
Actinolite:	

NON-ASBESTOS FIBERS	
Synthetics:	1
Mineral Wool:	
Fiberglass:	
Cellulose:	1
Animal Hair:	
Antigorite:	

NON-FIBROUS MATERIALS	
Vermiculite:	
Biotite:	
Mica:	
Perlite:	
Aggregates:	45
Styrofoam:	

OTHERS	
Aluminum:	
Bitumen:	
Resilient Material:	
Glue:	3
Binders:	40

COMMENTS: Floor tile contains 10% chrysotile. Glue contains 1-2% chrysotile.

It is certified by the signatures below that the laboratory identified is accredited by the National Institute of Standards and Technology for Polarized Light Microscopy (PLM) analysis under the EPA Interim Asbestos Bulk Sample Quality Assurance Program, Laboratory 102082-0.

Microanalyst:

Svetlana Arkhipov

QCAnalyst

Andrew Pittman

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BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc. Project Number 971001
 Project Name: Charleston Naval Shipyard AES Lab ID: 3527
 Client Sample ID: 34-3-1
 Location: Not given

Sample Description: Tan hard compact partly granular with fibers and bitumen.

All percentages given below are visually estimated by volume

ASBESTOS FIBERS	
Chrysotile:	
Amosite:	
Crocidolite:	
Anthophyllite:	
Tremolite:	
Actinolite:	

NON-ASBESTOS FIBERS	
Synthetics:	1
Mineral Wool:	
Fiberglass:	
Cellulose:	1
Animal Hair:	
Antigorite:	

NON-FIBROUS MATERIALS	
Vermiculite:	
Biotite:	
Mica:	
Perlite:	
Aggregates:	45
Styrofoam:	

OTHERS	
Aluminum:	
Bitumen:	3
Resilient Material:	
Glue:	
Binders:	50

COMMENTS:

It is certified by the signatures below that the laboratory identified is accredited by the National Institute of Standards and Technology for Polarized Light Microscopy (PLM) analysis under the EPA Interim Asbestos Bulk Sample Quality Assurance Program, Laboratory 102082-0.

Microanalyst:

Svetlana Arkhipov

QCAnalyst:

Andrew Pittman

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BULK SAMPLE ANALYSIS

Client Name:	B A T Associates, Inc.	Project Number	971001
Project Name:	Charleston Naval Shipyard	AES Lab ID:	3528
Client Sample ID:	34-3-2		
Location:	Not given		

Sample Description: Tan hard compact partly granular with fibers and bitumen.

All percentages given below are visually estimated by volume

ASBESTOS FIBERS		NON-FIBROUS MATERIALS	
Chrysotile:	5	Vermiculite:	
Amosite:		Biotite:	
Crocidolite:		Mica:	
Anthophyllite:		Perlite:	
Tremolite:		Aggregates:	45
Actinolite:		Styrofoam:	
NON-ASBESTOS FIBERS		OTHERS	
Synthetics:	1	Aluminum:	
Mineral Wool:		Bitumen:	3
Fiberglass:		Resilient Material:	
Cellulose:	1	Glue:	
Animal Hair:		Binders:	45
Antigorite:			

COMMENTS: Floor tile contains 5% chrysotile. Bitumen contains 5% chrysotile.

It is certified by the signatures below that the laboratory identified is accredited by the National Institute of Standards and Technology for Polarized Light Microscopy (PLM) analysis under the EPA Interim Asbestos Bulk Sample Quality Assurance Program, Laboratory 102082-0.

Microanalyst:

Svetlana Arkhipov

QCAlyst:

Andrew Pittman

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BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc. Project Number: 971001
 Project Name: Charleston Naval Shipyard AES Lab ID: 3542
 Client Sample ID: 34-10-1
 Location: Not given

Sample Description: Tan hard compact partly granular with fibers and bitumen.

All percentages given below are visually estimated by volume

ASBESTOS FIBERS		NON-FIBROUS MATERIALS	
Chrysotile:		Vermiculite:	
Amosite:		Biotite:	
Crocidolite:		Mica:	
Anthophyllite:		Perlite:	
Tremolite:		Aggregates:	45
Actinolite:		Styrofoam:	
NON-ASBESTOS FIBERS		OTHERS	
Synthetics:	1	Aluminum:	
Mineral Wool:		Bitumen:	3
Fiberglass:		Resilient Material:	
Cellulose:	1	Glue:	
Animal Hair:		Binders:	50
Antigorite:			

COMMENTS:

It is certified by the signatures below that the laboratory identified is accredited by the National Institute of Standards and Technology for Polarized Light Microscopy (PLM) analysis under the EPA Interim Asbestos Bulk Sample Quality Assurance Program, Laboratory 102082-0.

Microanalyst:

Svetlana Arkhipov

QCAlyst:

Andrew Pittman

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BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc. Project Number: 971001
 Project Name: Charleston Naval Shipyard AES Lab ID: 3543
 Client Sample ID: 34-10-2
 Location: Not given

Sample Description: Tan hard compact partly granular with fibers and bitumen.

All percentages given below are visually estimated by volume

ASBESTOS FIBERS	
Chrysotile:	
Amosite:	
Crocidolite:	
Anthophyllite:	
Tremolite:	
Actinolite:	

NON-FIBROUS MATERIALS	
Vermiculite:	
Biotite:	
Mica:	
Perlite:	
Aggregates:	45
Styrofoam:	

NON-ASBESTOS FIBERS	
Synthetics:	1
Mineral Wool:	
Fiberglass:	
Cellulose:	1
Animal Hair:	
Antigorite:	

OTHERS	
Aluminum:	
Bitumen:	3
Resilient Material:	
Glue:	
Binders:	50

COMMENTS:

It is certified by the signatures below that the laboratory identified is accredited by the National Institute of Standards and Technology for Polarized Light Microscopy (PLM) analysis under the EPA Interim Asbestos Bulk Sample Quality Assurance Program, Laboratory 102082-0.

Microanalyst:

Svetlana Arkhipov

QCAnalyst:

Andrew Pittman

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BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc. Project Number: 971001
 Project Name: Charleston Naval Shipyard AES Lab ID: 3544
 Client Sample ID: 34-10-3
 Location: Not given

Sample Description: Tan hard compact partly granular with fibers and bitumen.

All percentages given below are visually estimated by volume

ASBESTOS FIBERS	
Chrysotile:	
Amosite:	
Crocidolite:	
Anthophyllite:	
Tremolite:	
Actinolite:	

NON-FIBROUS MATERIALS	
Vermiculite:	
Biotite:	
Mica:	
Perlite:	
Aggregates:	45
Styrofoam:	

NON-ASBESTOS FIBERS	
Synthetics:	1
Mineral Wool:	
Fiberglass:	
Cellulose:	1
Animal Hair:	
Antigorite:	

OTHERS	
Aluminum:	
Bitumen:	3
Resilient Material:	
Glue:	
Binders:	50

COMMENTS:

It is certified by the signatures below that the laboratory identified is accredited by the National Institute of Standards and Technology for Polarized Light Microscopy (PLM) analysis under the EPA Interim Asbestos Bulk Sample Quality Assurance Program, Laboratory 102082-0.

Microanalyst:

Svetlana Arkhipov

QCA analyst:

Andrew Pittman

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BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc. Project Number 971001
 Project Name: Charleston Naval Shipyard AES Lab ID: 3450
 Client Sample ID: 32-6-1
 Location: Not given

Sample Description: Red hard compact partly granular with fibers, bitumen and glue.

All percentages given below are visually estimated by volume

ASBESTOS FIBERS		NON-FIBROUS MATERIALS	
Chrysotile:	<1	Vermiculite:	
Amosite:		Biotite:	
Crocidolite:		Mica:	
Anthophyllite:		Perlite:	
Tremolite:		Aggregates:	40
Actinolite:		Styrofoam:	
NON-ASBESTOS FIBERS		OTHERS	
Synthetics:	3	Aluminum:	
Mineral Wool:		Bitumen:	2
Fiberglass:		Resilient Material:	
Cellulose:	2	Glue:	2
Animal Hair:		Binders:	51
Antigorite:			

COMMENTS: Bitumen contains 3% chrysotile. Floor tile and glue do not contain asbestos.

It is certified by the signatures below that the laboratory identified is accredited by the National Institute of Standards and Technology for Polarized Light Microscopy (PLM) analysis under the EPA Interim Asbestos Bulk Sample Quality Assurance Program, Laboratory 102082-0.

Microanalyst:

Svetlana Arkhipov

QCAlyst:

Andrew Pittman

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BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc. Project Number: 971001
 Project Name: Charleston Naval Shipyard AES Lab ID: 3451
 Client Sample ID: 32-6-2
 Location: Not given

Sample Description: Red hard compact partly granular with fibers, bitumen and glue.

All percentages given below are visually estimated by volume

ASBESTOS FIBERS	
Chrysotile:	<1
Amosite:	
Crocidolite:	
Anthophyllite:	
Tremolite:	
Actinolite:	

NON-FIBROUS MATERIALS	
Vermiculite:	
Biotite:	
Mica:	
Perlite:	
Aggregates:	40
Styrofoam:	

NON-ASBESTOS FIBERS	
Synthetics:	3
Mineral Wool:	
Fiberglass:	
Cellulose:	2
Animal Hair:	
Antigorite:	

OTHERS	
Aluminum:	
Bitumen:	2
Resilient Material:	
Glue:	2
Binders:	51

COMMENTS: Bitumen contains 3% chrysotile. Floor tile and glue do not contain asbestos.

It is certified by the signatures below that the laboratory identified is accredited by the National Institute of Standards and Technology for Polarized Light Microscopy (PLM) analysis under the EPA Interim Asbestos Bulk Sample Quality Assurance Program, Laboratory 102082-0.

Microanalyst:

Svetlana Arkhipov

QCAlyst:

Andrew Pittman

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BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc. Project Number 971001
 Project Name: Charleston Naval Shipyard AES Lab ID: 3452
 Client Sample ID: 32-6-3
 Location: Not given

Sample Description: Red hard compact partly granular with fibers, bitumen and glue.

All percentages given below are visually estimated by volume

ASBESTOS FIBERS	
Chrysotile:	<1
Amosite:	
Crocidolite:	
Anthophyllite:	
Tremolite:	
Actinolite:	

NON-ASBESTOS FIBERS	
Synthetics:	3
Mineral Wool:	
Fiberglass:	
Cellulose:	2
Animal Hair:	
Antigorite:	

NON-FIBROUS MATERIALS	
Vermiculite:	
Biotite:	
Mica:	
Perlite:	
Aggregates:	40
Styrofoam:	

OTHERS	
Aluminum:	
Bitumen:	2
Resilient Material:	
Glue:	2
Binders:	51

COMMENTS: Bitumen contains 3% chrysotile. Floor tile and glue do not contain asbestos.

