

N61165.AR.003720
CNC CHARLESTON
5090.3a

ASBESTOS-CONTAINING MATERIAL RE-INSPECTION FOR BUILDING 1601B VOLUME 17
CNC CHARLESTON SC
1/15/2000
BAT ASSOCIATES, INC.

Volume 17

**Asbestos-Containing Material Re-inspection
For Building 1601B
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.
5301 Brook Hollow Parkway
Suite 250
Norcross, Georgia 30071
(770) 242-3908

January 15, 2000

Volume 17

**Asbestos-Containing Material Re-inspection
For Building 1601B
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.
5301 Brook Hollow Parkway
Suite 250
Norcross, Georgia 30071
(770) 242-3908

January 15, 2000

TABLE OF CONTENTS

		<u>Page</u>
1.0	Executive Summary	1
2.0	Building Inspection Information Form	2
3.0	Introduction	3
4.0	Sampling Methodology	4
5.0	Asbestos Inventory and Assessment	7
6.0	Summary of Sample Analysis Results	7
7.0	Results of Quality Control Sampling	8
8.0	Physical Assessment of Identified ACM	9
9.0	Hazard Assessment of Identified ACM	14
10.0	Preliminary Cost Estimate for Removal of Identified ACM	17
11.0	Conclusions	18

Appendices

Appendix A	Sample and ACM Location Drawings
Appendix B	Photographic Documentation of Identified ACM
Appendix C	Personnel and Laboratory Accreditations
Appendix D	Laboratory Analysis Results

List of Tables and Figures

Table 1.0	Summary of Identified ACM	1
Table 2.0	Recommended Response Actions	1
Table 3.0	Summary of Identified Suspect ACM	7
Table 4.0	Summary of Sample Analysis Results	7
Table 5.0	Validation of Quality Control Sampling	8
Figure 1.0	Decision Tree Diagram For Hazard Assessment	15

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 1601B located at the Charleston Naval Shipyard (CNS) in Charleston, South Carolina.

A list of ACM identified in Building 1601B 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
2	Floor Tile, 9" x 9" brownish red with white streaks w/ black mastic	Tile = 1-2% chrysotile, Mastic = 5% chrysotile	500 SF	Category I, non-friable

NOTES: HA = Homogeneous Area SF = Square Feet

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 1601B in Table 2.0.

**Table 2.0
 Recommended Response Actions**

HA No.	Material Description	Recommended Response Action
2	Floor Tile, 9" x 9" brownish red with white streaks w/ black mastic	Repair and O&M Plan

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 1601B is approximately \$3,300. 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: Warehouse
Building Number: 1601B
Facility: Charleston Naval Shipyard
Building Area (square footage): 25,000
Year Built: 1988
Building Type: Storage
No. of Floors in Building: One
Purpose of ACM Survey: Re-Inspection
Facility Unit Identification Code (UIC): N/A

Building Contact: Mr. William A. Drawdy
Contact's Telephone No.: (843) 743-9985
Building Survey Date(s): November 3, 1999

Asbestos Inspector's Name: Mr. Jason McGlashan
Asbestos Inspector's Accreditation No: GA2594
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 23 separate volume reports. This report describes the results for Building 1601B.

This re-inspection survey was performed by Mr. Jason McGlashan, under the direct supervision of Mr. Douglas J. Milton, CIH, on November 3, 1999. Mr. McGlashan is an accredited asbestos building inspectors. 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 previous and recently 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 763.86, 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 763.87 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 1601B.

Table 3.0
Summary of Identified Suspect ACM

HA No.	Description of Suspect ACM	Location of Suspect ACM	AHERA Category of Material
1	Window Glazing	On the exterior of 36-3' x 8' windows	N/A
2	Floor Tile, 9" x 9" brownish red with white streaks w/ black mastic	In office area and in three restrooms	Misc.
3	Ceiling Tile, 2' x 4' white with deep fissures	In office area	N/A
4	Joint sealer Compound, on drywall	On drywall on walls and ceilings	N/A
5	Textured Ceiling Finish	In restroom next to office	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.

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 763.85). 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 as asbestos-containing.

Table 4.0
Summary of Sample Analysis Results

HA No.	Sample ID No.	Suspect Material Description	Asbestos Content	Friability
1	1601-1-1, 1601-1-2, 1601-1-3	Window Glazing	NAD	N/A
2	1601-2-1, 1601-2-2, 1601-2-3	Floor Tile, 9" x 9" brownish red with white streaks w/ black mastic	Tile = 1-2% chrysotile, Mastic = 5% chrysotile	Non

HA No.	Sample ID No.	Suspect Material Description	Asbestos Content	Friability
3	1601-3-1, 1601-3-2, 1601-3-3	Ceiling Tile, 2' x 4' white with deep fissures	NAD	N/A
4	1601-4-1, 1601-4-2, 1601-4-3	Joint sealer Compound, on drywall	NAD	N/A
5	1601-5-1, 1601-5-2, 1601-5-3	Textured Ceiling Finish	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.

Table 5.0
Validation of Quality Control Sampling

Sample I.D. No.	Primary Laboratory Analysis Results	QC Laboratory Analysis Results
1601-1-QC1	NAD	NAD
1601-5-QC3	NAD	NAD

Notes: QC = Quality Control NAD = No Asbestos Detected

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 763.85.

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 1601B

SAMPLE NUMBER(S): 1601-1-1, 1601-1-2, and 1601-1-3

HOMOGENEOUS AREA No.: 2

TYPE OF MATERIAL: Surfacing TSI X Other

Description: Floor Tile, 9" x 9" brownish red with white streaks w/ black mastic

Approximate Amount of Asbestos-Containing Material (Linear or Square Foot): 500 SF

CONDITION:

Percent Damage: 10 % Damage Localized X Distributed

Type of Damage: X Deterioration Water Physical

DESCRIPTION:

Overall Rating: Good X 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 included in the facility Operations and Maintenance (O&M) Plan until removal is accomplished.

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.

