

N61165.AR.003776
CNC CHARLESTON
5090.3a

ASBESTOS-CONTAINING MATERIAL RE-INSPECTION FOR BUILDING 647 VOLUME CNC
CHARLESTON SC
4/29/2002
BAT ASSOCIATES, INC.

Asbestos-Containing Material Re-inspection Survey for Building 647 Charleston Naval Complex Charleston, South Carolina

Contract No. N62467-96-D-0998
Delivery Order No. 0045

Prepared for:

Department of the Navy
Southern Division
NAVFACENGCOM
2155 Eagle Drive
North Charleston, SC 29419

Prepared by:

BAT Associates, Inc.
5151 Brook Hollow Parkway
Suite 250
Norcross, Georgia 30071
Contact Person: Mr. Douglas J. Milton, CIH
(770) 242-3908

April 29, 2002

**Asbestos-Containing Material Re-inspection
Survey for Building 647
Charleston Naval Complex
Charleston, South Carolina**

Contract No. N62467-96-D-0998
Delivery Order No. 0045

Prepared for:

Department of the Navy
Southern Division
NAVFACENGCOM
2155 Eagle Drive
North Charleston, SC 29419

Prepared by:

BAT Associates, Inc.
5151 Brook Hollow Parkway
Suite 250
Norcross, Georgia 30071
Contact Person: Mr. Douglas J. Milton, CIH
(770) 242-3908

April 29, 2002

Asbestos-Containing Material Re-inspection Survey for Building 647 Charleston Naval Complex Charleston, South Carolina

Contract No. N62467-96-D-0998
Delivery Order No. 0045

Prepared for:

Department of the Navy
Southern Division
NAVFACENGCOM
2155 Eagle Drive
North Charleston, SC 29419

Prepared by:

BAT Associates, Inc.
5151 Brook Hollow Parkway
Suite 250
Norcross, Georgia 30071
Contact Person: Mr. Douglas J. Milton, CIH
(770) 242-3908

April 29, 2002

TABLE OF CONTENTS

	<u>Page</u>
1.0 Executive Summary	1
1.1 Asbestos-Containing Material Summary	1
2.0 Building Inspection Information	3
3.0 Introduction	4
4.0 Asbestos	4
4.1 Asbestos Inventory Assessment	4
4.2 Summary of Asbestos Sample Analysis Results	6
4.3 Asbestos Quality Control	9
5.0 Conclusions	10
5.1 Asbestos-Containing Materials	10
6.0 Special Consideration Related To Abatement	11

Appendices

Appendix A	Description of ACM Assessment Protocols and Sampling Methodology
Appendix B	ACM Sample and Location Drawings
Appendix C	Photographic Documentation of Identified ACM
Appendix D	ACM Laboratory Analysis Results
Appendix E	Personnel and Laboratory Accreditations

List of Tables and Figures

Table 1.0	Summary of Identified ACM	1
Table 2.0	List of Identified Suspect ACM	4
Table 3.0	Summary of ACM Sample Analysis Results	7
Table 4.0	Validation of Asbestos QC Sample Results	9
Table 5.0	List of Identified Asbestos-Containing Materials	10

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 survey of Building 647 located at the Charleston Naval Complex in Charleston, South Carolina.

1.1 Asbestos-Containing Material Summary

Physical inspection and confirmatory laboratory analysis of bulk samples resulted in the identification of the following materials with asbestos concentrations greater than one percent in Building 647.

Table 1.0 Summary of Identified ACM

Material Description	ACM Location	Approximate Quantity	NESHAP Category
Floor Tile, 9" x 9" gray w/ black mastic	Rooms 105, 206, 207, 208, 209, 215, 216, 229, 229A, 230, 231, 235, 237, and 238	140 on first floor; 7,080 SF on second floor	Category I, non-friable
Floor Tile, 9" x 9" dark gray with white w/ black mastic	Rooms 107, 124, 125, and 151	1,470 SF	Category I, non-friable
Floor Tile, 9" x 9" dark gray with red streaks w/ yellow mastic	Under gray asbestos floor tile in Room 105	160- SF	Category I, non-friable
Floor Tile, 9" x 9" gray with white specks w/ black mastic	Rooms 110, and 154	260 SF	Category I, non-friable
Floor Tile, 9" x 9" green with white	Rooms 141, 142, 143, 221, 222, 223, 224, 225, 226, 227, and 228	1,610 SF on first floor; 3,420 SF on second floor	Category I, non-friable
Floor Tile, 9" x 9" dark green border w/ black mastic	Room 128	465 SF	Category I, non-friable
Floor Tile, 9" x 9" beige with white and brown streaks	Rooms 119, 128A, and 129	400 SF	Category I, non-friable
Floor Tile, 9" x 9" beige with heavy brown specks w/ black mastic	Room 126	617 SF	Category I, non-friable
Floor Tile, 12" x 12" blue w/ specks	Room 240	24 SF	Category I, non-friable
Pipe Fitting Insulation	Overhead at junction of corridors 130 and 150	3 EA	Regulated, friable
Pipe Fitting Insulation	Overhead piping outside of rooms 140 and 116	2EA	Regulated, friable
Pipe Fitting Insulation	Fan Room, on heating pipe	24 EA	Regulated, friable

Material Description	ACM Location	Approximate Quantity	NESHAP Category
Pipe Fitting Insulation	Boiler Room	6 EA >12" dia.; 70 EA <6" dia.	Regulated, friable
Tank Insulation, heat exchanger tank #1 in ceiling	Boiler Room	40 SF	Regulated, friable
Tank Insulation, on hot water tank	Boiler Room	130 SF	Regulated, friable
Tank Insulation, heat exchanger tank #2 in ceiling	Boiler Room	40 SF	Regulated, friable
Floor Tile, 12" x 12" red with brown w/ black mastic	Rooms 108 and 116	310 SF	Category I, non-friable
Fire Door Insulation	Stairwell doors, outside doors, and assumed vault door	1 Vault door on first floor; 9 doors on first floor; 3 doors on second floor	Category I, non-friable
Chalkboard, black	Corridor 212	1 board, (4' x 8')	Category I, non-friable

NOTES: SF= Square Feet LF = Linear Feet EA = Each

NESHAP = National Emission Standards for Hazardous Air Pollutants

1. One percent or less asbestos content is considered a non-asbestos-containing material by EPA and the State of South Carolina.
2. NESHAP requires 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 in laboratory analyses were noted.

2.0 BUILDING INSPECTION INFORMATION

Building Name:	Storage Building
Building Number:	647
Facility:	Charleston Naval Complex Charleston, SC
Building Square Footage:	32,200
Year Built:	1968
Building Type:	Storage
No. of Floors in Building:	2 floors on slab with basement, no attic and no crawl space
Purpose of ACM Survey:	Re-Inspection
Facility Unit Identification Code (UIC):	N/A

Building Contact:	Mr. Glenn Hill
Contact's Telephone No.:	(843) 746-1771
Building Survey Date(s):	April 2, 2002

Asbestos Inspector's Name:	Mr. Steven Adams
Asbestos Inspector's Accreditation No:	GA7350
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 survey of Building 647 located at the Charleston Naval Complex in Charleston, South Carolina. This report discusses this survey and its results. The report presents the ACM survey in Section 4.0. This section describes the identified suspect materials, analytical results, and quality control results. Section 5.0 discusses the conclusions of the overall survey. Appendix A describes the details of the ACM assessment protocols and sampling methodology. Appendix B contains drawings identifying the locations of collected samples and identified ACM. Appendix C contains photographic documentation of identified ACM. Appendix D contains asbestos laboratory analysis results. Appendix E contains personnel and laboratory accreditations.

4.0 ASBESTOS

The ACM 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) requirements for implementation of the Asbestos Hazard Emergency Response Act (AHERA), the Asbestos School Hazard Abatement Reauthorization Act (ASHARA), and the South Carolina Department of Health and Environmental Control (DHEC).