It is certified by the signatures below that the laboratory identified is accredited by the National Institute of Standards and Technology for Polarized Light Microscopy (PLM) analysis under the EPA Interim Asbestos Bulk Sample Quality Assurance Program, Laboratory 102082-0.

Microanalyst:

Svetlana Arkhipov

QCAnalyst:

Andrew Pittman

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BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc. Project Number: 971001
 Project Name: Charleston Naval Shipyard AES Lab ID: 3387
 Client Sample ID: 35-10-1
 Location: Not given

Sample Description: Layered: 1) Light brown semi-hard resilient; 2) Light brown semi-hard silty to fibrous.

All percentages given below are visually estimated by volume

ASBESTOS FIBERS	
Chrysotile:	
Amosite:	
Crocidolite:	
Anthophyllite:	
Tremolite:	
Actinolite:	

NON-ASBESTOS FIBERS	
Synthetics:	10
Mineral Wool:	5
Fiberglass:	
Cellulose:	5
Animal Hair:	
Antigorite:	

NON-FIBROUS MATERIALS	
Vermiculite:	
Biotite:	
Mica:	
Perlite:	
Aggregates:	
Styrofoam:	

OTHERS	
Aluminum:	
Bitumen:	
Resilient Material:	50
Glue:	
Binders:	30

COMMENTS:

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Microanalyst:

Svetlana Arkhipov

QCAlyst:

Svetlana Arkhipov

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BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc. Project Number 971001
 Project Name: Charleston Naval Shipyard AES Lab ID: 3388
 Client Sample ID: 35-10-2
 Location: Not given

Sample Description: Layered: 1) Light brown semi-hard resilient; 2) Light brown semi-hard silty to fibrous.

All percentages given below are visually estimated by volume

ASBESTOS FIBERS	
Chrysotile:	
Amosite:	
Crocidolite:	
Anthophyllite:	
Tremolite:	
Actinolite:	

NON-FIBROUS MATERIALS	
Vermiculite:	
Biotite:	
Mica:	
Perlite:	
Aggregates:	
Styrofoam:	

NON-ASBESTOS FIBERS	
Synthetics:	10
Mineral Wool:	5
Fiberglass:	
Cellulose:	5
Animal Hair:	
Antigorite:	

OTHERS	
Aluminum:	
Bitumen:	
Resilient Material:	50
Glue:	
Binders:	30

COMMENTS:

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Microanalyst:

Svetlana Arkhipov

QCAlyst:

Svetlana Arkhipov

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BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc. Project Number: 971001
 Project Name: Charleston Naval Shipyard AES Lab ID: 3389
 Client Sample ID: 35-10-3
 Location: Not given

Sample Description: Layered: 1) Light brown semi-hard resilient; 2) Light brown semi-hard silty to fibrous.

All percentages given below are visually estimated by volume

ASBESTOS FIBERS	
Chrysotile:	
Amosite:	
Crocidolite:	
Anthophyllite:	
Tremolite:	
Actinolite:	

NON-ASBESTOS FIBERS	
Synthetics:	10
Mineral Wool:	5
Fiberglass:	
Cellulose:	5
Animal Hair:	
Antigorite:	

NON-FIBROUS MATERIALS	
Vermiculite:	
Biotite:	
Mica:	
Perlite:	
Aggregates:	
Styrofoam:	

OTHERS	
Aluminum:	
Bitumen:	
Resilient Material:	50
Glue:	
Binders:	30

COMMENTS:

It is certified by the signatures below that the laboratory identified is accredited by the National Institute of Standards and Technology for Polarized Light Microscopy (PLM) analysis under the EPA Interim Asbestos Bulk Sample Quality Assurance Program, Laboratory 102082-0.

Microanalyst:

Svetlana Arkhipov

QCAAnalyst:

Svetlana Arkhipov

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BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc. Project Number: 971001
 Project Name: Charleston Naval Shipyard AES Lab ID: 3512
 Client Sample ID: 31-10-1
 Location: Not given

Sample Description: Gray soft fibrous to perlitic with paint.

All percentages given below are visually estimated by volume

ASBESTOS FIBERS	
Chrysotile:	
Amosite:	
Crocidolite:	
Anthophyllite:	
Tremolite:	
Actinolite:	

NON-ASBESTOS FIBERS	
Synthetics:	
Mineral Wool:	35
Fiberglass:	
Cellulose:	25
Animal Hair:	
Antigorite:	

NON-FIBROUS MATERIALS	
Vermiculite:	
Biotite:	
Mica:	
Perlite:	30
Aggregates:	
Styrofoam:	

OTHERS	
Aluminum:	
Bitumen:	
Resilient Material:	
Glue:	
Binders:	10

COMMENTS: Paint included as binder. -

It is certified by the signatures below that the laboratory identified is accredited by the National Institute of Standards and Technology for Polarized Light Microscopy (PLM) analysis under the EPA Interim Asbestos Bulk Sample Quality Assurance Program, Laboratory 102082-0.

Microanalyst:

Svetlana Arkhipov

QCAlyst:

Andrew Pittman

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BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc. Project Number: 971001
 Project Name: Charleston Naval Shipyard AES Lab ID: 3513
 Client Sample ID: 31-10-2
 Location: Not given

Sample Description: Gray soft fibrous to perlitic with paint.

All percentages given below are visually estimated by volume

ASBESTOS FIBERS	
Chrysotile:	
Amosite:	
Crocidolite:	
Anthophyllite:	
Tremolite:	
Actinolite:	

NON-ASBESTOS FIBERS	
Synthetics:	
Mineral Wool:	35
Fiberglass:	
Cellulose:	25
Animal Hair:	
Antigorite:	

NON-FIBROUS MATERIALS	
Vermiculite:	
Biotite:	
Mica:	
Perlite:	30
Aggregates:	
Styrofoam:	

OTHERS	
Aluminum:	
Bitumen:	
Resilient Material:	
Glue:	
Binders:	10

COMMENTS: Paint included as binder. -

It is certified by the signatures below that the laboratory identified is accredited by the National Institute of Standards and Technology for Polarized Light Microscopy (PLM) analysis under the EPA Interim Asbestos Bulk Sample Quality Assurance Program, Laboratory 102082-0.

Microanalyst:

Svetlana Arkhipov

QCA analyst:

Andrew Pittman

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BULK SAMPLE ANALYSIS

Client Name:	B A T Associates, Inc.	Project Number	971001
Project Name:	Charleston Naval Shipyard	AES Lab ID:	3514
Client Sample ID:	31-10-3		
Location:	Not given		

Sample Description: Gray soft fibrous to perlitic.

All percentages given below are visually estimated by volume

ASBESTOS FIBERS	
Chrysotile:	
Amosite:	
Crocidolite:	
Anthophyllite:	
Tremolite:	
Actinolite:	

NON-ASBESTOS FIBERS	
Synthetics:	
Mineral Wool:	35
Fiberglass:	
Cellulose:	25
Animal Hair:	
Antigorite:	

NON-FIBROUS MATERIALS	
Vermiculite:	
Biotite:	
Mica:	
Perlite:	30
Aggregates:	
Styrofoam:	

OTHERS	
Aluminum:	
Bitumen:	
Resilient Material:	
Glue:	
Binders:	10

COMMENTS:

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Microanalyst:

Svetlana Arkhipov

QCAlyst:

Andrew Pittman

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BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc.
 Project Name: Charleston Naval Shipyard
 Client Sample ID: 31-11-1
 Location: Not given
 Project Number: 971001
 AES Lab ID: 3515

Sample Description: Gray soft fibrous to perlitic with paint.

All percentages given below are visually estimated by volume

ASBESTOS FIBERS		NON-FIBROUS MATERIALS	
Chrysotile:		Vermiculite:	
Amosite:		Biotite:	
Crocidolite:		Mica:	
Anthophyllite:		Perlite:	30
Tremolite:		Aggregates:	
Actinolite:		Styrofoam:	
NON-ASBESTOS FIBERS		OTHERS	
Synthetics:		Aluminum:	
Mineral Wool:	35	Bitumen:	
Fiberglass:		Resilient Material:	
Cellulose:	25	Glue:	
Animal Hair:		Binders:	10
Antigorite:			

COMMENTS: Paint included as binder. -

It is certified by the signatures below that the laboratory identified is accredited by the National Institute of Standards and Technology for Polarized Light Microscopy (PLM) analysis under the EPA Interim Asbestos Bulk Sample Quality Assurance Program, Laboratory 102082-0.

Microanalyst:

Svetlana Arkhipov

QCAlyst:

Andrew Pittman

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BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc. Project Number: 971001
 Project Name: Charleston Naval Shipyard AES Lab ID: 3516
 Client Sample ID: 31-11-2
 Location: Not given

Sample Description: Gray soft fibrous to perlitic with paint.

All percentages given below are visually estimated by volume

ASBESTOS FIBERS		NON-FIBROUS MATERIALS	
Chrysotile:		Vermiculite:	
Amosite:		Biotite:	
Crocidolite:		Mica:	
Anthophyllite:		Perlite:	30
Tremolite:		Aggregates:	
Actinolite:		Styrofoam:	
NON-ASBESTOS FIBERS		OTHERS	
Synthetics:		Aluminum:	
Mineral Wool:	35	Bitumen:	
Fiberglass:		Resilient Material:	
Cellulose:	25	Glue:	
Animal Hair:		Binders:	10
Antigorite:			

COMMENTS: Paint included as binder. -

It is certified by the signatures below that the laboratory identified is accredited by the National Institute of Standards and Technology for Polarized Light Microscopy (PLM) analysis under the EPA Interim Asbestos Bulk Sample Quality Assurance Program, Laboratory 102082-0.

Microanalyst:

Svetlana Arkhipov

QCAnalyst:

Andrew Pittman

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BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc. Project Number 971001
 Project Name: Charleston Naval Shipyard AES Lab ID: 3517
 Client Sample ID: 31-11-3
 Location: Not given

Sample Description: Gray soft fibrous to perlitic with paint.

All percentages given below are visually estimated by volume

ASBESTOS FIBERS		NON-FIBROUS MATERIALS	
Chrysotile:		Vermiculite:	
Amosite:		Biotite:	
Crocidolite:		Mica:	
Anthophyllite:		Perlite:	30
Tremolite:		Aggregates:	
Actinolite:		Styrofoam:	
NON-ASBESTOS FIBERS		OTHERS	
Synthetics:		Aluminum:	
Mineral Wool:	35	Bitumen:	
Fiberglass:		Resilient Material:	
Cellulose:	25	Glue:	
Animal Hair:		Binders:	10
Antigorite:			

COMMENTS: Paint included as binder. -

It is certified by the signatures below that the laboratory identified is accredited by the National Institute of Standards and Technology for Polarized Light Microscopy (PLM) analysis under the EPA Interim Asbestos Bulk Sample Quality Assurance Program, Laboratory 102082-0.