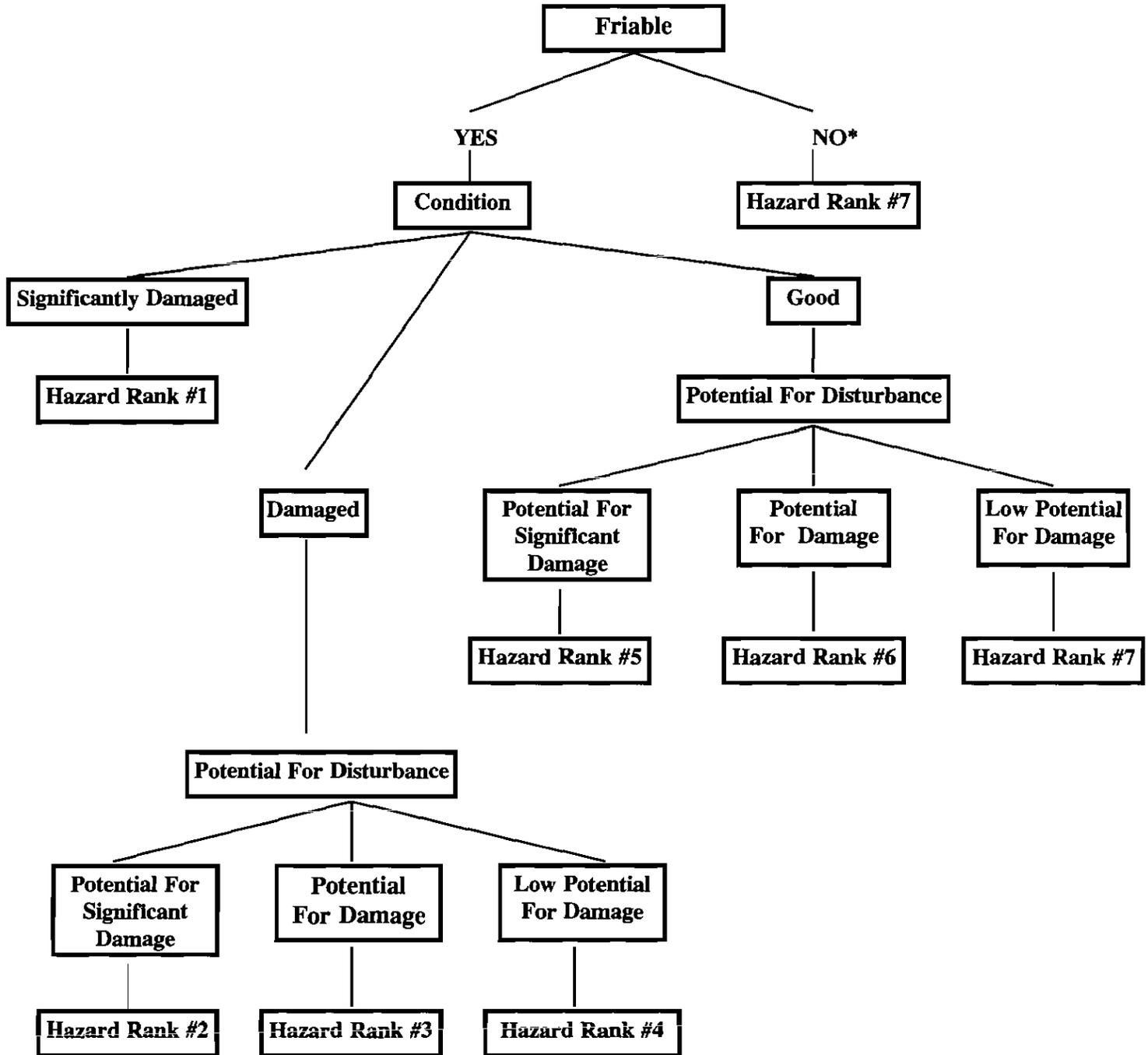
BAT adopted for this re-inspection one of the four general classes of hazard assessment models considered during the AHERA rule-making process. This method for hazard assessment is a modified decision tree as detailed in the USEPA, *Guidance for Assessing and Managing Exposure to Asbestos in Buildings*, 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 1601B

SAMPLE NUMBER(S): 1601-1-1, 1601-1-2, and 1601-1-3

HOMOGENEOUS AREA No.: 2

TYPE OF MATERIAL: Surfacing TSI Other

Description: Floor Tile, 9" x 9" brownish red with white streaks w/ black mastic

Approximate Amount of Asbestos-Containing Material (Linear or Square Foot): 500 SF

Approximate Recommended Response Action Cost: \$330

HAZARD ASSESSMENT

RESPONSE ACTION RECOMMENDATION

- | | |
|---|--|
| (1) Significantly damaged | (1) Removal |
| <input checked="" type="checkbox"/> (2) Damaged plus potential for significant damage | (2) Encapsulation |
| (3) Damaged plus potential for damage | (3) Enclosure |
| (4) Damaged plus low potential for damage | <input checked="" type="checkbox"/> (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: None.

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 1601B. 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 with Mastic	1.78	500 SF	890
Handling Cost	25.00	3 EA	75
Mobilization	300.00	1 EA	300
Waste Disposal Cost	50.00	2 CY	<u>100</u>
Removal Subtotal			1,365
IH Supervision and Monitoring			<u>1,000</u>
Project Subtotal			2,365
Contingency (40%)			<u>946</u>
Project Total			3,311

SF = Square Feet EA = Each CY = Cubic Yard

11.0 CONCLUSIONS

Inspection of Building 1601B 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" brownish red with white streaks w/ black mastic	500 SF	Category I, non-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>
None.		

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.