The inspection survey was carried out by Mr. Steven Adams on April 2, 2002 under the direction of Mr. Douglas J. Milton, CIH. Mr. Adams is an accredited asbestos building inspector and management planner. Mr. Milton is an accredited asbestos building inspector, management planner, and a Certified Industrial Hygienist.

4.1 Asbestos Inventory and Assessment

Forty-three homogeneous areas (materials) were identified during the survey. Table 2.0 describes the suspect ACM identified in and around Building 647. Those materials with an asbestos content of less than one percent (as determined by sampling and analysis) are not assigned to an AHERA category since they are considered non-asbestos containing. These materials are listed as N/A in this table.

Table 2.0 List of Identified Suspect ACM

HA No.	Description of Snspect ACM	Location of Suspect ACM	AHERA Category of Material
01	Base Cove, dark brown w/ yellow mastic	Rooms 105, 105A, 138, 138A, 142, 152, 154, 158, and 206	N/A
02	Base Cove, beige w/ yellow mastic	Rooms 118, 119, and 124	N/A
03	Base Cove, tan w/ beige mastic	Rooms 125, 126, and 127	N/A
04	Base Cove, black w/ brown mastic	Rooms 128, 134, 149	N/A
05	Wall Paper, beige	Room 105	N/A

HA No.	Description of Suspect ACM	Location of Suspect ACM	AHERA Category of Material
06	Wall Paper, beige large squares	Room 119	N/A
07	Joint Sealer Compound, on drywall	Room 119, interior windows	N/A
08	Joint Sealer Tape, on drywall	Rooms 107 and 137A	N/A
09	Drywall, on walls	Rooms 107 and 137A	N/A
10	Floor Tile, 9"x 9" gray w/ black mastic	Rooms 105, 206, 207, 208, 209, 215, 216, 229, 229A, 230, 231, 235, 237, and 238	M
11	Floor Tile, 9"x 9" dark gray with red streaks w/ yellow mastic	Under gray asbestos floor tile in Room 105	M
12	Floor Tile, 9"x9" dark gray with white w/ black mastic	Rooms 107, 124, 125, and 151	M
13	Floor Tile, 9" x 9" gray with white specks w/ black mastic	Rooms 110 and 154	M
14	Floor Tile, 9"x 9" green w/ white	Rooms 141, 142, 143, 221, 222, 223, 224, 225, 226, 227, and 228	M
15	Vinyl Sheet Flooring, tan and pink	Room 134	N/A
16	Carpet Mat, brown	Room 204	N/A
17	Floor Tile, 9"x 9" dark green border w/ black mastic	Room 128	M
18	Floor Tile, 9"x 9" beige with white and brown streaks	Rooms 119, 128A, and 129	M
19	Floor Tile, 9"x 9" beige with heavy brown specks w/ black mastic	Room 126	M
20	Floor Tile, 12" x 12" blue w/ specks	Room 240	M
21	Ceramic Tile, green and white w/ white and gray grouting	Rooms 145 and 147	N/A
22	Mastic, from paneling	Rooms 158	N/A
23	Ceiling Tile, white suspended	Rooms 101, 107, 108, 116, 118, 119, 124, 125, 127, and main corridor	N/A
24	Mastic, black on silver ductwork tape	Room 128 and corridor	N/A
25	Pipe Fitting Insulation	Overhead at junction of corridors 130 and 150	TSI
26	Pipe Fitting Insulation	On overhead piping at front of the building	N/A
27	Air Handler Insulation	Fan Room	N/A
28	Pipe Insulation	Overhead piping outside of rooms 116 and 140	TSI
29	Pipe Insulation	Overhead piping outside of room 131	N/A
30	Pipe Fitting Insulation	Fan Room	TSI
32	Cloth jacket, on duct	Fan Room	N/A
33	Silver Tape, on duct	Fan Room	N/A
34	Pipe Fitting Insulation	Boiler Room	TSI
36	Flexible Duct Connector	Fan Room	N/A

HA No.	Description of Suspect ACM	Location of Suspect ACM	AHERA Category of Material
38	Tank Insulation, heat exchanger tank #1, in ceiling	Boiler Room	TSI
40	Tank Insulation, on hot water tank	Boiler Room	TSI
41	Tank Insulation, heat exchanger tank #2 in ceiling	Boiler Room	TSI
44	Mastic, black on wall	Room 210	N/A
47	Floor Tile, 12" x 12" red with brown w/ black mastic	Rooms 108 and 116	M
48	Roofing Tar, black on built-up roof	Roof	N/A
49	Floor Tile, 9" x 9" gray with orange and white w/ brown adhesive	Under green asbestos floor tile in Rooms 225, 226, and 227	N/A
50	Roof Shingles	Roof	N/A
51	Fire Door Insulation	Stairwell doors, outside doors, and assumed vault door	M

Notes: N/A = Not Applicable M = Miscellaneous Material

4.2 Summary of Asbestos Sample Analysis Results

Eighteen suspect homogeneous area (material) was found to contain asbestos. Table 3.0 contains a summary of the bulk sample analysis results for suspect ACM identified in this building.

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

Table 3.0 Summary of ACM Sample Analysis Results

HA No.	Sample ID Nos.	Suspect Material Description	Asbestos Content	Friability
01	1-1, 2-1, 3-1, 4-1, 5-1, 6-1	Base Cove, dark brown w/ yellow mastic	NAD	N/A
02	20-1, 21-1, 22-1, 23-1, 24-1, 25-1	Base Cove, beige w/ yellow mastic	NAD	N/A
03	37-1, 38-1, 39-1, 40-1, 41-1, 44-1	Base Cove, tan w/ beige mastic	NAD	N/A
04	55-1, 57-1, 58-1, 59-1, 60-1, 61-1	Base Cove, black w/ brown mastic	NAD	N/A
05	91-1, 92-1, 93-1	Wall Paper, beige	NAD	N/A

HA No.	Sample ID Nos.	Suspect Material Description	Asbestos Content	Friability
06	94-1, 95-1, 96-1	Wall Paper, beige large squares	NAD	N/A
07	98-1, 100-1, 103-1	Joint Sealer Compound, on drywall	NAD	N/A
08	99-1, 102-1, 105-1	Joint Sealer Tape, on drywall	NAD	N/A
09	101-1, 104-1, 107-1	Drywall, on walls	NAD	N/A
10	116-1, 647-03-01	Floor Tile, 9"x 9" gray w/ black mastic	Tile = 5% chrysotile, Mastic = >1% chrysotile	Non
11	120-1	Floor Tile, 9"x 9" dark gray with red streaks w/ yellow mastic	Tile = > 1% chrysotile, Mastic = NAD	Non
12	129-1, 130-1	Floor Tile, 9"x 9" dark gray with white w/ black mastic	Tile = 5% Chrysotile, Mastic = 3% chrysotile	Non
13	139-1, 140-1	Floor Tile, 9" x 9" gray with white specks w/ black mastic	Tile = >1% chrysotile, Mastic = NAD	Non
14	146-2, 147-1, 148-1, 149-1	Floor Tile, 9"x 9" green w/ white	>1% chrysotile	Non
15	181-1, 182-1, 183-1	Vinyl Sheet Flooring, tan and pink	NAD	N/A
16	196-1, 197-1, 198-1	Carpet Mat, brown	NAD	N/A
17	647-04-01	Floor Tile, 9"x 9" dark green border w/ black mastic	Tile =5% chrysotile, Mastic = 3% chrysotile	Non
18	208-1, 209-1, 210-1	Floor Tile, 9"x 9" beige with white and brown streaks	>1% chrysotile	Non
19	647-06-01	Floor Tile, 9"x 9" beige with heavy brown specks w/ black mastic	Tile = NAD, Mastic = 3% chrysotile	Non
20	647-07-01	Floor Tile, 12" x 12" blue w/ specks	Tile = 2% chrysotile, Mastic = NAD	Non
21	238-1, 239-1, 240-1, 241-1, 242-1, 243-1	Ceramic Tile, green and white w/ white and gray grouting	NAD	N/A
22	245-1, 246-1, 247-1	Mastic, from paneling	NAD	N/A
23	249-1, 253-1, 255-1, 256-1, 260-1, 266-1, 275-1, 264-1, 287-2, 290-2, 293-2	Ceiling Tile, white suspended	NAD	N/A
24	297-1, 298-1, 299-1	Mastic, black on silver ductwork tape	NAD	N/A
25	302-1, 303-1	Pipe Fitting Insulation	>1% Amosite, >1% chrysotile	Friable