Microanalyst:

Svetlana Arkhipov

QCAlyst:

Andrew Pittman

All percentages given are by volume visually estimated. All analyses are performed in accordance with the EPA "Method for the Determination of Asbestos in Bulk Building Materials, EPA/600/R-93/116, July 1993." This report must not be reproduced except in full with the approval of Analytical Environmental Services, Inc. These test results apply only to the samples actually tested. The refractive index was determined by using "Rapidly and Accurately Determining Refractive Indices of Asbestos Fibers by Using Dispersion Staining Method" by Shu-Chun Su, Ph.D.

**POLARIZED LIGHT MICROSCOPY (PLM)
BULK SAMPLE ANALYSIS REPORT**

CLIENT NAME: BAT ASSOCIATES LAB JOB NO: B9334-2
 PROJECT NAME: CHARLESTON NSY / 971001-13.03 DATE RECEIVED: 12/16/99
 PROJECT NO: L802Z.000 REPORT ISSUED: 1/13/00
 SAMPLE FIELD ID: 31-6-1 LAB ID: 928074
 SAMPLE INFO: _____ DATE ANALYZED: 1/10/00

SAMPLE DESCRIPTION

LAYERED: NO
 APPEARANCE: GRAY SOFT FIBROUS TO GRANULAR TO POWDERY WITH PAINT

RESULT OF ANALYSIS IN VOLUME PERCENTAGE (BY VISUAL ESTIMATE)

ASBESTOS FIBERS		NONASBESTOS FIBERS		NONFIBROUS COMPONENTS		OTHER COMPONENTS	
CHRYSTOLE		CELLULOSE	30	VERMICULITE/MICA		BITUMEN/TAR	
AMOSITE		GLASS FIBERS	30	PERLITE	30	SAND/AGGR.	
CROCIDOLITE		SYNTHETICS		EXPANDED GLASS		GLUE/CAULK	
TREMOLITE		WOLLASTONITE		SYNTHETIC FOAM		VINYL	
ACTINOLITE		TALC		ALUMINUM/METAL		CORK	
ANTHOPHYLLITE				FOAM RUBBER		LATEX/RUBBER	
						PAINT/OTHER	10

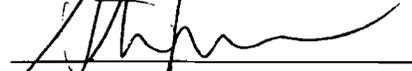
COMMENTS:

SAMPLE WAS ANALYZED BY PLM USING DISPERSION STAINING TECHNIQUES IN ACCORDANCE WITH U.S. EPA METHOD 40CFR Ch. I (7-1-92) PT. 763, SUBPT. F, APP. A. LAST CALIBRATION OF EQUIPMENT WAS PERFORMED ON: 1/10/00 FOR ALL HETEROGENEOUS AND LAYERED SAMPLES EASILY SEPARATED INTO SUBLAYERS, EACH LAYER IS ANALYZED SEPARATELY. REPORT 1 OF 1

ANALYST


ALEKSEY REZNIK

QUALITY CONTROL


STEVE JARVIS

**POLARIZED LIGHT MICROSCOPY (PLM)
BULK SAMPLE ANALYSIS REPORT**

CLIENT NAME: BAT ASSOCIATES LAB JOB NO: B9334-2
PROJECT NAME: CHARLESTON NSY / 971001-13.03 DATE RECEIVED: 12/16/99
PROJECT NO: L802Z.000 REPORT ISSUED: 1/13/00
SAMPLE FIELD ID: 31-6-2 LAB ID: 928075
SAMPLE INFO: DATE ANALYZED: 1/10/00

SAMPLE DESCRIPTION

LAYERED: NO
APPEARANCE: GRAY SOFT FIBROUS TO GRANULAR TO POWDERY WITH PAINT

RESULT OF ANALYSIS IN VOLUME PERCENTAGE (BY VISUAL ESTIMATE)

ASBESTOS FIBERS		NONASBESTOS FIBERS		NONFIBROUS COMPONENTS		OTHER COMPONENTS	
CHRYBOTILE		CELLULOSE	30	VERMICULITE/MICA		BITUMEN/TAR	
AMOSITE		GLASS FIBERS	30	PERLITE	25	SAND/AGGR.	
CROCIDOLITE		SYNTHETICS		EXPANDED GLASS		GLUE/CAULK	
TREMOLITE		WOLLASTONITE		SYNTHETIC FOAM		VINYL	
ACTINOLITE		TALC		ALUMINUM/METAL		CORK	
ANTHOPHYLLITE				FOAM RUBBER		LATEX/RUBBER	
						PAINT/OTHER	15

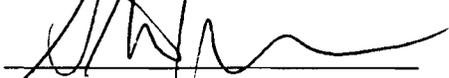
COMMENTS:

SAMPLE WAS ANALYZED BY PLM USING DISPERSION STAINING TECHNIQUES IN ACCORDANCE WITH U.S. EPA METHOD 40CFR Ch. I (7-1-92) PT. 763, SUBPT. F, APP. A. LAST CALIBRATION OF EQUIPMENT WAS PERFORMED ON: 1/10/00 FOR ALL HETEROGENEOUS AND LAYERED SAMPLES EASILY SEPARATED INTO SUBLAYERS, EACH LAYER IS ANALYZED SEPARATELY. REPORT 1 OF 1

ANALYST


ALEKSEY REZNIK

QUALITY CONTROL


STEVE JARVIS

**POLARIZED LIGHT MICROSCOPY (PLM)
BULK SAMPLE ANALYSIS REPORT**

CLIENT NAME: BAT ASSOCIATES LAB JOB NO: B9334-2
PROJECT NAME: CHARLESTON NSY / 971001-13.03 DATE RECEIVED: 12/16/99
PROJECT NO: L802Z.000 REPORT ISSUED: 1/13/00

SAMPLE FIELD ID: 31-6-3 LAB ID: 928076
SAMPLE INFO: _____ DATE ANALYZED: 1/10/00

SAMPLE DESCRIPTION

LAYERED: NO
APPEARANCE: GRAY SOFT FIBROUS TO GRANULAR TO POWDERY WITH PAINT

RESULT OF ANALYSIS IN VOLUME PERCENTAGE (BY VISUAL ESTIMATE)

ASBESTOS FIBERS		NONASBESTOS FIBERS		NONFIBROUS COMPONENTS		OTHER COMPONENTS	
CHRYSTOLITE		CELLULOSE	25	VERMICULITE/MICA		BITUMEN/TAR	
AMOSITE		GLASS FIBERS	25	PERLITE	35	SAND/AGGR.	
CROCIDOLITE		SYNTHETICS		EXPANDED GLASS		GLUE/CAULK	
TREMOLITE		WOLLASTONITE		SYNTHETIC FOAM		VINYL	
ACTINOLITE		TALC		ALUMINUM/METAL		CORK	
ANTHOPHYLLITE				FOAM RUBBER		LATEX/RUBBER	
						PAINT/OTHER	15

COMMENTS:

SAMPLE WAS ANALYZED BY PLM USING DISPERSION STAINING TECHNIQUES IN ACCORDANCE WITH U.S. EPA METHOD 40CFR Ch. I (7-1-92) PT. 763, SUBPT. F, APP. A. LAST CALIBRATION OF EQUIPMENT WAS PERFORMED ON: 1/10/00 FOR ALL HETEROGENEOUS AND LAYERED SAMPLES EASILY SEPARATED INTO SUBLAYERS, EACH LAYER IS ANALYZED SEPARATELY. REPORT 1 OF 1

ANALYST


ALEKSEY REZNIK

QUALITY CONTROL


STEVE JARVIS

**POLARIZED LIGHT MICROSCOPY (PLM)
BULK SAMPLE ANALYSIS REPORT**

CLIENT NAME: BAT ASSOCIATES LAB JOB NO: B9334-2
 PROJECT NAME: CHARLESTON NSY / 971001-13.03 DATE RECEIVED: 12/16/99
 PROJECT NO: L802Z.000 REPORT ISSUED: 1/13/00
 SAMPLE FIELD ID: 31-7-1 LAB ID: 928077
 SAMPLE INFO: _____ DATE ANALYZED: 1/10/00

SAMPLE DESCRIPTION

LAYERED: NO
 APPEARANCE: GRAY SOFT FIBROUS TO GRANULAR TO POWDERY WITH PAINT

RESULT OF ANALYSIS IN VOLUME PERCENTAGE (BY VISUAL ESTIMATE)

ASBESTOS FIBERS		NONASBESTOS FIBERS		NONFIBROUS COMPONENTS		OTHER COMPONENTS	
CHRYSTOLE		CELLULOSE	35	VERMICULITE/MICA		BITUMEN/TAR	
AMOSITE		GLASS FIBERS	25	PERLITE	30	SAND/AGGR.	
CROCIDOLITE		SYNTHETICS		EXPANDED GLASS		GLUE/CAULK	
TREMOLITE		WOLLASTONITE		SYNTHETIC FOAM		VINYL	
ACTINOLITE		TALC		ALUMINUM/METAL		CORK	
ANTHOPHYLLITE				FOAM RUBBER		LATEX/RUBBER	
						PAINT/OTHER	10

COMMENTS:

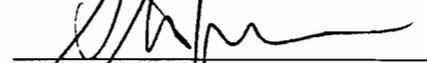
SAMPLE WAS ANALYZED BY PLM USING DISPERSION STAINING TECHNIQUES IN ACCORDANCE WITH U.S. EPA METHOD 40CFR Ch. 1 (7-1-92) PT. 763, SUBPT. F, APP. A. LAST CALIBRATION OF EQUIPMENT WAS PERFORMED ON: 1/10/00 FOR ALL HETEROGENEOUS AND LAYERED SAMPLES EASILY SEPARATED INTO SUBLAYERS, EACH LAYER IS ANALYZED SEPARATELY. REPORT 1 OF 1

ANALYST



ALEKSEY REZNIK

QUALITY CONTROL



STEVE JARVIS

**POLARIZED LIGHT MICROSCOPY (PLM)
BULK SAMPLE ANALYSIS REPORT**

CLIENT NAME: BAT ASSOCIATES LAB JOB NO: B9334-2
PROJECT NAME: CHARLESTON NSY / 971001-13.03 DATE RECEIVED: 12/16/99
PROJECT NO: L802Z.000 REPORT ISSUED: 1/13/00