APPENDIX A

SAMPLE AND ACM LOCATION DRAWINGS

1601-1-3 (-)

1601-1-2 (-)

1601-1-1 (-)

1601-1-QC1 (-)

1601-4-1 (-)

1601-2-3 (+)

1601-3-1 (-)

1601-2-1 (+)

1601-3-2 (-)

1601-3-3 (-)

1601-2-2 (+)

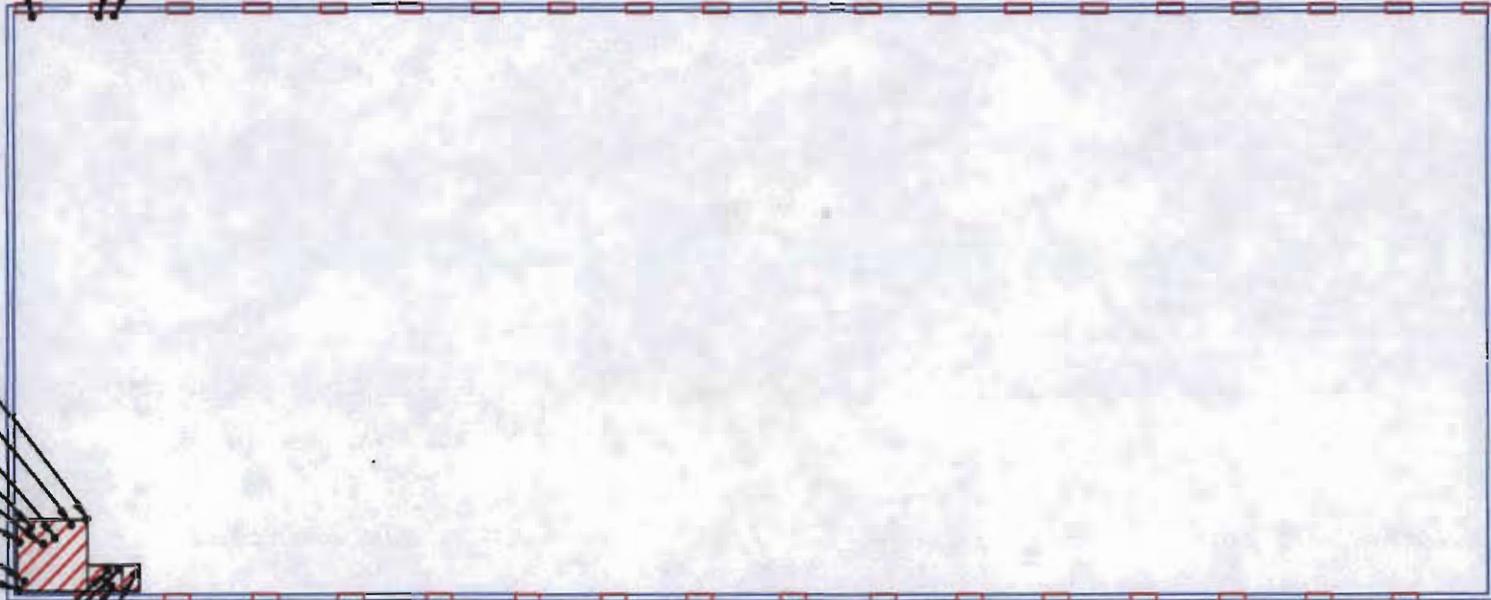
1601-4-3 (-)

1601-5-2 (+)

1601-5-3 (-)

1601-5-1 (-)

1601-4-2 (-)



BUILDING 1601 B

Sample and Asbestos-Containing Material Locations

LEGEND

- - Sample Location
- (-) - Non-Asbestos-Containing Sample Location
- (+) - Asbestos-Containing Sample Location
- Asbestos-Containing 9' x 9' Floor Tile and Mastic



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

APPENDIX B
PHOTOGRAPHIC DOCUMENTATION
OF IDENTIFIED ACM



Floor Tile, 9" x 9" brownish red with white streaks w/ black mastic, HA # 2

APPENDIX C

PERSONNEL AND LABORATORY ACCREDITATIONS

The Environmental Institute

Jason McGlashan

Social Security Number - 137-62-0377

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

Asbestos in Buildings: Inspection and Assessment

June 21-23, 1999

Course Date

2594

Certificate Number

June 23, 1999

Examination Date

June 22, 2000

Expiration Date

R. A. Short

Ronald A. Short - Course Director

Rachel G. McCain

Rachel G. McCain - Exam Administrator



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

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 Reccreditation

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

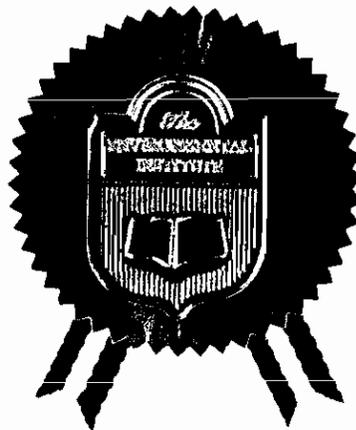
Expiration Date

Tod A. Dawson

Tod A. Dawson - Course Director

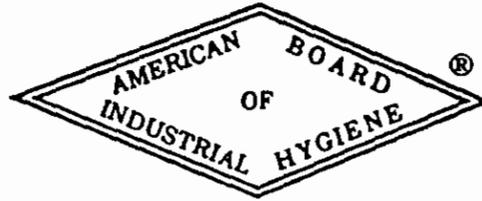
Rachel G. McCain

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 Conroy".

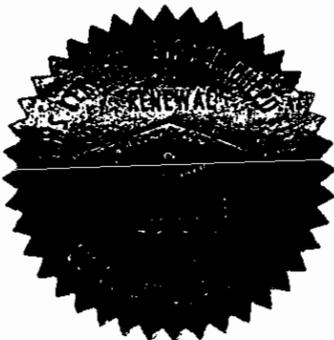
Chair ABIH

CP 7612

certificate
number

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

Secretary ABIH



United States Department of Commerce
National Institute of Standards and Technology

NVLAP[®]
Certificate of Accreditation

ISO/IEC GUIDE 25:1990
ISO 9002:1987



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

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

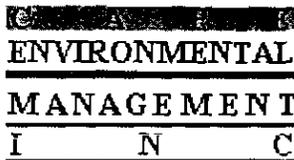
Effective through

For the National Institute of Standards and Technology

NVLAP Lab Code: 102033-0

APPENDIX D

LABORATORY ANALYSIS RESULTS



2302 PARKLAKE DRIVE, SUITE 200, ATLANTA, GA 30345
 TEL: (770) 908-7200 FAX: (770) 908-7219



ACCREDITED
 LAB CODE - 102111

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

CLIENT NAME: BAT ASSOCIATES LAB JOB NO: B9323
 PROJECT NAME: CHARLESTON NSY / 971001-13.03 DATE RECEIVED: 12/6/99
 PROJECT NO: L802Z.000 REPORT ISSUED: 12/14/99
 SAMPLE FIELD ID: 1601-1-1 LAB ID: 927114
 SAMPLE INFO: DATE ANALYZED: 12/13/99