HA No.	Sample ID Nos.	Suspect Material Description	Asbestos Content	Friability
26	305-1, 306-1, 307-1, 308-1	Pipe Fitting Insulation	NAD	N/A
27	309-1	Air Handler Insulation	NAD	N/A
28	310-1	Pipe Insulation	>1% Amosite, >1% chrysotile	Friable
29	311-1, 312-1, 313-1	Pipe Insulation	NAD	N/A
30	316-1	Pipe Fitting Insulation	>1% Amosite, >1% chrysotile	Friable
32	322-1, 323-1, 324-1	Cloth jacket, on duct	NAD	N/A
33	325-1, 326-1, 327-1	Silver Tape, on duct	NAD	N/A
34	328-1, 329-1	Pipe Fitting Insulation	>1% Amosite, >1% chrysotile	Friable
36	334-1	Flexible Duct Connector	NAD	N/A
38	350-1, 351-1, 352-1	Tank Insulation, heat exchanger tank #1, in ceiling	>1% Amosite, >1% chrysotile	Friable
40	357-1	Tank Insulation, on hot water tank	>1% Amosite	Friable
41	358-1, 359-1, 360-1	Tank Insulation, heat exchanger tank #2 in ceiling	>1% Amosite, >1% chrysotile	Friable
44	375-2, 647-45-01, 647-45-02	Mastic, black on wall	NAD	N/A
47	647-10-01, 647-10-02, 647-10-03	Floor Tile, 12" x 12" red with brown w/ black mastic	Tile = 5% chrysotile, Mastic = 3% chrysotile	Non
48	647-25-01, 647-25-02, 647-25-03	Roofing Tar, black on built-up roof	<1% chrysotile	N/A
49	647-31-01, 647-31-02, 647-31-03	Floor Tile, 9" x 9" gray with orange and white w/ brown adhesive	NAD	N/A
50	647-26-01, 647-26-02, 647-26-03	Roof Shingles	NAD	Non
51	Fire Door Insulation	Stairwell doors, outside doors, and assumed vault door	Assumed	Non

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

4.3 Asbestos Quality Control

The purpose of quality control sampling was to ensure reproducibility of the primary laboratory analysis results. Duplicate samples were collected for ten percent of the total building samples for this purpose. The comparison of sample results can be found in Table 4.0.

Table 4.0 Validation of Asbestos QC Sample Results

Sample I.D. No.	Primary Laboratory Analysis Results	QC Laboratory Analysis Results
647-QC-01	NAD	NAD
647-QC-02	Tile = 5% chrysotile Mastic = 3% chrysotile	Tile = 5% chrysotile Mastic = 3% chrysotile
647-QC-03	Tile = 5% chrysotile Mastic = 5% chrysotile	Tile = 5% chrysotile Mastic = 5% chrysotile

No analysis discrepancies were noted from quality control sampling.

5.0 CONCLUSIONS

5.1 Asbestos-Containing Materials

Physical inspection of Building 647 and confirmatory laboratory analysis of the bulk samples resulted in the identification of the following materials with asbestos concentrations greater than one percent.

Table 5.0 List of Identified Asbestos-Containing Materials

Material Description	ACM Location	Approximate Quantity	NESHAP Category
Floor Tile, 9" x 9" gray w/ black mastic	Rooms 105, 206, 207, 208, 209, 215, 216, 229, 229A, 230, 231, 235, 237, and 238	140 on first floor; 7,080 SF on second floor	Category I, non-friable
Floor Tile, 9" x 9" dark gray with white w/ black mastic	Rooms 107, 124, 125, and 151	1,470 SF	Category I, non-friable
Floor Tile, 9" x 9" dark gray with red streaks w/ yellow mastic	Under gray asbestos floor tile in Room 105	160- SF	Category I, non-friable
Floor Tile, 9" x 9" gray with white specks w/ black mastic	Rooms 110, and 154	260 SF	Category I, non-friable
Floor Tile, 9" x 9" green with white	Rooms 141, 142, 143, 221, 222, 223, 224, 225, 226, 227, and 228	1,610 SF on first floor; 3,420 SF on second floor	Category I, non-friable
Floor Tile, 9" x 9" dark green border w/ black mastic	Room 128	465 SF	Category I, non-friable
Floor Tile, 9" x 9" beige with white and brown streaks	Rooms 119, 128A, and 129	400 SF	Category I, non-friable
Floor Tile, 9" x 9" beige with heavy brown specks w/ black mastic	Room 126	617 SF	Category I, non-friable
Floor Tile, 12" x 12" blue w/ specks	Room 240	24 SF	Category I, non-friable
Pipe Fitting Insulation	Overhead at junction of	3 EA	Regulated, friable

Material Description	ACM Location	Approximate Quantity	NESHAP Category
	corridors 130 and 150		
Pipe Fitting Insulation	Overhead piping outside of rooms 140 and 116	2EA	Regulated, friable
Pipe Fitting Insulation	Fan Room, on heating pipe	24 EA	Regulated, friable
Pipe Fitting Insulation	Boiler Room	6 EA >12" dia.; 70 EA <6" dia.	Regulated, friable
Tank Insulation, heat exchanger tank #1 in ceiling	Boiler Room	40 SF	Regulated, friable
Tank Insulation, on hot water tank	Boiler Room	130 SF	Regulated, friable
Tank Insulation, heat exchanger tank #2 in ceiling	Boiler Room	40 SF	Regulated, friable
Floor Tile, 12" x 12" red with brown w/ black mastic	Rooms 108 and 116	310 SF	Category I, non-friable
Fire Door Insulation	Stairwell doors, outside doors, and assumed vault door	1 Vault door on first floor; 9 doors on first floor; 3 doors on second floor	Category I, non-friable
Chalkboard, black	Corridor 212	1 board, (4' x 8')	Category I, non-friable

NOTES: SF= Square Feet LF = Linear Feet

6.0 SPECIAL CONSIDERATIONS RELATED TO ABATEMENT

This building has numerous movable objects throughout the building, which should be relocated by government personnel. An asbestos abatement contractor could relocated these objects, however, the cost would include a four-person team approximately 8 hours to perform the relocation.

It is recommended that gross removal be performed in the boiler room, glove bag for the pipe fitting insulation in the fan room, and floor tile removal by sectional area.

APPENDIX A

**Description of ACM Assessment Protocols
and Sampling Methodology**

APPENDIX A

**DESCRIPTION OF ACM ASSESSMENT PROTOCOLS
AND SAMPLING METHODOLOGY**

Asbestos Assessment Protocol

The assessment protocol for ACM involved three distinct steps. The inspectors:

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 any access problems (e.g., collection of samples in a limited access pipe chase within 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 in accordance with the National Emission Standards for Hazardous Air Pollutants (NESHAP) requirements 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 *ACM Sampling Methodology*, below).