SAMPLE FIELD ID: 31-7-2 LAB ID: 928078
SAMPLE INFO: _____ DATE ANALYZED: 1/10/00

SAMPLE DESCRIPTION

LAYERED: NO
APPEARANCE: GRAY SOFT FIBROUS TO GRANULAR TO POWDERY WITH PAINT

RESULT OF ANALYSIS IN VOLUME PERCENTAGE (BY VISUAL ESTIMATE)

ASBESTOS FIBERS		NONASBESTOS FIBERS		NONFIBROUS COMPONENTS		OTHER COMPONENTS	
CHRYSTOLE		CELLULOSE	35	VERMICULITE/MICA		BITUMEN/TAR	
AMOSITE		GLASS FIBERS	25	PERLITE	30	SAND/AGGR.	
CROCIDOLITE		SYNTHETICS		EXPANDED GLASS		GLUE/CAULK	
TREMOLITE		WOLLASTONITE		SYNTHETIC FOAM		VINYL	
ACTINOLITE		TALC		ALUMINUM/METAL		CORK	
ANTHOPHYLLITE				FOAM RUBBER		LATEX/RUBBER	
						PAINT/OTHER	10

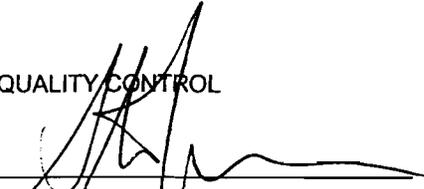
COMMENTS:

SAMPLE WAS ANALYZED BY PLM USING DISPERSION STAINING TECHNIQUES IN ACCORDANCE WITH U.S. EPA METHOD 40CFR Ch. I (7-1-92) PT. 763, SUBPT. F, APP. A. LAST CALIBRATION OF EQUIPMENT WAS PERFORMED ON: 1/10/00 FOR ALL HETEROGENEOUS AND LAYERED SAMPLES EASILY SEPARATED INTO SUBLAYERS, EACH LAYER IS ANALYZED SEPARATELY. REPORT 1 OF 1

ANALYST


ALEKSEY REZNIK

QUALITY CONTROL


STEVE JARVIS

**POLARIZED LIGHT MICROSCOPY (PLM)
BULK SAMPLE ANALYSIS REPORT**

CLIENT NAME: BAT ASSOCIATES LAB JOB NO: B9334-2
PROJECT NAME: CHARLESTON NSY / 971001-13.03 DATE RECEIVED: 12/16/99
PROJECT NO: L802Z.000 REPORT ISSUED: 1/13/00

SAMPLE FIELD ID: 31-7-3 LAB ID: 928079
SAMPLE INFO: _____ DATE ANALYZED: 1/10/00

SAMPLE DESCRIPTION

LAYERED: NO

APPEARANCE: GRAY SOFT FIBROUS TO GRANULAR TO POWDERY WITH PAINT

RESULT OF ANALYSIS IN VOLUME PERCENTAGE (BY VISUAL ESTIMATE)

ASBESTOS FIBERS		NONASBESTOS FIBERS		NONFIBROUS COMPONENTS		OTHER COMPONENTS	
CHRYSTOLE		CELLULOSE	30	VERMICULITE/MICA		BITUMEN/TAR	
AMOSITE		GLASS FIBERS	30	PERLITE	30	SAND/AGGR.	
CROCIDOLITE		SYNTHETICS		EXPANDED GLASS		GLUE/CAULK	
TREMOLITE		WOLLASTONITE		SYNTHETIC FOAM		VINYL	
ACTINOLITE		TALC		ALUMINUM/METAL		CORK	
ANTHOPHYLLITE				FOAM RUBBER		LATEX/RUBBER	
						PAINT/OTHER	10

COMMENTS:

SAMPLE WAS ANALYZED BY PLM USING DISPERSION STAINING TECHNIQUES IN ACCORDANCE WITH U.S. EPA METHOD 40CFR Ch. I (7-1-92) PT. 763, SUBPT. F, APP. A. LAST CALIBRATION OF EQUIPMENT WAS PERFORMED ON: 1/10/00 FOR ALL HETEROGENEOUS AND LAYERED SAMPLES EASILY SEPARATED INTO SUBLAYERS, EACH LAYER IS ANALYZED SEPARATELY. REPORT 1 OF 1

ANALYST


ALEKSEY REZNIK

QUALITY CONTROL


STEVE JARVIS



ANALYTICAL ENVIRONMENTAL SERVICES, INC.
 3125 Marjan Drive
 Atlanta, GA 30340
 Tel: (770) 457-8177
 Fax: (770) 457-8188

AES Job Number: B212
 Page 65 of 183 Total Samples
 Wednesday, February 09, 2000



BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc. Project Number 971001
 Project Name: Charleston Naval Shipyard AES Lab ID: 3435
 Client Sample ID: 33-11-1
 Location: Not given

Sample Description: Light gray soft powdery to vacuous with fibers and paint.

All percentages given below are visually estimated by volume

ASBESTOS FIBERS	
Chrysotile:	
Amosite:	
Crocidolite:	
Anthophyllite:	
Tremolite:	
Actinolite:	

NON-FIBROUS MATERIALS	
Vermiculite:	
Biotite:	
Mica:	
Perlite:	
Aggregates:	
Styrofoam:	50

NON-ASBESTOS FIBERS	
Synthetics:	
Mineral Wool:	
Fiberglass:	
Cellulose:	1
Animal Hair:	
Antigorite:	

OTHERS	
Aluminum:	
Bitumen:	
Resilient Material:	
Glue:	
Binders:	49

COMMENTS: Paint included as binder.

It is certified by the signatures below that the laboratory identified is accredited by the National Institute of Standards and Technology for Polarized Light Microscopy (PLM) analysis under the EPA Interim Asbestos Bulk Sample Quality Assurance Program, Laboratory 102082-0.

Microanalyst:

Svetlana Arkhipov

QCAlyst:

Andrew Pittman

All percentages given are by volume visually estimated. All analyses are performed in accordance with the EPA "Method for the Determination of Asbestos in Bulk Building Materials, EPA/600/R-93/116, July 1993." This report must not be reproduced except in full with the approval of Analytical Environmental Services, Inc. These test results apply only to the samples actually tested. The refractive index was determined by using "Rapidly and Accurately Determining Refractive Indices of Asbestos Fibers by Using Dispersion Staining Method" by Shu-Chun Su, Ph.D.



ANALYTICAL ENVIRONMENTAL SERVICES, INC.
 3125 Marjan Drive
 Atlanta, GA 30340
 Tel: (770) 457-8177
 Fax: (770) 457-8188

AES Job Number: B212
 Page 66 of 183 Total Samples
 Wednesday, February 09, 2000



BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc. Project Number: 971001
 Project Name: Charleston Naval Shipyard AES Lab ID: 3436
 Client Sample ID: 33-11-2
 Location: Not given

Sample Description: Light gray soft powdery to vacuous with fibers and paint.

All percentages given below are visually estimated by volume

ASBESTOS FIBERS		NON-FIBROUS MATERIALS	
Chrysotile:		Vermiculite:	
Amosite:		Biotite:	
Crocidolite:		Mica:	
Anthophyllite:		Perlite:	
Tremolite:		Aggregates:	
Actinolite:		Styrofoam:	50
NON-ASBESTOS FIBERS		OTHERS	
Synthetics:		Aluminum:	
Mineral Wool:		Bitumen:	
Fiberglass:		Resilient Material:	
Cellulose:	1	Glue:	
Animal Hair:		Binders:	49
Antigorite:			

COMMENTS: Paint included as binder.

It is certified by the signatures below that the laboratory identified is accredited by the National Institute of Standards and Technology for Polarized Light Microscopy (PLM) analysis under the EPA Interim Asbestos Bulk Sample Quality Assurance Program, Laboratory 102082-0.

Microanalyst:

Svetlana Arkhipov

QCAnalyst:

Andrew Pittman

All percentages given are by volume visually estimated. All analyses are performed in accordance with the EPA "Method for the Determination of Asbestos in Bulk Building Materials, EPA/600/R-93/116, July 1993." This report must not be reproduced except in full with the approval of Analytical Environmental Services, Inc. These test results apply only to the samples actually tested. The refractive index was determined by using "Rapidly and Accurately Determining Refractive Indices of Asbestos Fibers by Using Dispersion Staining Method" by Shu-Chun Su, Ph.D.



ANALYTICAL ENVIRONMENTAL SERVICES, INC.
 3125 Marjan Drive
 Atlanta, GA 30340
 Tel: (770) 457-8177
 Fax: (770) 457-8188

AES Job Number: B212
 Page 67 of 183 Total Samples
 Wednesday, February 09, 2000



BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc. Project Number 971001
 Project Name: Charleston Naval Shipyard AES Lab ID: 3437
 Client Sample ID: 33-11-3
 Location: Not given

Sample Description: Light gray soft powdery to vacuous with fibers and paint.

All percentages given below are visually estimated by volume

ASBESTOS FIBERS		NON-FIBROUS MATERIALS	
Chrysotile:		Vermiculite:	
Amosite:		Biotite:	
Crocidolite:		Mica:	
Anthophyllite:		Perlite:	
Tremolite:		Aggregates:	45
Actinolite:		Styrofoam:	
NON-ASBESTOS FIBERS		OTHERS	
Synthetics:	1	Aluminum:	
Mineral Wool:		Bitumen:	
Fiberglass:		Resilient Material:	
Cellulose:	1	Glue:	3
Animal Hair:		Binders:	50
Antigorite:			

COMMENTS: Paint included as binder.

It is certified by the signatures below that the laboratory identified is accredited by the National Institute of Standards and Technology for Polarized Light Microscopy (PLM) analysis under the EPA Interim Asbestos Bulk Sample Quality Assurance Program, Laboratory 102082-0.

Microanalyst:

Svetlana Arkhipov

QCAlyst:

Andrew Pittman

All percentages given are by volume visually estimated. All analyses are performed in accordance with the EPA "Method for the Determination of Asbestos in Bulk Building Materials, EPA/600/R-93/116, July 1993." This report must not be reproduced except in full with the approval of Analytical Environmental Services, Inc. These test results apply only to the samples actually tested. The refractive index was determined by using "Rapidly and Accurately Determining Refractive Indices of Asbestos Fibers by Using Dispersion Staining Method" by Shu-Chun Su, Ph.D.