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. 15
CROCIDOLITE	SYNTHETICS	EXPANDED GLASS	GLUE/CAULK
TREMOLITE	WOLLASTONITE	SYNTHETIC FOAM	VINYL
ACTINOLITE	TALC	ALUMINUM/METAL	CORK
ANTHOPHYLLITE		FOAM RUBBER	LATEX/RUBBER
			PAINT/OTHER 85

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: 12/13/99 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: B9323
PROJECT NAME: CHARLESTON NSY / 971001-13.03 DATE RECEIVED: 12/6/99
PROJECT NO: L802Z.000 REPORT ISSUED: 12/14/99
SAMPLE FIELD ID: 1601-1-2 LAB ID: 927115
SAMPLE INFO: DATE ANALYZED: 12/13/99

SAMPLE DESCRIPTION

LAYERED: NO
APPEARANCE: GRAY HARD SILTY

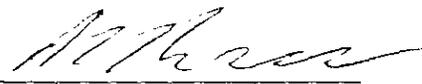
RESULT OF ANALYSIS IN VOLUME PERCENTAGE (BY VISUAL ESTIMATE)

ASBESTOS FIBERS	NONASBESTOS FIBERS	NONFIBROUS COMPONENTS	OTHER COMPONENTS
CHRYCOTILE	CELLULOSE	VERMICULITE/MICA	BITUMEN/TAR
AMOSITE	GLASS FIBERS	PERLITE	SAND/AGGR. 10
CROCIDOLITE	SYNTHETICS	EXPANDED GLASS	GLUE/CAULK
TREMOLITE	WOLLASTONITE	SYNTHETIC FOAM	VINYL
ACTINOLITE	TALC	ALUMINUM/METAL	CORK
ANTHOPHYLLITE		FOAM RUBBER	LATEX/RUBBER
			PAINT/OTHER 90

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: 12/13/99 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: B9323
PROJECT NAME: CHARLESTON NSY / 971001-13.03 DATE RECEIVED: 12/6/99
PROJECT NO: L802Z.000 REPORT ISSUED: 12/14/99
SAMPLE FIELD ID: 1601-1-3 LAB ID: 927116
SAMPLE INFO: DATE ANALYZED: 12/13/99

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
CHRYSTILE	CELLULOSE	VERMICULITE/MICA	BITUMEN/TAR
AMOSITE	GLASS FIBERS	PERLITE	SAND/AGGR. 10
CROCIDOLITE	SYNTHETICS	EXPANDED GLASS	GLUE/CAULK
TREMOLITE	WOLLASTONITE	SYNTHETIC FOAM	VINYL
ACTINOLITE	TALC	ALUMINUM/METAL	CORK
ANTHOPHYLLITE		FOAM RUBBER	LATEX/RUBBER
			PAINT/OTHER 90

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: 12/13/99 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: B9323
PROJECT NAME: CHARLESTON NSY / 971001-13.03 DATE RECEIVED: 12/6/99
PROJECT NO: L802Z.000 REPORT ISSUED: 12/14/99
SAMPLE FIELD ID: 1601-2-1 LAB ID: 927117-1
SAMPLE INFO: DATE ANALYZED: 12/13/99

SAMPLE DESCRIPTION

LAYERED: YES LAYER NO: 1 NO. OF LAYERS: 2
APPEARANCE: RED HARD RESILIENT TO GRANULAR

RESULT OF ANALYSIS IN VOLUME PERCENTAGE (BY VISUAL ESTIMATE)

ASBESTOS FIBERS		NONASBESTOS FIBERS	NONFIBROUS COMPONENTS	OTHER COMPONENTS
CHRYBOTILE	2	CELLULOSE	VERMICULITE/MICA	BITUMEN/TAR
AMOSITE		GLASS FIBERS	PERLITE	SAND/AGGR. 30
CROCIDOLITE		SYNTHETICS	EXPANDED GLASS	GLUE/CAULK
TREMOLITE		WOLLASTONITE	SYNTHETIC FOAM	VINYL
ACTINOLITE		TALC	ALUMINUM/METAL	CORK
ANTHOPHYLLITE			FOAM RUBBER	LATEX/RUBBER
				PAINT/OTHER 68

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: 12/13/99 FOR ALL HETEROGENEOUS AND LAYERED SAMPLES EASILY SEPARATED INTO SUBLAYERS, EACH LAYER IS ANALYZED SEPARATELY NO OF LAYERS - INDICATES NUMBER OF SUBSAMPLES ANALYZED AND REPORTS ISSUED (UNLESS COMPOSITED).

ANALYST


ALEKSEY REZNIK

QUALITY CONTROL


STEVE JARVIS

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

CLIENT NAME:	BAT ASSOCIATES	LAB JOB NO:	B9323
PROJECT NAME:	CHARLESTON NSY / 971001-13.03	DATE RECEIVED:	12/6/99
PROJECT NO:	L802Z.000	REPORT ISSUED:	12/14/99
SAMPLE FIELD ID:	1601-2-1	LAB ID:	927117-2
SAMPLE INFO:		DATE ANALYZED:	12/13/99

SAMPLE DESCRIPTION

LAYERED:	YES	LAYER NO:	2	NO. OF LAYERS:	2
APPEARANCE:	BLACK SOFT BITUMINOUS WITH FIBERS				

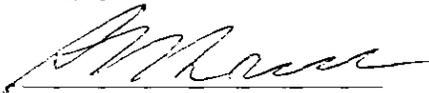
RESULT OF ANALYSIS IN VOLUME PERCENTAGE (BY VISUAL ESTIMATE)

ASBESTOS FIBERS	NONASBESTOS FIBERS	NONFIBROUS COMPONENTS	OTHER COMPONENTS
CHRYSTOLE	CELLULOSE 3	VERMICULITE/MICA	BITUMEN/TAR 90
AMOSITE	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 7

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: 12/13/99 FOR ALL HETEROGENEOUS AND LAYERED SAMPLES EASILY SEPARATED INTO SUBLAYERS, EACH LAYER IS ANALYZED SEPARATELY. NO OF LAYERS - INDICATES NUMBER OF SUBSAMPLES ANALYZED AND REPQRTS ISSUED (UNLESS COMPOSITED).