ACM Sampling Methodology

Representative, randomly selected bulk samples were collected in accordance with the Navy's P-141 guideline and AHERA sampling protocol, as described in 40 CFR 763.86, and in accordance with BAT's contractual requirements. Bulk samples were collected from homogenous areas (materials) in a manner that minimized the risk for 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 (SF) = 3 samples
 - b. Greater than 1,000 SF and less than or equal to 5,000 SF = 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 SF
- b. Pipe and duct insulation patches are limited to a maximum of 6 Linear Feet (LF) or 6 SF
- c. Boiler, tank, and furnace patches are limited to 6 SF

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*

Three samples minimum.

7. *Miscellaneous Friable Material*

Three samples minimum.

8. *Non-friable Material*

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

Minimum of three samples.

The procedures followed for collection of each bulk sample are 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 eye-wear.
2. The surface of the material to be 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, or 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 that was then sealed and labeled with a unique identification number, which was also recorded on a 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 transported to Analytical Environmental Services, Inc. (AES) Asbestos Laboratories in Atlanta, Georgia, for Polarized Light Microscopy (PLM) analysis. 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.
8. BAT collected duplicate samples during the collection of primary bulk samples 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 using the same criteria as the primary samples.
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.

APPENDIX B

ACM Sample and Location Drawings

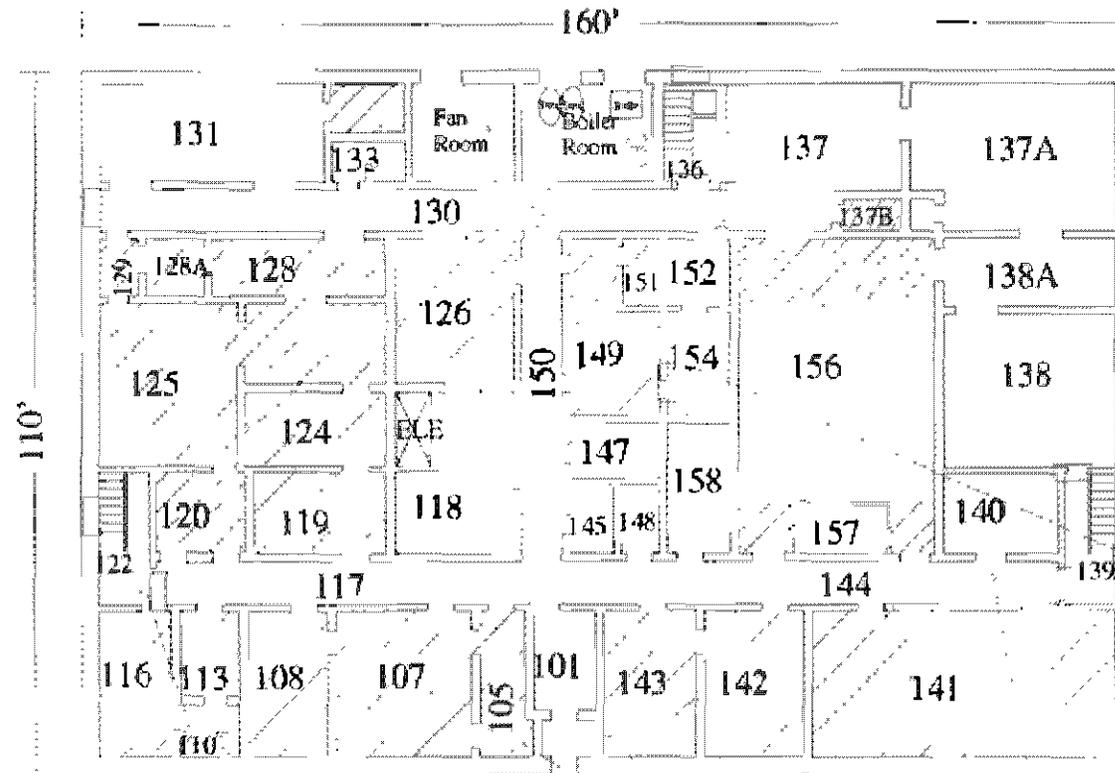
APPENDIX B

ACM SAMPLE AND LOCATION DRAWINGS

Fan Room has 24 pipe fittings with asbestos-containing insulation

Boiler Room has 3 >12" pipe fittings and 70 <6" pipe fittings with asbestos-containing insulation

Majority of asbestos-containing floor tile is located under carpet.



No access to Room 153 (vault)

- Sample Location
- (-) Non-Asbestos-Containing Sample
- (+) Asbestos-Containing Sample
- ▨ Asbestos-Containing Floor Tile and Mastic
- Asbestos-Containing Pipe Fitting Insulation
- Asbestos-Containing Fire Door Insulation
- Asbestos-Containing Hot Water Tank Insulation
- ⊗ Asbestos-Containing Exchanger Tank Insulation

One asbestos-containing pipe fittings insulation Multiple layers of floor tile One asbestos-containing pipe fittings insulation

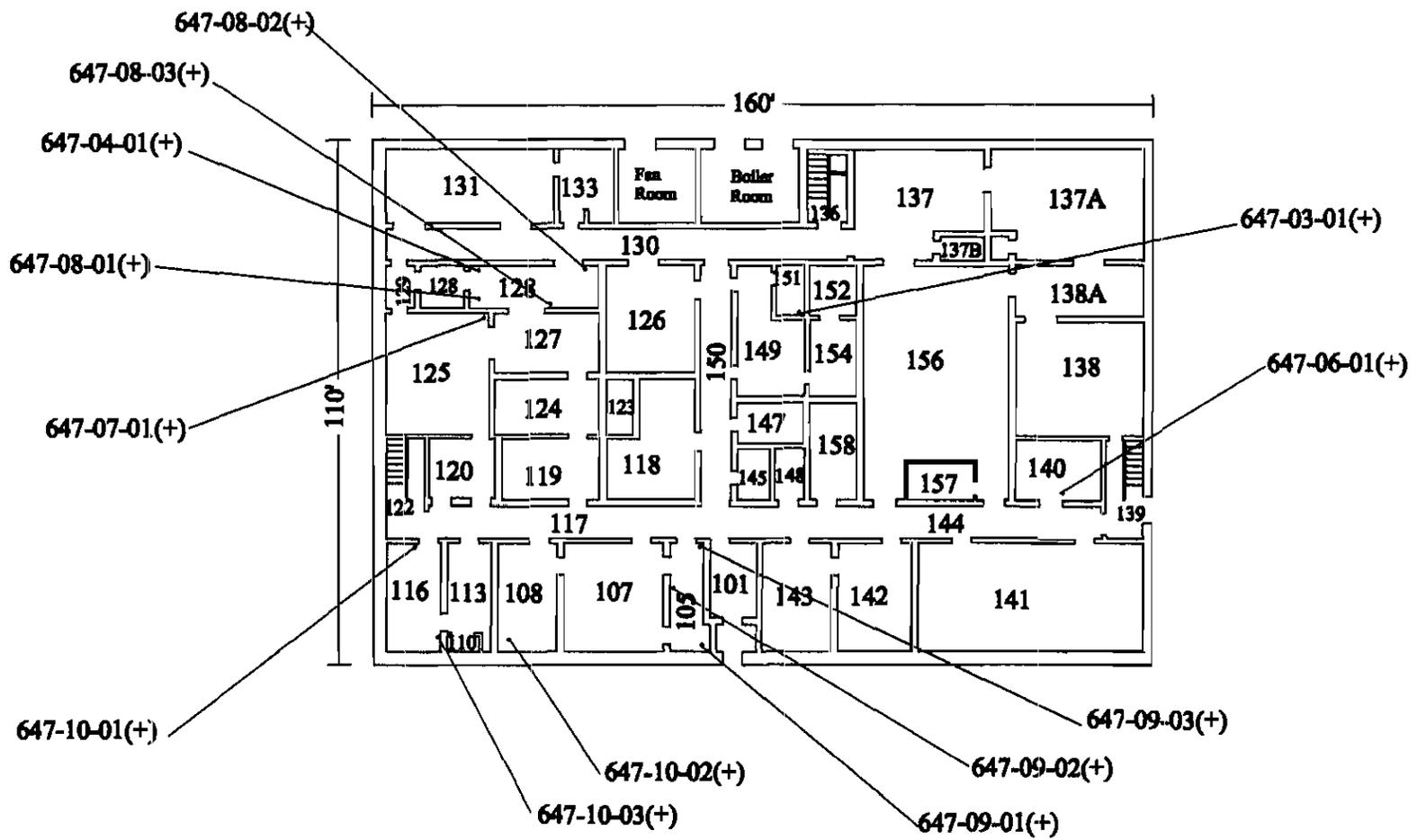
BUILDING 647, First Floor
 Charleston Naval Base, Charleston, SC