**POLARIZED LIGHT MICROSCOPY (PLM)
BULK SAMPLE ANALYSIS REPORT**

CLIENT NAME: BAT ASSOCIATES LAB JOB NO: B9334-2
PROJECT NAME: CHARLESTON NSY / 971001-13.03 DATE RECEIVED: 12/16/99
PROJECT NO: L802Z.000 REPORT ISSUED: 1/13/00
SAMPLE FIELD ID: 33-3-1 LAB ID: 928056
SAMPLE INFO: _____ DATE ANALYZED: 1/10/00

SAMPLE DESCRIPTION

LAYERED: NO

APPEARANCE: WHITE SOFT POWDERY TO FIBROUS WITH CANVAS AND PAINT

RESULT OF ANALYSIS IN VOLUME PERCENTAGE (BY VISUAL ESTIMATE)

ASBESTOS FIBERS		NONASBESTOS FIBERS		NONFIBROUS COMPONENTS		OTHER COMPONENTS	
CHRYSTOLE	15	CELLULOSE	20	VERMICULITE/MICA		BITUMEN/TAR	
AMOSITE	15	GLASS FIBERS		PERLITE		SAND/AGGR.	
CROCIDOLITE		SYNTHETICS		EXPANDED GLASS		GLUE/CAULK	
TREMOLITE		WOLLASTONITE		SYNTHETIC FOAM		VINYL	
ACTINOLITE		TALC		ALUMINUM/METAL		CORK	
ANTHOPHYLLITE				FOAM RUBBER		LATEX/RUBBER	
						PAINT/OTHER	50

COMMENTS:

SAMPLE WAS ANALYZED BY PLM USING DISPERSION STAINING TECHNIQUES IN ACCORDANCE WITH U.S. EPA METHOD 40CFR Ch. I (7-1-92) PT. 763, SUBPT. F, APP. A. LAST CALIBRATION OF EQUIPMENT WAS PERFORMED ON: 1/10/00 FOR ALL HETEROGENEOUS AND LAYERED SAMPLES EASILY SEPARATED INTO SUBLAYERS, EACH LAYER IS ANALYZED SEPARATELY. REPORT 1 OF 1

ANALYST



ALEKSEY REZNIK

QUALITY CONTROL



STEVE JARVIS

**POLARIZED LIGHT MICROSCOPY (PLM)
BULK SAMPLE ANALYSIS REPORT**

CLIENT NAME: BAT ASSOCIATES LAB JOB NO: B9334-2
PROJECT NAME: CHARLESTON NSY / 971001-13.03 DATE RECEIVED: 12/16/99
PROJECT NO: L802Z.000 REPORT ISSUED: 1/13/00
SAMPLE FIELD ID: 33-3-2 LAB ID: 928057
SAMPLE INFO: _____ DATE ANALYZED: 1/10/00

SAMPLE DESCRIPTION

LAYERED: NO
APPEARANCE: WHITE SOFT POWDERY TO FIBROUS WITH CANVAS AND PAINT

RESULT OF ANALYSIS IN VOLUME PERCENTAGE (BY VISUAL ESTIMATE)

ASBESTOS FIBERS		NONASBESTOS FIBERS		NONFIBROUS COMPONENTS		OTHER COMPONENTS	
CHRYBOTILE	20	CELLULOSE	20	VERMICULITE/MICA		BITUMEN/TAR	
AMOSITE	15	GLASS FIBERS		PERLITE		SAND/AGGR.	
CROCIDOLITE		SYNTHETICS		EXPANDED GLASS		GLUE/CAULK	
TREMOLITE		WOLLASTONITE		SYNTHETIC FOAM		VINYL	
ACTINOLITE		TALC		ALUMINUM/METAL		CORK	
ANTHOPHYLLITE				FOAM RUBBER		LATEX/RUBBER	
						PAINT/OTHER	45

COMMENTS:

SAMPLE WAS ANALYZED BY PLM USING DISPERSION STAINING TECHNIQUES IN ACCORDANCE WITH U.S. EPA METHOD 40CFR Ch. I (7-1-92) PT. 763, SUBPT. F, APP. A. LAST CALIBRATION OF EQUIPMENT WAS PERFORMED ON: 1/10/00 FOR ALL HETEROGENEOUS AND LAYERED SAMPLES EASILY SEPARATED INTO SUBLAYERS, EACH LAYER IS ANALYZED SEPARATELY. REPORT 1 OF 1

ANALYST


ALEKSEY REZNIK

QUALITY CONTROL


STEVE JARVIS

PLM IS NOT CONSISTENTLY RELIABLE IN DETECTING SMALL CONCENTRATION OF ASBESTOS IN FLOOR TILES AND SIMILAR NONFRIABLE MATERIALS. QUANTITATIVE TEM IS CURRENTLY THE ONLY METHOD THAT CAN BE USED TO GET THE CONCLUSIVE ASBESTOS CONTENT. THIS REPORT RELATES ONLY TO THE ITEMS TESTED. THIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL, AND NOT WITHOUT WRITTEN APPROVAL OF THE LABORATORY. THIS REPORT SHALL NOT BE USED TO CLAIM ENDORSEMENT BY NVLAP OR ANY AGENCY OF U.S. GOVERNMENT.

**POLARIZED LIGHT MICROSCOPY (PLM)
BULK SAMPLE ANALYSIS REPORT**

CLIENT NAME: BAT ASSOCIATES LAB JOB NO: B9334-2
PROJECT NAME: CHARLESTON NSY / 971001-13.03 DATE RECEIVED: 12/16/99
PROJECT NO: L802Z.000 REPORT ISSUED: 1/13/00
SAMPLE FIELD ID: 33-3-3 LAB ID: 928058
SAMPLE INFO: DATE ANALYZED: 1/10/00

SAMPLE DESCRIPTION

LAYERED: NO
APPEARANCE: WHITE SOFT POWDERY TO FIBROUS WITH CANVAS AND PAINT

RESULT OF ANALYSIS IN VOLUME PERCENTAGE (BY VISUAL ESTIMATE)

ASBESTOS FIBERS		NONASBESTOS FIBERS		NONFIBROUS COMPONENTS		OTHER COMPONENTS	
CHRYSOTILE	20	CELLULOSE	15	VERMICULITE/MICA		BITUMEN/TAR	
AMOSITE	20	GLASS FIBERS		PERLITE		SAND/AGGR.	
CROCIDOLITE		SYNTHETICS		EXPANDED GLASS		GLUE/CAULK	
TREMOLITE		WOLLASTONITE		SYNTHETIC FOAM		VINYL	
ACTINOLITE		TALC		ALUMINUM/METAL		CORK	
ANTHOPHYLLITE				FOAM RUBBER		LATEX/RUBBER	
						PAINT/OTHER	45

COMMENTS:

SAMPLE WAS ANALYZED BY PLM USING DISPERSION STAINING TECHNIQUES IN ACCORDANCE WITH U.S. EPA METHOD 40CFR Ch. I (7-1-92) PT. 763, SUBPT. F, APP. A. LAST CALIBRATION OF EQUIPMENT WAS PERFORMED ON: 1/10/00 FOR ALL HETEROGENEOUS AND LAYERED SAMPLES EASILY SEPARATED INTO SUBLAYERS, EACH LAYER IS ANALYZED SEPARATELY. REPORT 1 OF 1

ANALYST


ALEKSEY REZNIK

QUALITY CONTROL


STEVE JARVIS

**POLARIZED LIGHT MICROSCOPY (PLM)
BULK SAMPLE ANALYSIS REPORT**

CLIENT NAME: BAT ASSOCIATES LAB JOB NO: B9334-1
PROJECT NAME: CHARLESTON NSY / 971001-13.03 DATE RECEIVED: 12/16/99
PROJECT NO: L802Z.000 REPORT ISSUED: 1/13/00

SAMPLE FIELD ID: 36-4-1 LAB ID: 928047
SAMPLE INFO: _____ DATE ANALYZED: 1/7/00

SAMPLE DESCRIPTION

LAYERED: NO

APPEARANCE: GRAY HARD SILTY

RESULT OF ANALYSIS IN VOLUME PERCENTAGE (BY VISUAL ESTIMATE)

ASBESTOS FIBERS		NONASBESTOS FIBERS		NONFIBROUS COMPONENTS		OTHER COMPONENTS	
CHRYSTOLITE		CELLULOSE		VERMICULITE/MICA		BITUMEN/TAR	
AMOSITE		GLASS FIBERS		PERLITE		SAND/AGGR.	5
CROCIDOLITE		SYNTHETICS		EXPANDED GLASS		GLUE/CAULK	
TREMOLITE		WOLLASTONITE		SYNTHETIC FOAM		VINYL	
ACTINOLITE		TALC		ALUMINUM/METAL		CORK	
ANTHOPHYLLITE				FOAM RUBBER		LATEX/RUBBER	
						PAINT/OTHER	95

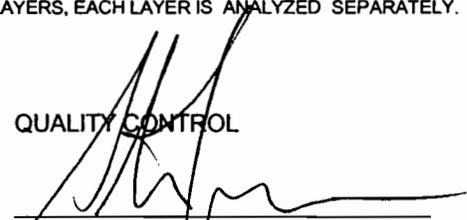
COMMENTS:

SAMPLE WAS ANALYZED BY PLM USING DISPERSION STAINING TECHNIQUES IN ACCORDANCE WITH U.S. EPA METHOD 40CFR Ch. I (7-1-92) PT. 763, SUBPT. F, APP. A. LAST CALIBRATION OF EQUIPMENT WAS PERFORMED ON: 1/7/00 FOR ALL HETEROGENEOUS AND LAYERED SAMPLES EASILY SEPARATED INTO SUBLAYERS, EACH LAYER IS ANALYZED SEPARATELY. REPORT 1 OF 1

ANALYST


ALEKSEY REZNIK

QUALITY CONTROL


STEVE JARVIS

**POLARIZED LIGHT MICROSCOPY (PLM)
BULK SAMPLE ANALYSIS REPORT**

CLIENT NAME: BAT ASSOCIATES LAB JOB NO: B9334-1
PROJECT NAME: CHARLESTON NSY / 971001-13.03 DATE RECEIVED: 12/16/99
PROJECT NO: L802Z.000 REPORT ISSUED: 1/13/00
SAMPLE FIELD ID: 36-4-2 LAB ID: 928048
SAMPLE INFO: _____ DATE ANALYZED: 1/7/00

SAMPLE DESCRIPTION

LAYERED: NO
APPEARANCE: GRAY HARD SILTY

RESULT OF ANALYSIS IN VOLUME PERCENTAGE (BY VISUAL ESTIMATE)