ANALYST


ALEKSEY REZNIK

QUALITY CONTROL


STEVE JARVIS

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

CLIENT NAME: BAT ASSOCIATES LAB JOB NO: B9323
PROJECT NAME: CHARLESTON NSY / 971001-13.03 DATE RECEIVED: 12/6/99
PROJECT NO: L802Z.000 REPORT ISSUED: 12/14/99
SAMPLE FIELD ID: 1601-2-2 LAB ID: 927118-1
SAMPLE INFO: DATE ANALYZED: 12/13/99

SAMPLE DESCRIPTION

LAYERED: YES LAYER NO: 1 NO. OF LAYERS: 2
APPEARANCE: RED HARD RESILIENT TO GRANULAR

RESULT OF ANALYSIS IN VOLUME PERCENTAGE (BY VISUAL ESTIMATE)

ASBESTOS FIBERS		NONASBESTOS FIBERS		NONFIBROUS COMPONENTS	OTHER COMPONENTS
CHRYSTOLE	1	CELLULOSE	2	VERMICULITE/MICA	BITUMEN/TAR
AMOSITE		GLASS FIBERS		PERLITE	SAND/AGGR. 30
CROCIDOLITE		SYNTHETICS		EXPANDED GLASS	GLUE/CAULK
TREMOLITE		WOLLASTONITE		SYNTHETIC FOAM	VINYL
ACTINOLITE		TALC		ALUMINUM/METAL	CORK
ANTHOPHYLLITE				FOAM RUBBER	LATEX/RUBBER
					PAINT/OTHER 67

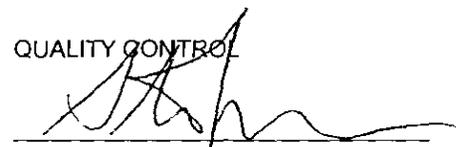
COMMENTS:

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: 12/13/99 FOR ALL HETEROGENEOUS AND LAYERED SAMPLES EASILY SEPARATED INTO SUBLAYERS, EACH LAYER IS ANALYZED SEPARATELY. NO OF LAYERS - INDICATES NUMBER OF SUBSAMPLES ANALYZED AND REPORTS ISSUED (UNLESS COMPOSITED).

ANALYST


ALEKSEY REZNIK

QUALITY CONTROL


STEVE JARVIS

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

CLIENT NAME: BAT ASSOCIATES LAB JOB NO: B9323
PROJECT NAME: CHARLESTON NSY / 971001-13.03 DATE RECEIVED: 12/6/99
PROJECT NO: L802Z.000 REPORT ISSUED: 12/14/99

SAMPLE FIELD ID: 1601-2-2 LAB ID: 927118-2
SAMPLE INFO: DATE ANALYZED: 12/13/99

SAMPLE DESCRIPTION

LAYERED: YES LAYER NO: 2 NO. OF LAYERS: 2
APPEARANCE: BLACK SOFT BITUMINOUS WITH FIBERS

RESULT OF ANALYSIS IN VOLUME PERCENTAGE (BY VISUAL ESTIMATE)

ASBESTOS FIBERS	NONASBESTOS FIBERS	NONFIBROUS COMPONENTS	OTHER COMPONENTS
CHRYSTOLE	CELLULOSE 3	VERMICULITE/MICA	BITUMEN/TAR 90
AMOSITE	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 7

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: 12/13/99 FOR ALL HETEROGENEOUS AND LAYERED SAMPLES EASILY SEPARATED INTO SUBLAYERS, EACH LAYER IS ANALYZED SEPARATELY. NO OF LAYERS - INDICATES NUMBER OF SUBSAMPLES ANALYZED AND REPORTS ISSUED (UNLESS COMPOSITED).

ANALYST


ALEKSEY REZNIK

QUALITY CONTROL


STEVE JARVIS

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

CLIENT NAME: BAT ASSOCIATES LAB JOB NO: B9323
PROJECT NAME: CHARLESTON NSY / 971001-13.03 DATE RECEIVED: 12/6/99
PROJECT NO: L802Z.000 REPORT ISSUED: 12/14/99
SAMPLE FIELD ID: 1601-2-3 LAB ID: 927119-1
SAMPLE INFO: DATE ANALYZED: 12/13/99

SAMPLE DESCRIPTION

LAYERED: YES LAYER NO: 1 NO. OF LAYERS: 2
APPEARANCE: RED HARD RESILIENT TO GRANULAR

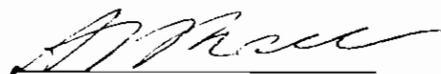
RESULT OF ANALYSIS IN VOLUME PERCENTAGE (BY VISUAL ESTIMATE)

ASBESTOS FIBERS		NONASBESTOS FIBERS		NONFIBROUS COMPONENTS		OTHER COMPONENTS	
CHRYSOTILE	2	CELLULOSE	2	VERMICULITE/MICA		BITUMEN/TAR	
AMOSITE		GLASS FIBERS		PERLITE		SAND/AGGR.	20
CROCIDOLITE		SYNTHETICS		EXPANDED GLASS		GLUE/CAULK	
TREMOLITE		WOLLASTONITE		SYNTHETIC FOAM		VINYL	
ACTINOLITE		TALC		ALUMINUM/METAL		CORK	
ANTHOPHYLLITE				FOAM RUBBER		LATEX/RUBBER	
						PAINT/OTHER	76

COMMENTS:

SAMPLE WAS ANALYZED BY PLM USING DISPERSION STAINING TECHNIQUES IN ACCORDANCE WITH U.S. EPA METHQD 40CFR Ch. I (7-1-92) PT. 763, SUBPT. F, APP. A. LAST CALIBRATION OF EQUIPMENT WAS PERFORMED ON: 12/13/99 FOR ALL HETEROGENEOUS AND LAYERED SAMPLES EASILY SEPARATED INTO SUBLAYERS, EACH LAYER IS ANALYZED SEPARATELY. NO OF LAYERS - INDICATES NUMBER OF SUBSAMPLES ANALYZED AND REPORTS ISSUED (UNLESS COMPOSITED)