Asbestos-Containing Material Locations



Not To Scale

FAI Associates, Inc.
 ENVIRONMENTAL HEALTH & SAFETY SERVICES
 5141 BROOK HOLLOW PARKWAY, SUITE 250
 NORCROSS, GA 30072



BUILDING 647, First Floor
 Charleston Naval Base, Charleston, SC
 Current Survey Sample Locations

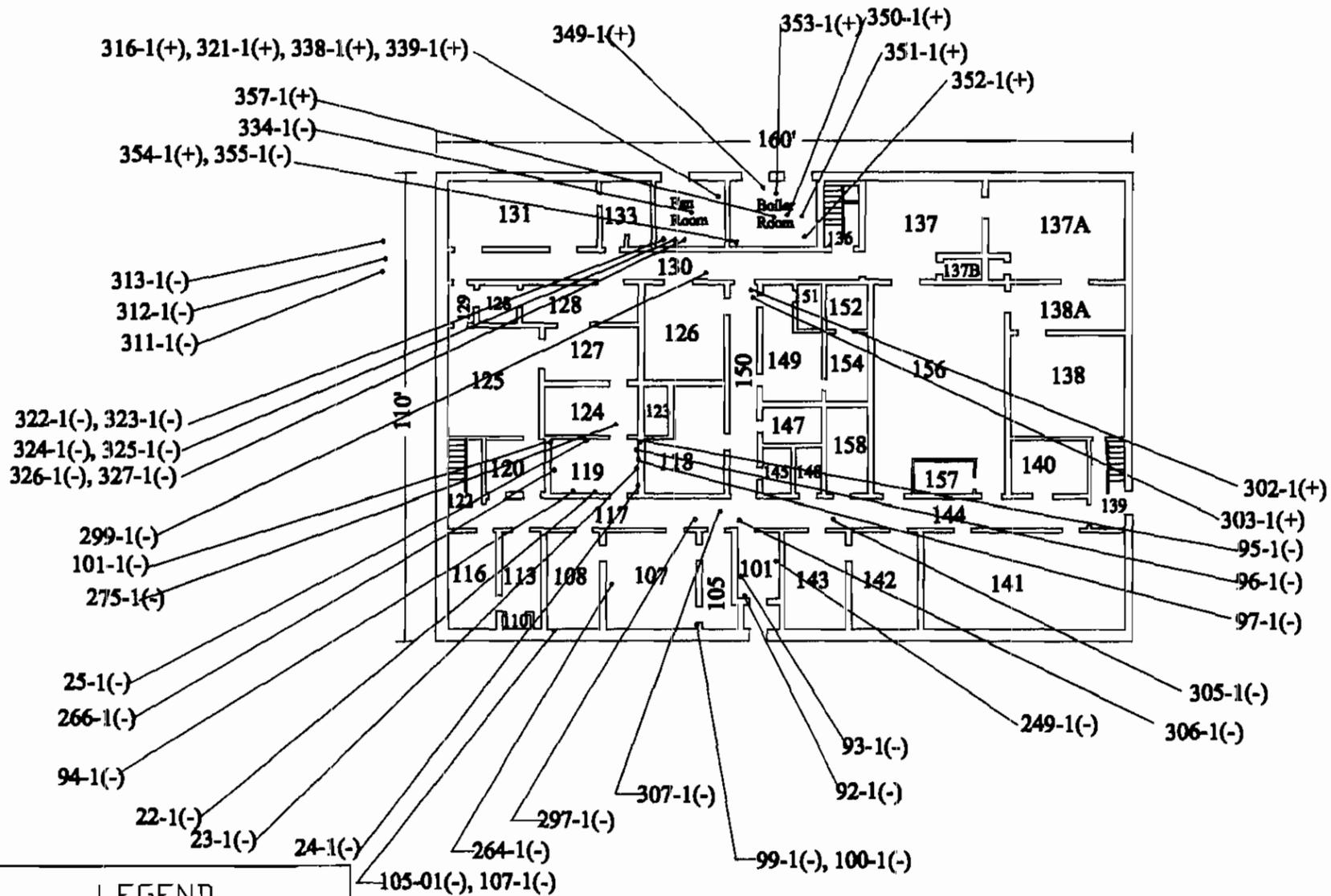


Not To Scale

LEGEND

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

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



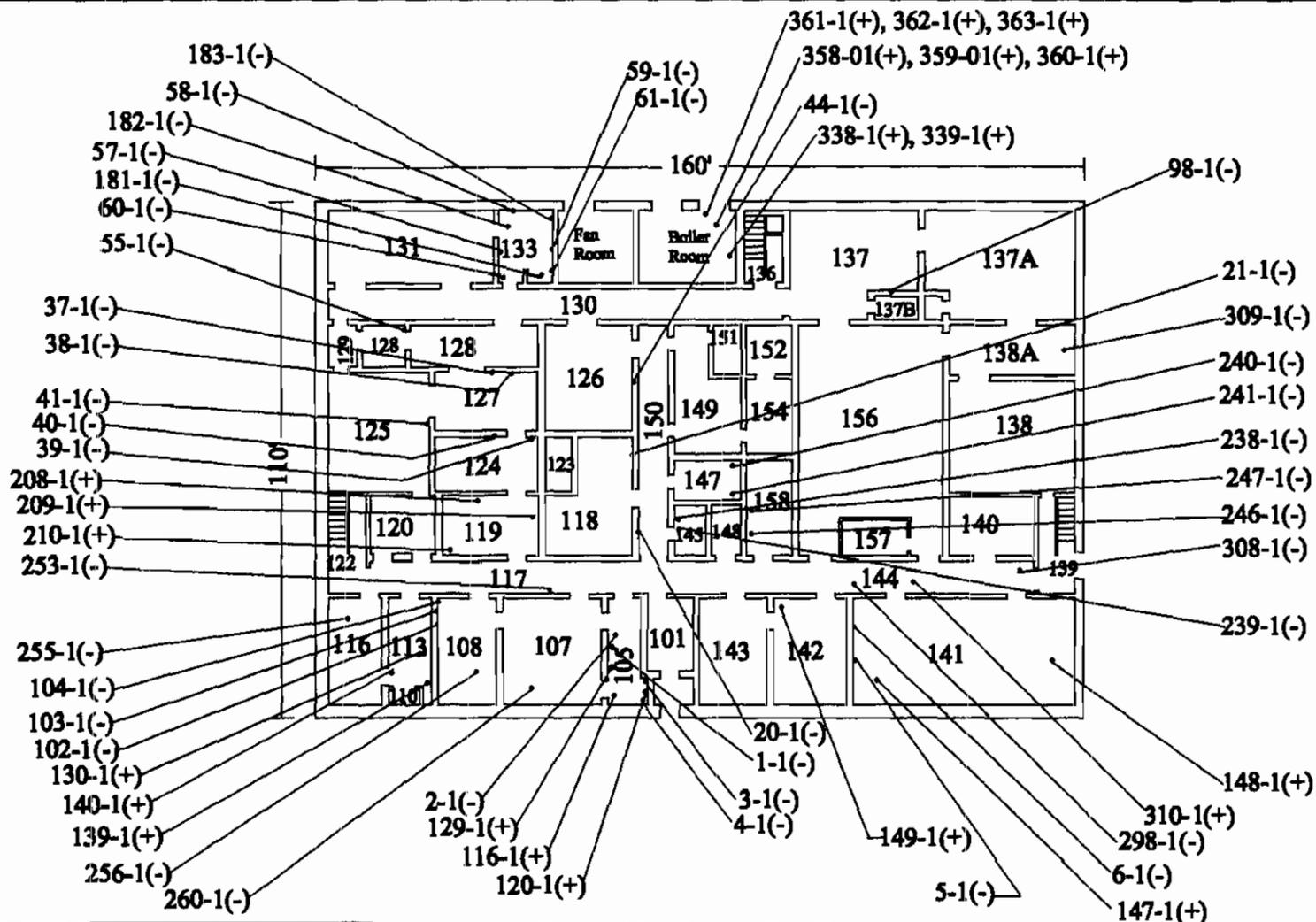
BUILDING 647, First Floor
 Charleston Naval Base, Charleston, SC
 Previous Survey Sample Locations