ASBESTOS FIBERS		NONASBESTOS FIBERS		NONFIBROUS COMPONENTS		OTHER COMPONENTS	
CHRYSTOLE		CELLULOSE		VERMICULITE/MICA		BITUMEN/TAR	
AMOSITE		GLASS FIBERS		PERLITE		SAND/AGGR.	7
CROCIDOLITE		SYNTHETICS		EXPANDED GLASS		GLUE/CAULK	
TREMOLITE		WOLLASTONITE		SYNTHETIC FOAM		VINYL	
ACTINOLITE		TALC		ALUMINUM/METAL		CORK	
ANTHOPHYLLITE				FOAM RUBBER		LATEX/RUBBER	
						PAINT/OTHER	93

COMMENTS:

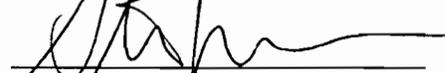
SAMPLE WAS ANALYZED BY PLM USING DISPERSION STAINING TECHNIQUES IN ACCORDANCE WITH U.S. EPA METHOD 40CFR Ch. I (7-1-92) PT. 763, SUBPT. F, APP. A. LAST CALIBRATION OF EQUIPMENT WAS PERFORMED ON: 1/7/00 FOR ALL HETEROGENEOUS AND LAYERED SAMPLES EASILY SEPARATED INTO SUBLAYERS, EACH LAYER IS ANALYZED SEPARATELY. REPORT 1 OF 1

ANALYST



ALEKSEY REZNIK

QUALITY CONTROL



STEVE JARVIS

**POLARIZED LIGHT MICROSCOPY (PLM)
BULK SAMPLE ANALYSIS REPORT**

CLIENT NAME: BAT ASSOCIATES LAB JOB NO: B9334-1
PROJECT NAME: CHARLESTON NSY / 971001-13.03 DATE RECEIVED: 12/16/99
PROJECT NO: L802Z.000 REPORT ISSUED: 1/13/00
SAMPLE FIELD ID: 36-4-3 LAB ID: 928049
SAMPLE INFO: _____ DATE ANALYZED: 1/7/00

SAMPLE DESCRIPTION

LAYERED: NO
APPEARANCE: GRAY HARD SILTY

RESULT OF ANALYSIS IN VOLUME PERCENTAGE (BY VISUAL ESTIMATE)

ASBESTOS FIBERS		NONASBESTOS FIBERS		NONFIBROUS COMPONENTS		OTHER COMPONENTS	
CHRYSTOLE		CELLULOSE		VERMICULITE/MICA		BITUMEN/TAR	
AMOSITE		GLASS FIBERS		PERLITE		SAND/AGGR.	5
CROCIDOLITE		SYNTHETICS		EXPANDED GLASS		GLUE/CAULK	
TREMOLITE		WOLLASTONITE		SYNTHETIC FOAM		VINYL	
ACTINOLITE		TALC		ALUMINUM/METAL		CORK	
ANTHOPHYLLITE				FOAM RUBBER		LATEX/RUBBER	
						PAINT/OTHER	95

COMMENTS:

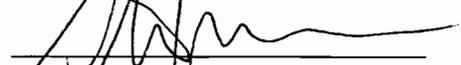
SAMPLE WAS ANALYZED BY PLM USING DISPERSION STAINING TECHNIQUES IN ACCORDANCE WITH U.S. EPA METHOD 40CFR Ch. I (7-1-92) PT. 763, SUBPT. F, APP. A. LAST CALIBRATION OF EQUIPMENT WAS PERFORMED ON: 1/7/00 FOR ALL HETEROGENEOUS AND LAYERED SAMPLES EASILY SEPARATED INTO SUBLAYERS, EACH LAYER IS ANALYZED SEPARATELY. REPORT 1 OF 1

ANALYST



ALEKSEY REZNIK

QUALITY CONTROL



STEVE JARVIS



ANALYTICAL ENVIRONMENTAL SERVICES, INC.
 3125 Marjan Drive
 Atlanta, GA 30340
 Tel: (770) 457-8177
 Fax: (770) 457-8188

AES Job Number: **B212**
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 Wednesday, February 09, 2000



BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc.
 Project Name: Charleston Naval Shipyard Project Number 971001
 Client Sample ID: 36-15-1 AES Lab ID: 3417
 Location: Not given

Sample Description: Layered: 1) Black semi-hard bitumenous; 2) Black semi-hard bitumenous to fibrous; 3) Brown soft fibrous to perlitic.

All percentages given below are visually estimated by volume

ASBESTOS FIBERS	
Chrysotile:	
Amosite:	
Crocidolite:	
Anthophyllite:	
Tremolite:	
Actinolite:	

NON-ASBESTOS FIBERS	
Synthetics:	
Mineral Wool:	5
Fiberglass:	
Cellulose:	30
Animal Hair:	
Antigorite:	

NON-FIBROUS MATERIALS	
Vermiculite:	
Biotite:	
Mica:	
Perlite:	5
Aggregates:	
Styrofoam:	

OTHERS	
Aluminum:	
Bitumen:	60
Resilient Material:	
Glue:	
Binders:	

COMMENTS:

It is certified by the signatures below that the laboratory identified is accredited by the National Institute of Standards and Technology for Polarized Light Microscopy (PLM) analysis under the EPA Interim Asbestos Bulk Sample Quality Assurance Program, Laboratory 102082-0.

Microanalyst:

Svetlana Arkhipov

QCA analyst:

Andrew Pittman

All percentages given are by volume visually estimated. All analyses are performed in accordance with the EPA "Method for the Determination of Asbestos in Bulk Building Materials, EPA/600/R-93/116, July 1993." This report must not be reproduced except in full with the approval of Analytical Environmental Services, Inc. These test results apply only to the samples actually tested. The refractive index was determined by using "Rapidly and Accurately Determining Refractive Indices of Asbestos Fibers by Using Dispersion Staining Method" by Shu-Chun Su, Ph.D.



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AES Job Number: **B212**
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 Wednesday, February 09, 2000



BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc.
 Project Name: Charleston Naval Shipyard Project Number 971001
 Client Sample ID: 36-15-2 AES Lab ID: 3418
 Location: Not given

Sample Description: Layered: 1) Black semi-hard bitumenous; 2) Black semi-hard bitumenous to fibrous; 3) Brown soft fibrous to perlitic.

All percentages given below are visually estimated by volume

ASBESTOS FIBERS	
Chrysotile:	
Amosite:	
Crocidolite:	
Anthophyllite:	
Tremolite:	
Actinolite:	

NON-ASBESTOS FIBERS	
Synthetics:	
Mineral Wool:	5
Fiberglass:	
Cellulose:	30
Animal Hair:	
Antigorite:	

NON-FIBROUS MATERIALS	
Vermiculite:	
Biotite:	
Mica:	
Perlite:	5
Aggregates:	
Styrofoam:	

OTHERS	
Aluminum:	
Bitumen:	60
Resilient Material:	
Glue:	
Binders:	

COMMENTS:

It is certified by the signatures below that the laboratory identified is accredited by the National Institute of Standards and Technology for Polarized Light Microscopy (PLM) analysis under the EPA Interim Asbestos Bulk Sample Quality Assurance Program, Laboratory 102082-0.

Microanalyst:

Svetlana Arkhipov

QCA analyst:

Andrew Pittman

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AES Job Number: B212
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 Wednesday, February 09, 2000



BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc.
 Project Name: Charleston Naval Shipyard
 Client Sample ID: 36-15-3
 Location: Not given
 Project Number: 971001
 AES Lab ID: 3419

Sample Description: Layered: 1) Black semi-hard bitumenous with aggregates; 2) Black semi-hard bitumenous to fibrous.

All percentages given below are visually estimated by volume

ASBESTOS FIBERS	
Chrysotile:	
Amosite:	
Crocidolite:	
Anthophyllite:	
Tremolite:	
Actinolite:	

NON-ASBESTOS FIBERS	
Synthetics:	
Mineral Wool:	
Fiberglass:	
Cellulose:	25
Animal Hair:	
Antigorite:	

NON-FIBROUS MATERIALS	
Vermiculite:	
Biotite:	
Mica:	
Perlite:	
Aggregates:	10
Styrofoam:	

OTHERS	
Aluminum:	
Bitumen:	65
Resilient Material:	
Glue:	
Binders:	

COMMENTS:

It is certified by the signatures below that the laboratory identified is accredited by the National Institute of Standards and Technology for Polarized Light Microscopy (PLM) analysis under the EPA Interim Asbestos Bulk Sample Quality Assurance Program, Laboratory 102082-0.

Microanalyst:

Svetlana Arkhipov

QCAlyst:

Andrew Pittman

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AES Job Number: B212
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 Wednesday, February 09, 2000



BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc. Project Number 971001
 Project Name: Charleston Naval Shipyard AES Lab ID: 3393
 Client Sample ID: Exterior Pipe - 32
 Location: Not given

Sample Description: Layered: 1) Light brown semi-hard fibrous with aluminum; 2) Gray soft powdery to fibrous.

All percentages given below are visually estimated by volume

ASBESTOS FIBERS		NON-FIBROUS MATERIALS	
Chrysotile:		Vermiculite:	
Amosite:	15	Biotite:	
Crocidolite:		Mica:	
Anthophyllite:		Perlite:	
Tremolite:		Aggregates:	
Actinolite:		Styrofoam:	
NON-ASBESTOS FIBERS		OTHERS	
Synthetics:		Aluminum:	5
Mineral Wool:		Bitumen:	
Fiberglass:		Resilient Material:	
Cellulose:	5	Glue:	
Animal Hair:		Binders:	75
Antigorite:			

COMMENTS: Layer #2 contains 15% amosite. Layer #1 does not contain asbestos.

It is certified by the signatures below that the laboratory identified is accredited by the National Institute of Standards and Technology for Polarized Light Microscopy (PLM) analysis under the EPA Interim Asbestos Bulk Sample Quality Assurance Program, Laboratory 102082-0.

Microanalyst:

Svetlana Arkhipov

QCAnalyst:

Svetlana Arkhipov

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AES Job Number: B212
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 Wednesday, February 09, 2000



BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc. Project Number 971001
 Project Name: Charleston Naval Shipyard AES Lab ID: 3408
 Client Sample ID: B35-S1
 Location: Not given

Sample Description: Layered: 1) Red semi-hard silty to woven; 2) Gray semi-hard silty to fibrous; 3) Light gray soft fibrous.

All percentages given below are visually estimated by volume

ASBESTOS FIBERS	
Chrysotile:	
Amosite:	
Crocidolite:	
Anthophyllite:	
Tremolite:	
Actinolite:	

NON-FIBROUS MATERIALS	
Vermiculite:	
Biotite:	
Mica:	
Perlite:	
Aggregates:	
Styrofoam:	

NON-ASBESTOS FIBERS	
Synthetics:	
Mineral Wool:	15
Fiberglass:	50
Cellulose:	
Animal Hair:	
Antigorite:	

OTHERS	
Aluminum:	
Bitumen:	
Resilient Material:	
Glue:	
Binders:	35

COMMENTS:

It is certified by the signatures below that the laboratory identified is accredited by the National Institute of Standards and Technology for Polarized Light Microscopy (PLM) analysis under the EPA Interim Asbestos Bulk Sample Quality Assurance Program, Laboratory 102082-0.