ANALYST


ALEKSEY REZNIK

QUALITY CONTROL


STEVE JARVIS

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

CLIENT NAME: BAT ASSOCIATES LAB JOB NO: B9323
PROJECT NAME: CHARLESTON NSY / 971001-13.03 DATE RECEIVED: 12/6/99
PROJECT NO: L802Z.000 REPORT ISSUED: 12/14/99
SAMPLE FIELD ID: 1601-2-3 LAB ID: 927119-2
SAMPLE INFO: DATE ANALYZED: 12/13/99

SAMPLE DESCRIPTION

LAYERED: YES LAYER NO: 2 NO. OF LAYERS: 2
APPEARANCE: BLACK SOFT BITUMINOUS WITH FIBERS

RESULT OF ANALYSIS IN VOLUME PERCENTAGE (BY VISUAL ESTIMATE)

ASBESTOS FIBERS		NONASBESTOS FIBERS	NONFIBROUS COMPONENTS	OTHER COMPONENTS
CHRYCOTILE	5	CELLULOSE	VERMICULITE/MICA	BITUMEN/TAR 85
AMOSITE		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 10

COMMENTS:

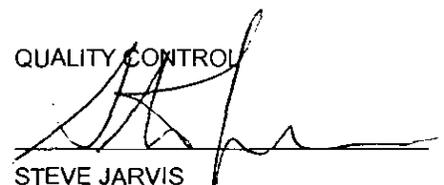
SAMPLE WAS ANALYZED BY PLM USING DISPERSION STAINING TECHNIQUES IN ACCORDANCE WITH U.S. EPA METHOD 40CFR Ch. I (7-1-92) PT. 763, SUBPT. F, APP. A. LAST CALIBRATION OF EQUIPMENT WAS PERFORMED ON: 12/13/99 FOR ALL HETEROGENEOUS AND LAYERED SAMPLES EASILY SEPARATED INTO SUBLAYERS, EACH LAYER IS ANALYZED SEPARATELY. NO OF LAYERS - INDICATES NUMBER OF SUBSAMPLES ANALYZED AND REPORTS ISSUED (UNLESS COMPOSITED).

ANALYST



ALEKSEY REZNIK

QUALITY CONTROL



STEVE JARVIS

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

CLIENT NAME: BAT ASSOCIATES LAB JOB NO: B9323
 PROJECT NAME: CHARLESTON NSY / 971001-13.03 DATE RECEIVED: 12/6/99
 PROJECT NO: L802Z.000 REPORT ISSUED: 12/14/99
 SAMPLE FIELD ID: 1601-3-1 LAB ID: 927120
 SAMPLE INFO: DATE ANALYZED: 12/13/99

SAMPLE DESCRIPTION

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

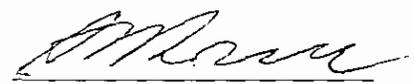
RESULT OF ANALYSIS IN VOLUME PERCENTAGE (BY VISUAL ESTIMATE)

ASBESTOS FIBERS	NONASBESTOS FIBERS	NONFIBROUS COMPONENTS	OTHER COMPONENTS
CHRYBOTILE	CELLULOSE 30	VERMICULITE/MICA	BITUMEN/TAR
AMOSITE	GLASS FIBERS 30	PERLITE 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: 12/13/99 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: B9323
PROJECT NAME: CHARLESTON NSY / 971001-13.03 DATE RECEIVED: 12/6/99
PROJECT NO: L802Z.000 REPORT ISSUED: 12/14/99
SAMPLE FIELD ID: 1601-3-2 LAB ID: 927121
SAMPLE INFO: DATE ANALYZED: 12/13/99

SAMPLE DESCRIPTION

LAYERED: NO

APPEARANCE: GRAY SOFT FIBROUS TO GRANULAR TO POWDERY WITH PAINT

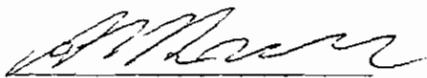
RESULT OF ANALYSIS IN VOLUME PERCENTAGE (BY VISUAL ESTIMATE)

ASBESTOS FIBERS		NONASBESTOS FIBERS		NONFIBROUS COMPONENTS		OTHER COMPONENTS	
CHRYSOTILE		CELLULOSE	30	VERMICULITE/MICA		BITUMEN/TAR	
AMOSITE		GLASS FIBERS	35	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	10

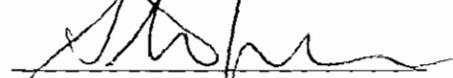
COMMENTS:

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: 12/13/99 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: B9323
PROJECT NAME: CHARLESTON NSY / 971001-13.03 DATE RECEIVED: 12/6/99
PROJECT NO: L802Z.000 REPORT ISSUED: 12/14/99
SAMPLE FIELD ID: 1601-3-3 LAB ID: 927122
SAMPLE INFO: DATE ANALYZED: 12/13/99

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	25	VERMICULITE/MICA		BITUMEN/TAR	
AMOSITE		GLASS FIBERS	25	PERLITE	40	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: 12/13/99 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: B9323
PROJECT NAME: CHARLESTON NSY / 971001-13.03 DATE RECEIVED: 12/6/99
PROJECT NO: L802Z.000 REPORT ISSUED: 12/14/99
SAMPLE FIELD ID: 1601-4-1 LAB ID: 927123
SAMPLE INFO: DATE ANALYZED: 12/13/99

SAMPLE DESCRIPTION

LAYERED: YES LAYER NO: 1+2 NO. OF LAYERS: 2
APPEARANCE: 1. WHITE HARD SILTY WITH MICA (J/C); 2. GRAY SOFT FIBROUS (TAPE)

RESULT OF ANALYSIS IN VOLUME PERCENTAGE (BY VISUAL ESTIMATE)

ASBESTOS FIBERS		NONASBESTOS FIBERS		NONFIBROUS COMPONENTS		OTHER COMPONENTS	
CHRYSTOLE		CELLULOSE	50	VERMICULITE/MICA	5	BITUMEN/TAR	
AMOSITE		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

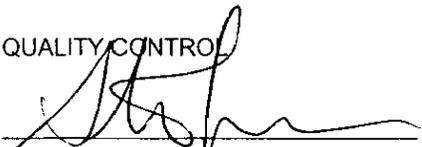
COMMENTS:

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: 12/13/99 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:	B9323
PROJECT NAME:	CHARLESTON NSY / 971001-13.03	DATE RECEIVED:	12/6/99
PROJECT NO:	L802Z.000	REPORT ISSUED:	12/14/99
SAMPLE FIELD ID:	1601-4-2	LAB ID:	927124
SAMPLE INFO:		DATE ANALYZED:	12/13/99

SAMPLE DESCRIPTION

LAYERED:	YES	LAYER NO:	1+2+3	NO. OF LAYERS:	3
APPEARANCE:	1. WHITE HARD SILTY WITH MICA (J/C); 2. GRAY SOFT FIBROUS; 3. LIGHT GRAY HARD SILTY WITH FIBERS				

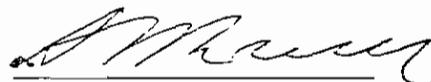
RESULT OF ANALYSIS IN VOLUME PERCENTAGE (BY VISUAL ESTIMATE)

ASBESTOS FIBERS	NONASBESTOS FIBERS	NONFIBROUS COMPONENTS	OTHER COMPONENTS
CHRYBOTILE	CELLULOSE 35	VERMICULITE/MICA 4	BITUMEN/TAR
AMOSITE	GLASS FIBERS 1	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 60

COMMENTS:

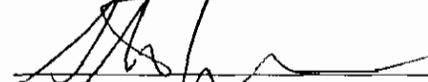
SAMPLE WAS ANALYZED BY PLM USING DISPERSION STAINING TECHNIQUES IN ACCORDANCE WITH U.S. EPA METHOD 40CFR Ch. I (7-1-92) PT. 763, SUBPT. F, APP. A. LAST CALIBRATION OF EQUIPMENT WAS PERFORMED ON: 12/13/99 FOR ALL HETEROGENEOUS AND LAYERED SAMPLES EASILY SEPARATED INTO SUBLAYERS, EACH LAYER IS ANALYZED 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: B9323
PROJECT NAME: CHARLESTON NSY / 971001-13.03 DATE RECEIVED: 12/6/99
PROJECT NO: L802Z.000 REPORT ISSUED: 12/14/99
SAMPLE FIELD ID: 1601-4-3 LAB ID: 927125
SAMPLE INFO: DATE ANALYZED: 12/13/99

SAMPLE DESCRIPTION

LAYERED: YES LAYER NO: 1+2 NO. OF LAYERS: 2
APPEARANCE: 1. WHITE HARD SILTY WITH MICA (J/C); 2. GRAY SOFT FIBROUS (TAPE)

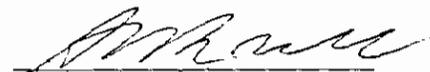
RESULT OF ANALYSIS IN VOLUME PERCENTAGE (BY VISUAL ESTIMATE)

ASBESTOS FIBERS		NONASBESTOS FIBERS		NONFIBROUS COMPONENTS		OTHER COMPONENTS	
CHRYSTOLE		CELLULOSE	60	VERMICULITE/MICA	3	BITUMEN/TAR	
AMOSITE		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	37

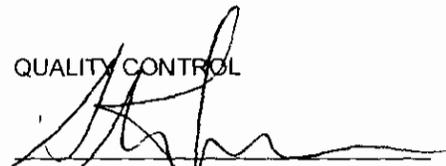
COMMENTS:

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: 12/13/99 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: B9323
PROJECT NAME: CHARLESTON NSY / 971001-13.03 DATE RECEIVED: 12/6/99
PROJECT NO: L802Z.000 REPORT ISSUED: 12/14/99
SAMPLE FIELD ID: 1601-5-1 LAB ID: 927126
SAMPLE INFO: DATE ANALYZED: 12/13/99

SAMPLE DESCRIPTION

LAYERED: YES

APPEARANCE: MULTILAYERED PAINT

RESULT OF ANALYSIS IN VOLUME PERCENTAGE (BY VISUAL ESTIMATE)

ASBESTOS FIBERS	NONASBESTOS FIBERS	NONFIBROUS COMPONENTS	OTHER COMPONENTS
CHRYBOTILE	CELLULOSE 1	VERMICULITE/MICA	BITUMEN/TAR
AMOSITE	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 99

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: 12/13/99 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: B9323
PROJECT NAME: CHARLESTON NSY / 971001-13.03 DATE RECEIVED: 12/6/99
PROJECT NO: L802Z.000 REPORT ISSUED: 12/14/99
SAMPLE FIELD ID: 1601-5-2 LAB ID: 927127
SAMPLE INFO: DATE ANALYZED: 12/13/99

SAMPLE DESCRIPTION

LAYERED: YES
APPEARANCE: MULTILAYERED PAINT

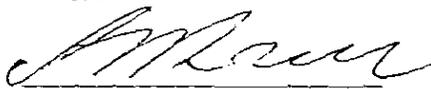
RESULT OF ANALYSIS IN VOLUME PERCENTAGE (BY VISUAL ESTIMATE)

ASBESTOS FIBERS	NONASBESTOS FIBERS	NONFIBROUS COMPONENTS	OTHER COMPONENTS
CHRYSTOLE	CELLULOSE	VERMICULITE/MICA	BITUMEN/TAR
AMOSITE	GLASS FIBERS	PERLITE	SAND/AGGR.
CROCIDOLITE	SYNTHETICS	EXPANDED GLASS	GLUE/CAULK
TREMOLITE	WOLLASTONITE	SYNTHETIC FOAM	VINYL
ACTINOLITE	TALC	ALUMINUM/METAL	CORK
ANTHOPHYLLITE		FOAM RUBBER	LATEX/RUBBER
			PAINT/OTHER
			99

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: 12/13/99 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: B9323
 PROJECT NAME: CHARLESTON NSY / 971001-13.03 DATE RECEIVED: 12/6/99
 PROJECT NO: L802Z.000 REPORT ISSUED: 12/14/99
 SAMPLE FIELD ID: 1601-5-3 LAB ID: 927128
 SAMPLE INFO: _____ DATE ANALYZED: 12/13/99

SAMPLE DESCRIPTION

LAYERED: YES
 APPEARANCE: MULTILAYERED PAINT

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.	1
CROCIDOLITE		SYNTHETICS		EXPANDED GLASS		GLUE/CAULK	
TREMOLITE		WOLLASTONITE		SYNTHETIC FOAM		VINYL	
ACTINOLITE		TALC		ALUMINUM/METAL		CORK	
ANTHOPHYLLITE				FOAM RUBBER		LATEX/RUBBER	
						PAINT/OTHER	99