Not To Scale

LEGEND

- Sample Location
- (-) Non-Asbestos-containing Sample
- (+) Asbestos-containing Sample

BAT Associates, Inc.
 ENVIRONMENTAL, HEALTH & SAFETY SERVICES
 5111 BROOK HOLLOW PARKWAY, SUITE 100
 NORCROSS, GA 30071



LEGEND

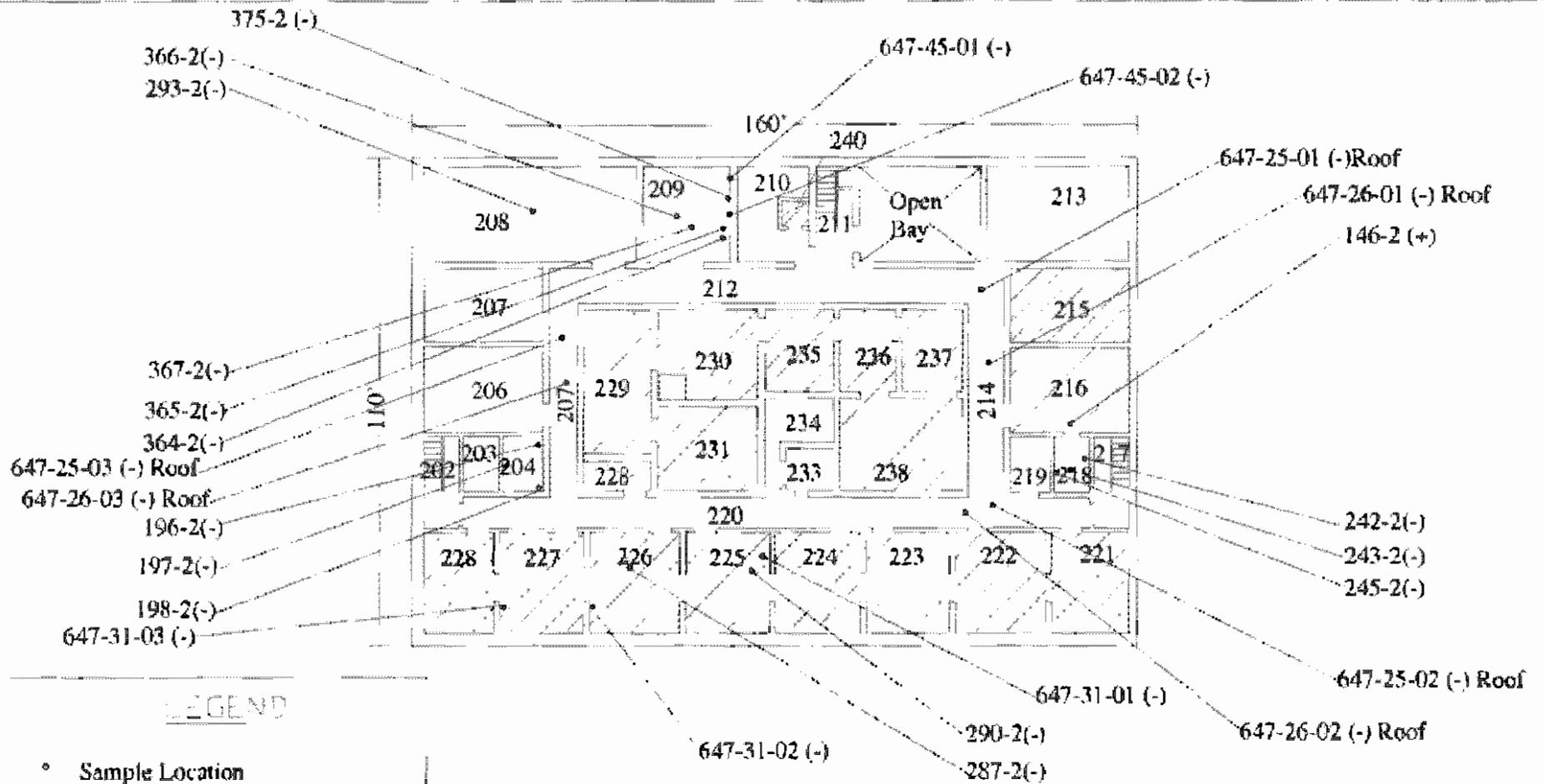
- Sample Location
- (-) Non-Asbestos-containing Sample
- (+) Asbestos-containing Sample

BUILDING 647, First Floor
 Charleston Naval Base, Charleston, SC
Previous Survey Sample Locations



Not To Scale

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



LEGEND

- Sample Location
- (-) Non-Asbestos-Containing Sample
- (+) Asbestos-Containing Sample
- ▨ Asbestos-Containing Floor Tile and Mastic

**BUILDING 647, Second Floor
Charleston Naval Base, Charleston, SC
Asbestos-Containing Material Locations and
Previous and Current Sample Locations**

Majority of asbestos-containing floor tile is located under carpet.