Microanalyst:

Svetlana Arkhipov

QCA analyst:

Andrew Pittman

All percentages given are by volume visually estimated. All analyses are performed in accordance with the EPA "Method for the Determination of Asbestos in Bulk Building Materials, EPA/600/R-93/116, July 1993." This report must not be reproduced except in full with the approval of Analytical Environmental Services, Inc. These test results apply only to the samples actually tested. The refractive index was determined by using "Rapidly and Accurately Determining Refractive Indices of Asbestos Fibers by Using Dispersion Staining Method" by Shu-Chun Su, Ph.D.



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AES Job Number: B212
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 Wednesday, February 09, 2000



BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc. Project Number 971001
 Project Name: Charleston Naval Shipyard AES Lab ID: 3409
 Client Sample ID: B35-S2
 Location: Not given

Sample Description: Layered: 1) Red semi-hard silty to woven; 2) Gray semi-hard silty to fibrous; 3) Light gray soft fibrous.

All percentages given below are visually estimated by volume

ASBESTOS FIBERS		NON-FIBROUS MATERIALS	
Chrysotile:		Vermiculite:	
Amosite:		Biotite:	
Crocidolite:		Mica:	
Anthophyllite:		Perlite:	
Tremolite:		Aggregates:	
Actinolite:		Styrofoam:	
NON-ASBESTOS FIBERS		OTHERS	
Synthetics:		Aluminum:	
Mineral Wool:	15	Bitumen:	
Fiberglass:	50	Resilient Material:	
Cellulose:		Glue:	
Animal Hair:		Binders:	35
Antigorite:			

COMMENTS:

It is certified by the signatures below that the laboratory identified is accredited by the National Institute of Standards and Technology for Polarized Light Microscopy (PLM) analysis under the EPA Interim Asbestos Bulk Sample Quality Assurance Program, Laboratory 102082-0.

Microanalyst:

Svetlana Arkhipov

QCAlyst:

Andrew Pittman

All percentages given are by volume visually estimated. All analyses are performed in accordance with the EPA "Method for the Determination of Asbestos in Bulk Building Materials, EPA/600/R-93/116, July 1993." This report must not be reproduced except in full with the approval of Analytical Environmental Services, Inc. These test results apply only to the samples actually tested. The refractive index was determined by using "Rapidly and Accurately Determining Refractive Indices of Asbestos Fibers by Using Dispersion Staining Method" by Shu-Chun Su, Ph.D.



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AES Job Number: B212
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 Wednesday, February 09, 2000



BULK SAMPLE ANALYSIS

Client Name:	B A T Associates, Inc.	Project Number	971001
Project Name:	Charleston Naval Shipyard	AES Lab ID:	3410
Client Sample ID:	B35-S3		
Location:	Not given		

Sample Description: Layered: 1) Red semi-hard silty to woven; 2) Gray soft powdery to fibrous.

All percentages given below are visually estimated by volume

ASBESTOS FIBERS		NON-FIBROUS MATERIALS	
Chrysotile:		Vermiculite:	
Amosite:		Biotite:	
Crocidolite:		Mica:	
Anthophyllite:		Perlite:	
Tremolite:		Aggregates:	
Actinolite:		Styrofoam:	
NON-ASBESTOS FIBERS		OTHERS	
Synthetics:		Aluminum:	
Mineral Wool:		Bitumen:	
Fiberglass:	5	Resilient Material:	
Cellulose:	25	Glue:	
Animal Hair:		Binders:	70
Antigorite:			

COMMENTS: Floor tile contains 3 % chrysotile. Bitumen contains 5 % chrysotile. Glue does not contain asbestos.

It is certified by the signatures below that the laboratory identified is accredited by the National Institute of Standards and Technology for Polarized Light Microscopy (PLM) analysis under the EPA Interim Asbestos Bulk Sample Quality Assurance Program, Laboratory 102082-0.

Microanalyst:

Svetlana Arkhipov

QCAlyst:

Andrew Pittman

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AES Job Number: B212
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 Wednesday, February 09, 2000



BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc.
 Project Name: Charleston Naval Shipyard
 Client Sample ID: 35-24-1
 Location: Not given
 Project Number: 971001
 AES Lab ID: 3390

Sample Description: Black semi-hard bitumenous with fibers.

All percentages given below are visually estimated by volume

ASBESTOS FIBERS	
Chrysotile:	
Amosite:	
Crocidolite:	
Anthophyllite:	
Tremolite:	
Actinolite:	

NON-FIBROUS MATERIALS	
Vermiculite:	
Biotite:	
Mica:	
Perlite:	
Aggregates:	
Styrofoam:	

NON-ASBESTOS FIBERS	
Synthetics:	3
Mineral Wool:	
Fiberglass:	
Cellulose:	2
Animal Hair:	
Antigorite:	

OTHERS	
Aluminum:	
Bitumen:	90
Resilient Material:	
Glue:	
Binders:	5

COMMENTS:

It is certified by the signatures below that the laboratory identified is accredited by the National Institute of Standards and Technology for Polarized Light Microscopy (PLM) analysis under the EPA Interim Asbestos Bulk Sample Quality Assurance Program, Laboratory 102082-0.

Microanalyst:

Svetlana Arkhipov

QCAnalyst:

Svetlana Arkhipov

All percentages given are by volume visually estimated. All analyses are performed in accordance with the EPA "Method for the Determination of Asbestos in Bulk Building Materials, EPA/600/R-93/116, July 1993." This report must not be reproduced except in full with the approval of Analytical Environmental Services, Inc. These test results apply only to the samples actually tested. The refractive index was determined by using "Rapidly and Accurately Determining Refractive Indices of Asbestos Fibers by Using Dispersion Staining Method" by Shu-Chun Su, Ph.D.



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AES Job Number: **B212**
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 Wednesday, February 09, 2000



BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc. Project Number 971001
 Project Name: Charleston Naval Shipyard AES Lab ID: 3391
 Client Sample ID: 35-24-2
 Location: Not given

Sample Description: Black semi-hard bitumenous with fibers.

All percentages given below are visually estimated by volume

ASBESTOS FIBERS	
Chrysotile:	
Amosite:	
Crocidolite:	
Anthophyllite:	
Tremolite:	
Actinolite:	

NON-ASBESTOS FIBERS	
Synthetics:	3
Mineral Wool:	
Fiberglass:	
Cellulose:	2
Animal Hair:	
Antigorite:	

NON-FIBROUS MATERIALS	
Vermiculite:	
Biotite:	
Mica:	
Perlite:	
Aggregates:	
Styrofoam:	

OTHERS	
Aluminum:	
Bitumen:	90
Resilient Material:	
Glue:	
Binders:	5

COMMENTS:

It is certified by the signatures below that the laboratory identified is accredited by the National Institute of Standards and Technology for Polarized Light Microscopy (PLM) analysis under the EPA Interim Asbestos Bulk Sample Quality Assurance Program, Laboratory 102082-0.

Microanalyst:

Svetlana Arkhipov

QCAlyst:

Svetlana Arkhipov

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AES Job Number: B212
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 Wednesday, February 09, 2000



BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc. Project Number 971001
 Project Name: Charleston Naval Shipyard AES Lab ID: 3392
 Client Sample ID: 35-24-3
 Location: Not given

Sample Description: Black semi-hard bitumenous with fibers.

All percentages given below are visually estimated by volume

ASBESTOS FIBERS	
Chrysotile:	
Amosite:	
Crocidolite:	
Anthophyllite:	
Tremolite:	
Actinolite:	

NON-FIBROUS MATERIALS	
Vermiculite:	
Biotite:	
Mica:	
Perlite:	
Aggregates:	
Styrofoam:	

NON-ASBESTOS FIBERS	
Synthetics:	3
Mineral Wool:	
Fiberglass:	
Cellulose:	2
Animal Hair:	
Antigorite:	

OTHERS	
Aluminum:	
Bitumen:	90
Resilient Material:	
Glue:	
Binders:	5

COMMENTS:

It is certified by the signatures below that the laboratory identified is accredited by the National Institute of Standards and Technology for Polarized Light Microscopy (PLM) analysis under the EPA Interim Asbestos Bulk Sample Quality Assurance Program, Laboratory 102082-0.

Microanalyst:

Svetlana Arkhipov

QCAlyst:

Svetlana Arkhipov

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BAT

BAT Associates, Inc.
ENVIRONMENTAL, HEALTH & SAFETY SERVICES

5151 Brook Hollow Pkwy., Suite 250
Norcross, GA 30071
Phone: (770) 242-39031
Fax: (770) 242-3912

CHAIN OF CUSTODY FORM

BAT PROJECT CONTACT DOUGLAS J. MILTON	
BAT JOB NAME Charleston Naval Shipyard	BAT JOB NO. 971001 TASK NO. 13.03
ANALYSIS REQUESTED <input checked="" type="checkbox"/> PLM <input type="checkbox"/> PCM <input type="checkbox"/> AAS For Lead Content <input type="checkbox"/> OTHER _____	
CHECK ONE: <input type="checkbox"/> ROUTINE <input checked="" type="checkbox"/> ROUTINE - FAX (HANDWRITTEN) AS SOON AS POSSIBLE <input type="checkbox"/> RUSH - FAX (HANDWRITTEN) AS SOON AS POSSIBLE	
SAMPLE ID	SAMPLE ID
1. 31-2-1	16. 31-12-1
2. 31-2-2	17. 31-12-2
3. 31-2-3	18. 31-12-3
4. 31-5-1	19. 31-13-1
5. 31-5-2	20. 31-13-2
6. 31-5-3	21. 31-13-3
7. 31-9-1	22. 31-16-1
8. 31-9-2	23. 31-16-2
9. 31-9-3	24. 31-16-3
10. 31-10-1	25.
11. 31-10-2	26.
12. 31-10-3	27.
13. 31-11-1	28.
14. 31-11-2	29.
15. 31-11-3	30.
SPECIAL INSTRUCTIONS: <i>Analyze each homogeneous area tile positive</i>	
Relinquished by: <i>Jodie Bell</i>	Received by: <i>Jennystar Ross</i>
Date: <i>1/31/00</i> Time: <i>1357</i>	Date: FEB 01 2000 Time:

21100 NAU 4 BILL RATE

BAT

BAT Associates, Inc.
ENVIRONMENTAL, HEALTH & SAFETY SERVICES

5151 Brook Hollow Pkwy., Suite 250
Norcross, GA 30071
Phone: (770) 242-39032
Fax: (770) 242-3912

CHAIN OF CUSTODY FORM

BAT PROJECT CONTACT		DOUGLAS J. MILTON	
BAT JOB NAME		BAT JOB NO.	TASK NO.
Charleston Naval Shipyard		971001	13.03
ANALYSIS REQUESTED <input checked="" type="checkbox"/> PLM <input type="checkbox"/> PCM <input type="checkbox"/> AAS For Lead Content <input type="checkbox"/> OTHER _____			
CHECK ONE: <input type="checkbox"/> ROUTINE			
<input checked="" type="checkbox"/> ROUTINE - FAX (HANDWRITTEN)		AS SOON AS POSSIBLE	
<input type="checkbox"/> RUSH - FAX (HANDWRITTEN)		AS SOON AS POSSIBLE	
SAMPLE ID		SAMPLE ID	
1. 32-2-1		16. 32-7-1	
2. 32-2-2		17. 32-7-2	
3. 32-2-3		18. 32-7-3	
4. 32-3-1		19. 32-8-1	
5. 32-3-2		20. 32-8-2	
6. 32-3-3		21. 32-8-3	
7. 32-4-1		22. 32-11-1	
8. 32-4-2		23. 32-11-2	
9. 32-4-3		24. 32-11-3	
10. 32-5-1		25.	
11. 32-5-2		26.	
12. 32-5-3		27.	
13. 32-6-1		28.	
14. 32-6-2		29.	
15. 32-6-3		30.	
SPECIAL INSTRUCTIONS: Analyze each homogeneous area till positive			
Relinquished by: Joshie Bell		Received by: Jennifer Ross	
Date: 1/31/00	Time: 1357	Date: FEB 01 2000	Time:

2/1/00 NAVY BILL RATE

BAT

BAT Associates, Inc.
ENVIRONMENTAL, HEALTH & SAFETY SERVICES

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Norcross, GA 30071
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Fax: (770) 242-3912

CHAIN OF CUSTODY FORM

BAT PROJECT CONTACT DOUGLAS J. MILTON	
BAT JOB NAME Charleston Naval Shipyard	BAT JOB NO. 971001 TASK NO. 13.03
ANALYSIS REQUESTED <input checked="" type="checkbox"/> PLM <input type="checkbox"/> PCM <input type="checkbox"/> AAS For Lead Content <input type="checkbox"/> OTHER _____	
CHECK ONE: <input type="checkbox"/> ROUTINE <input checked="" type="checkbox"/> ROUTINE - FAX (HANDWRITTEN) AS SOON AS POSSIBLE <input type="checkbox"/> RUSH - FAX (HANDWRITTEN) AS SOON AS POSSIBLE	
SAMPLE ID	SAMPLE ID
1. 33-4-1	16.
2. 33-4-2	17.
3. 33-4-3	18.
4. 33-5-1	19.
5. 33-5-2	20.
6. 33-5-3	21.
7. 33-8-1	22.
8.. 33-8-2	23.
9. 33-8-3	24.
10. 33-9-1	25.
11. 33-9-2	26.
12. 33-9-3	27.
13. 33-11-1	28.
14. 33-11-2	29.
15. 33-11-3	30.
SPECIAL INSTRUCTIONS: <i>Analyze each homogeneous area tile positive</i>	
Relinquished by: <i>Foshie Bell</i>	Received by: <i>Jenny Ann Ross</i>
Date: 1/33/00 Time: <i>1357</i>	Date: FEB 01 2000 Time:

2/1/00 NAU4 BII rate

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CHAIN OF CUSTODY FORM

BAT PROJECT CONTACT		DOUGLAS J. MILTON	
BAT JOB NAME	Charleston Naval Shipyard	BAT JOB NO. 971001	TASK NO. 13.03
ANALYSIS REQUESTED <input checked="" type="checkbox"/> PLM <input type="checkbox"/> PCM <input type="checkbox"/> AAS For Lead Content <input type="checkbox"/> OTHER _____			
CHECK ONE: <input type="checkbox"/> ROUTINE <input checked="" type="checkbox"/> ROUTINE - FAX (HANDWRITTEN) AS SOON AS POSSIBLE <input type="checkbox"/> RUSH - FAX (HANDWRITTEN) AS SOON AS POSSIBLE			
SAMPLE ID		SAMPLE ID	
1. 34-3-1		16. 34-10-1	
2. 34-3-2		17. 34-10-2	
3. 34-3-3		18. 34-10-3	
4. 34-4-1		19. 34-11-1	
5. 34-4-2		20. 34-11-2	
6. 34-4-3		21. 34-11-3	
7. 34-5-1		22. 34-12-1	
8. 34-5-2		23. 34-12-2	
9. 34-5-3		24. 34-12-3	
10. 34-6-1		25. 34-19-1	
11. 34-6-2		26. 34-19-2	
12. 34-6-3		27. 34-19-3	
13. 34-8-1		28.	
14. 34-8-2		29.	
15. 34-8-3		30.	
SPECIAL INSTRUCTIONS: Analyze each homogeneous ^{area} area tie positive			
Relinquished by: <i>Leslie Bell</i>		Received by: <i>Jenny Star Ross</i>	
Date: 1/31/00	Time: 1:57	Date: FEB 01 2000	Time:

21100 NAVY BILL RATE

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ENVIRONMENTAL, HEALTH & SAFETY SERVICES

5151 Brook Hollow Pkwy., Suite 250
Norcross, GA 30071
Phone: (770) 242-39033
Fax: (770) 242-3912

CHAIN OF CUSTODY FORM

BAT PROJECT CONTACT DOUGLAS J. MILTON	
BAT JOB NAME Charleston Naval Shipyard	BAT JOB NO. 971001 TASK NO. 13.03
ANALYSIS REQUESTED <input checked="" type="checkbox"/> PLM <input type="checkbox"/> PCM <input type="checkbox"/> AAS For Lead Content <input type="checkbox"/> OTHER _____	
CHECK ONE: <input type="checkbox"/> ROUTINE <input checked="" type="checkbox"/> ROUTINE - FAX (HANDWRITTEN) AS SOON AS POSSIBLE <input type="checkbox"/> RUSH - FAX (HANDWRITTEN) AS SOON AS POSSIBLE	
SAMPLE ID	SAMPLE ID
1. 35-5-1	16.
2. 35-5-2	17.
3. 35-5-3	18.
4. 35-10-1	19.
5. 35-10-2	20.
6. 35-10-3	21.
7. 35-24-1	22.
8. 35-24-2	23.
9. 35-24-3	24.
10.	25.
11.	26.
12.	27.
13.	233.
14.	29.
15.	30.
SPECIAL INSTRUCTIONS: <i>Analyze each homogeneous area tile positive</i>	
Relinquished by: <i>Joshie Bell</i>	Received by: <i>Jenny Star Ross</i>
Date: <i>1/33/00</i> Time: <i>1357</i>	Date: FEB 01 2000 Time:

41100 NAVY BILL RATE

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ENVIRONMENTAL, HEALTH & SAFETY SERVICES

5151 Brook Hollow Pkwy., Suite 250
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Fax: (770) 242-3912

CHAIN OF CUSTODY FORM

BAT PROJECT CONTACT		DOUGLAS J. MILTON	
BAT JOB NAME		Charleston Naval Shipyard	BAT JOB NO. 971001
		TASK NO. 13.03	
ANALYSIS REQUESTED <input checked="" type="checkbox"/> PLM <input type="checkbox"/> PCM <input type="checkbox"/> AAS For Lead Content <input type="checkbox"/> OTHER _____			
CHECK ONE: <input type="checkbox"/> ROUTINE			
<input checked="" type="checkbox"/> ROUTINE - FAX (HANDWRITTEN) AS SOON AS POSSIBLE			
<input type="checkbox"/> RUSH - FAX (HANDWRITTEN) AS SOON AS POSSIBLE			
SAMPLE ID		SAMPLE ID	
1. 36-4-1		16.	
2. 36-4-2		17.	
3. 36-4-3		18.	
4. 36-5-1		19.	
5. 36-5-2		20.	
6. 36-5-3		21.	
7. 36-15-1		22.	
8. 36-15-2		23.	
9. 36-15-3		24.	
10. 36-16-1		25.	
11. 36-16-2		26.	
12. 36-16-3		27.	
13.		28.	
14.		29.	
15.		30.	
SPECIAL INSTRUCTIONS: <i>Analyze each homogeneous area tile positive</i>			
Relinquished by: <i>Joshie Bell</i>		Received by: <i>Jennystee Ross</i>	
Date: <i>1/33/00</i> Time: <i>1357</i>		Date: FEB 01 2000 Time:	

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NAVY BILL rate

DVA

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ENVIRONMENTAL, HEALTH & SAFETY SERVICES

5151 Brook Hollow Pkwy., Suite 250
Norcross, GA 30071
Phone: (770) 242-39033
Fax: (770) 242-3912

CHAIN OF CUSTODY FORM

BAT PROJECT CONTACT		DOUGLAS J. MILTON	
BAT JOB NAME	Charleston Naval Shipyard	BAT JOB NO. 971001	TASK NO. 13.03
ANALYSIS REQUESTED		<input checked="" type="checkbox"/> PLM <input type="checkbox"/> PCM <input type="checkbox"/> AAS For Lead Content <input type="checkbox"/> OTHER _____	
CHECK ONE:	<input type="checkbox"/> ROUTINE <input checked="" type="checkbox"/> ROUTINE - FAX (HANDWRITTEN) <input type="checkbox"/> RUSH - FAX (HANDWRITTEN)	AS SOON AS POSSIBLE	AS SOON AS POSSIBLE
SAMPLE ID		SAMPLE ID	
1. Exterior Pipe-32		16. B35-S1	
2. Exterior Pipe-34		17. B35-S2	
3. Exterior Pipe-36		18. B35-S3	
4. B31-S1		19.	
5. B31-S2		20.	
6. B31-S3		21.	
7. B32-S1		22.	
8. B32-S2		23.	
9. B32-S3		24.	
10. B33-S1		25.	
11. B33-S2		26.	
12. B33-S3		27.	
13. B34-S1		233.	
14. B34-S2		29.	
15. B34-S3		30.	
SPECIAL INSTRUCTIONS: <i>Analyze each homogeneous area tile positive</i>			
Relinquished by: <i>Ashie Bell</i>		Received by: <i>Jennylyn Ross</i>	
Date: <i>1/33/00</i>	Time: <i>1357</i>	Date: <i>FEB 01 2000</i>	Time:

7/1/00 NAVY Bill rate