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: 12/13/99 FOR ALL HETEROGENEOUS AND LAYERED SAMPLES EASILY SEPARATED INTO SUBLAYERS, EACH LAYER IS ANALYZED SEPARATELY. REPORT 1 OF 1

ANALYST


ALEKSEY REZNIK

QUALITY CONTROL

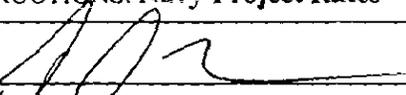
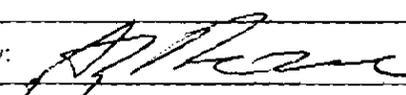

STEVE JARVIS

BAT

BAT Associates, Inc.
ENGINEERS • SCIENTISTS • PLANNERS

5151 Brook Hollow Pkwy., Suite 250
Norcross, GA 30071
Phone: (770) 242-3908
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. 1601-1-1	16.
2. 1601-1-2	17.
3. 1601-1-3	18.
4. 1601-2-1	19.
5. 1601-2-2	20.
6. 1601-2-3	21.
7. 1601-3-1	22.
8. 1601-3-2	23.
9. 1601-3-3	24.
10. 1601-4-1	25.
11. 1601-4-2	26.
12. 1601-4-3	27.
13. 1601-5-1	28.
14. 1601-5-2	29.
15. 1601-5-3	30.
SPECIAL INSTRUCTIONS: Navy Project Rates	
Relinquished by: 	Received by: 
Date: 12/6/99 Time: 10:00	Date: 12/6/99 Time: 10:00

Analytical Environmental Services, Inc.
 3781 Presidential Parkway, Suite 111, Atlanta, GA 30340
 TEL: (770)457-8177 FAX: (770)457-8188

CLIENT NAME : BAT ASSOCIATES, INC DATE : 12/03/99

PROJECT NAME: CHARLESTON NAVAL SHIPYARD

SAMPLE ID : 1601-1-QC1 AES LAB NO : 144769 AES JOB NO : B9526

SAMPLE LOCATION :

SAMPLE - GRAY SEMI-HARD SILTY WITH FIBERS & PAINT.
 DESCRIPTION

RESULT OF BULK SAMPLE ANALYSIS (BY VISUAL VOLUMETRIC PERCENTAGE)			
ASBESTOS FIBERS		NONFIBROUS COMPONENTS	
CHRYBOTILE		VERMICULITE	
AMOSITE		BIOTITE	
CROCIDOLITE		MICA	
ANTHOPHYLLITE		PERLITE	
TREMOLITE		AGGREGATE/SAND	
ACTINOLITE		STYROFOAM	
NONASBESTOS FIBERS		OTHER COMPONENTS	
SYNTHETICS	1	ALUMINUM	
MINERAL WOOL		BITUMEN	
FIBERGLASS		RESILIENT MATERIAL	
CELLULOSE	1	GLUE	
ANIMAL HAIR		BINDERS	98
ANTIGORITE			

REMARKS : PAINT INCLUDED AS BINDER.

This report is certified by the signatures below that this laboratory is accredited by the National Institute of Standards and Technology under NVLAP for the analysis of asbestos in building materials by polarized light microscopy. NVLAP Laboratory Code: 2033. Test report relates only to the items tested.

ANALYST :

QUALITY CONTROL BY :

IRVING GENDLIN *[Signature]*

SVETLANA ARKHIPOV *[Signature]*

Analytical Environmental Services, Inc.
 3781 Presidential Parkway, Suite 111, Atlanta, GA 30340
 TEL: (770)457-8177 FAX: (770)457-8188

CLIENT NAME : BAT ASSOCIATES, INC DATE : 12/03/99

PROJECT NAME: CHARLESTON NAVAL SHIPYARD

SAMPLE ID : 1601-5-QC2 AES LAB NO : 144770 AES JOB NO : B9526

SAMPLE LOCATION :

SAMPLE - TAN SEMI-HARD SILTY WITH FIBERS & PAINT.
 DESCRIPTION

RESULT OF BULK SAMPLE ANALYSIS (BY VISUAL VOLUMETRIC PERCENTAGE)			
ASBESTOS FIBERS		NONFIBROUS COMPONENTS	
CHRYSTILE		VERMICULITE	
AMOSITE		BIOTITE	
CROCIDOLITE		MICA	
ANTHOPHYLLITE		PERLITE	
TREMOLITE		AGGREGATE/SAND	
ACTINOLITE		STYROFOAM	
NONASBESTOS FIBERS		OTHER COMPONENTS	
SYNTHETICS	1	ALUMINUM	
MINERAL WOOL		BITUMEN	
FIBERGLASS		RESILIENT MATERIAL	
CELLULOSE	1	GLUE	
ANIMAL HAIR		BINDERS	98
ANTIGORITE			

COMMENTS : PAINT INCLUDED AS BINDER.

It is certified by the signatures below that this laboratory is accredited by the National Institute of Standards and Technology under NVLAP for the analysis of asbestos in building materials by polarized light microscopy. NVLAP Laboratory Code: 2033. Test report relates only to the items tested.

ICROANALYST :

 KADIY GENDLIN

QUALITY CONTROL BY :

 SVETLANA ARKHIPOV

BAT

BAT Associates, Inc.
ENGINEERS • SCIENTISTS • PLANNERS

5151 Brook Hollow Pkwy., Suite 250
 Norcross, GA 30071
 Phone: (770) 242-3908
 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. 1886-1-QC1	16.
2. 1886-4-QC2	17.
3. 1601-1-QC1	18.
4. 1601-5-QC2	19.
5. 1001-1-QC1	20.
6.	21.
7.	22.
8.	23.
9.	24.
10.	25.
11.	26.
12.	27.
13.	28.
14.	29.
15.	30.
SPECIAL INSTRUCTIONS: Navy Project Rates	
Relinquished by: <i>[Signature]</i>	Received by: <i>[Signature]</i>
Date: 11/30/99 Time: 16:39	Date: 11-30-99 Time: 4:40pm