Not To Scale

BAT Associates, Inc.
ENVIRONMENTAL HEALTH & SAFETY SERVICES
511 BUCKINGHAM PARKWAY, SUITE 250
NORCROSS, GA 30071

APPENDIX C

Photographic Documentation of Identified ACM

APPENDIX C

PHOTOGRAPHIC DOCUMENTATION OF IDENTIFIED ACM



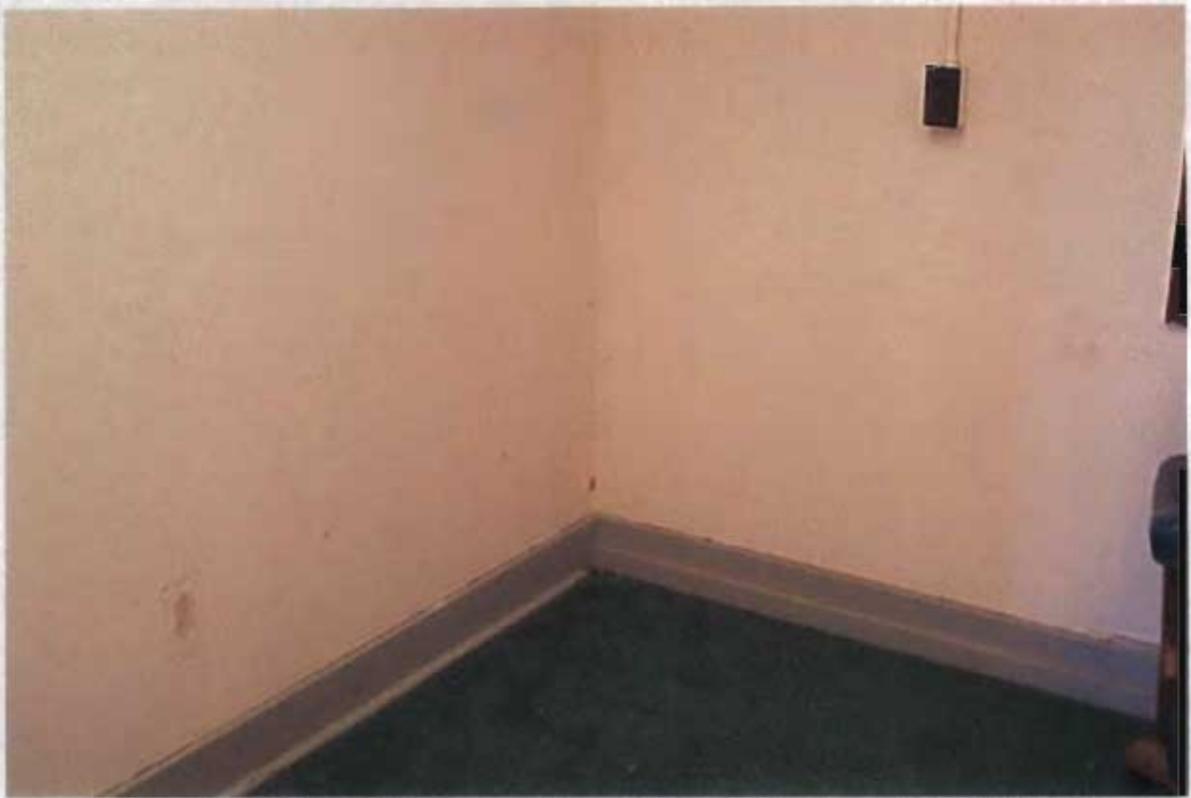
Floor Tile, 9" x 9" dark gray with white w/ black mastic, HA# 11



Floor Tile, 9" x 9" dark gray with white w/ black mastic, HA# 12



Floor Tile, 9" x 9" dark gray with white w/ black mastic, HA# 13



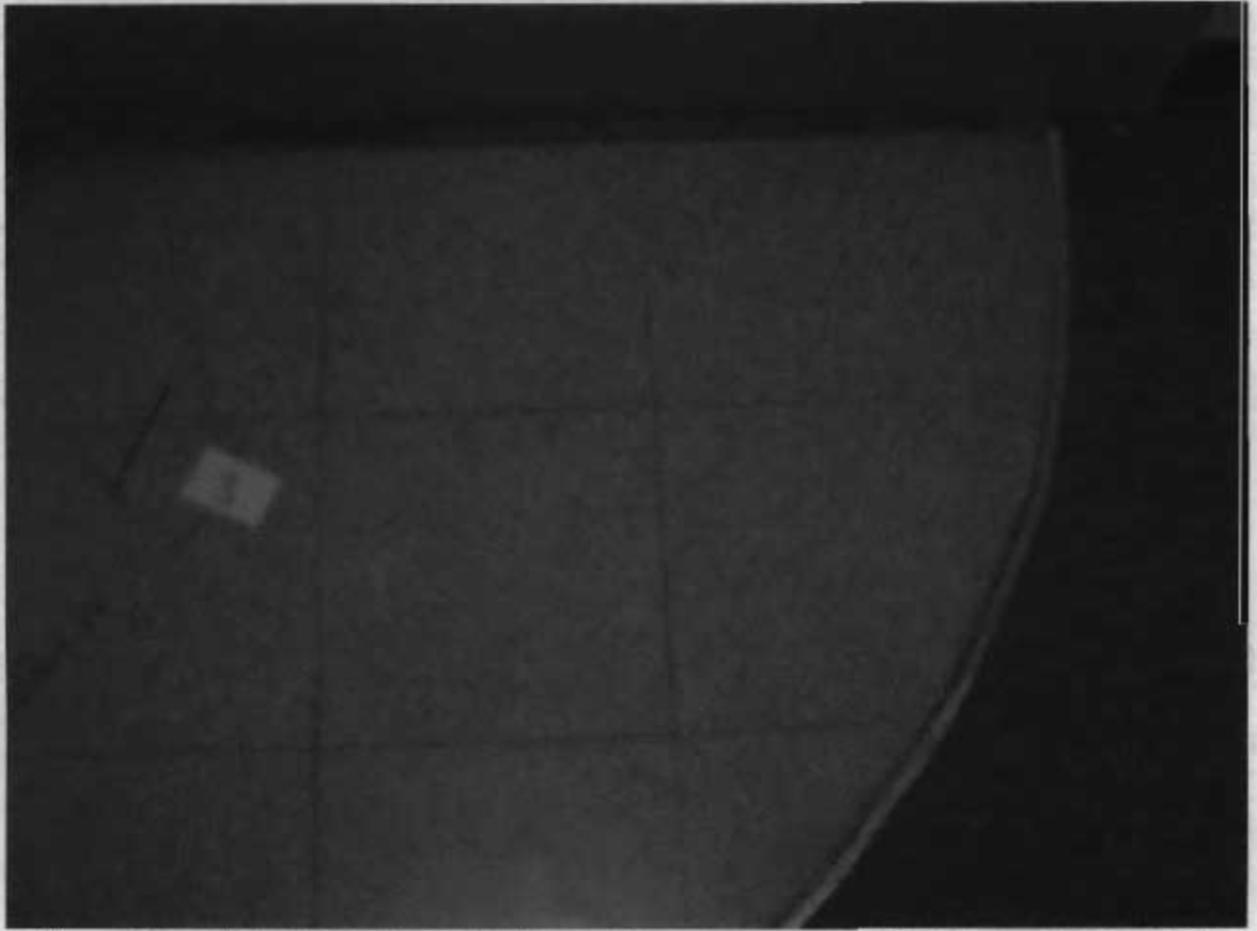
Floor Tile, 9" x 9" green with white w/ black mastic, HA# 14



Floor Tile, 9" x 9" dark green border w/ mastic, HA# 17



Floor Tile, 9" x 9" beige with white and brown streaks, HA# 18



Floor Tile, 9" x 9" beige with heavy brown specs w/ black mastic, HA# 19

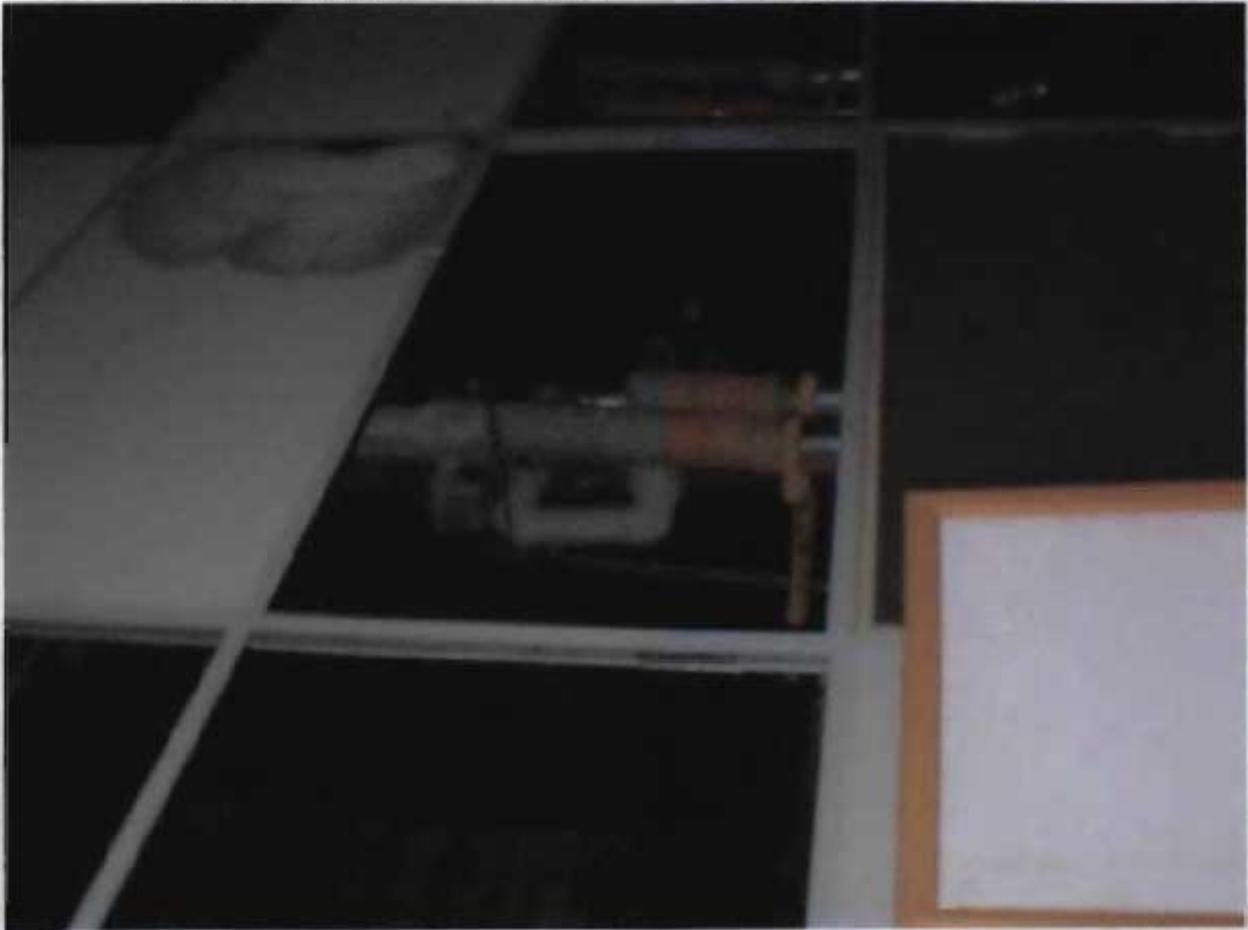


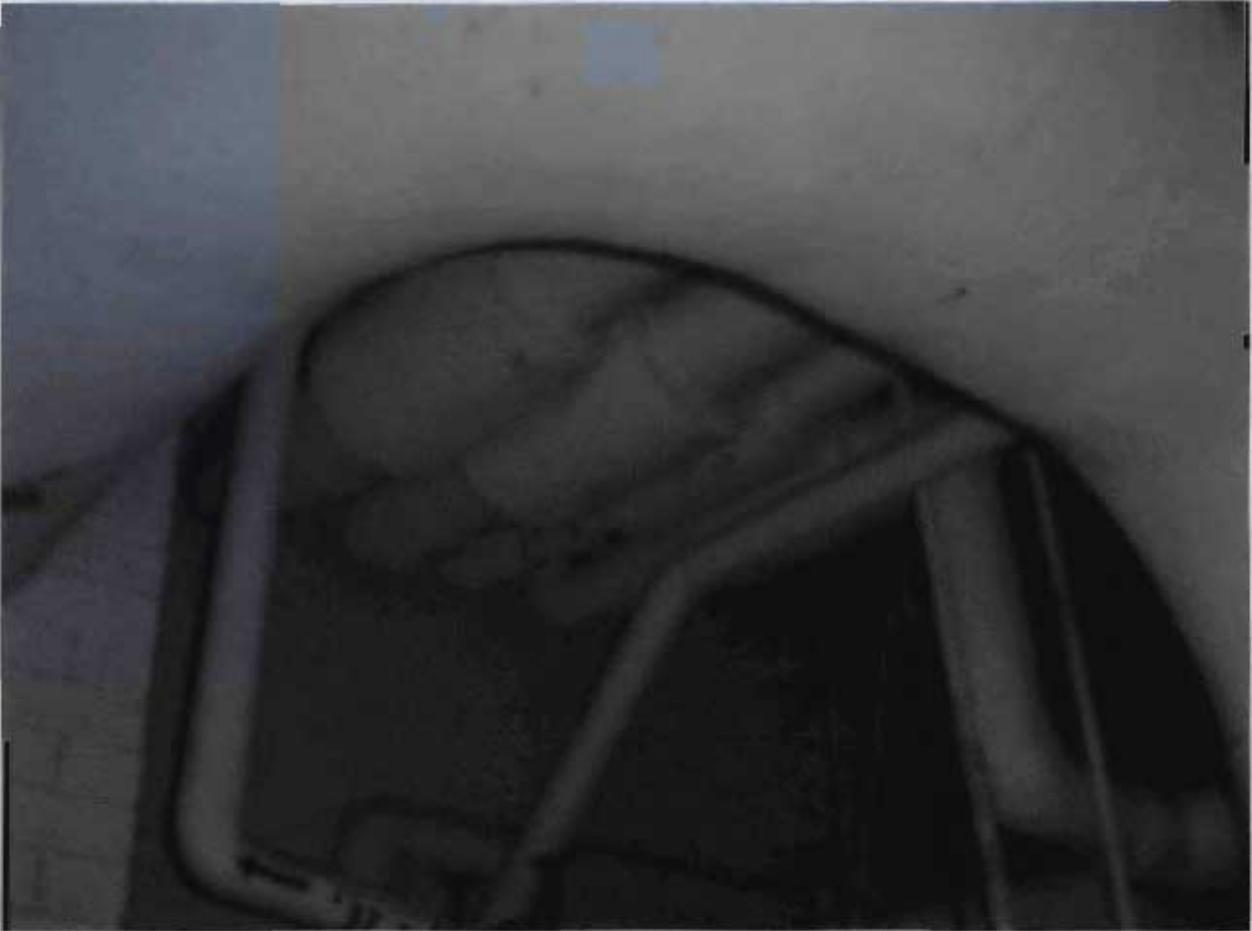
Floor tile, 12" x 12" blue with specs, HA# 20



Pipe Fitting Insulation, overhead in rear of building, HA# 25

Pipe Insulation, overhead, outside of room 140, HA# 28





**Pipe Fitting Insulation, boiler room, HA# 34
No Access to Fan room**



**Pipe Insulation, on domestic water in fan room and boiler room,
HA# 35
No Access to Fan room**



Cold Water Pipe Flange, in boiler room, HA# 37



Tank Insulation on condensate tank, HA# 38



Pipe Insulation, on condensate line, HA# 39



Hot Water Tank Insulation, in boiler room, HA# 40



Tank Insulation, on tank in boiler room, HA#41



Pipe Insulation, on tank, HA# 42



Floor Tile, 9" x 9" black w/ brown adhesive, HA# 45



Floor Tile, 9" x 9" brown w/ brown adhesive, HA# 46



Floor Tile, 9" x 9" red with brown w/ black mastic, HA# 47

APPENDIX D

ACM Laboratory Analysis Results

APPENDIX D

ACM LABORATORY ANALYSIS RESULTS



ANALYTICAL ENVIRONMENTAL SERVICES, INC.
Bulk Sample Summary Report



Client Name: **B A T Associates, Inc.**

AES Job Number: **B9402**

Project Name: **State Dept. Bldg. Charleston Naval Complex**

Thursday, April 25, 2002

Project Number: **971001 task no 45.0**

Client ID	AES ID	Location	Asbestos Mineral Percentage						Comments
			CH	AM	CR	AN	TR	AC	
647-01-01	88159								
647-01-02	88160								
647-01-03	88161								
647-02-01	88162								
647-02-02	88163								
647-02-03	88164								
647-08-01	88165		2						Floor tile contains 2% chrysotile. Bitumen & glue: No asbestos detected.
647-08-02	88166		2						Floor tile contains 2% chrysotile. Bitumen & glue: No asbestos detected.
647-08-03	88167		2						Floor tile contains 2% chrysotile. Bitumen & glue: No asbestos detected.

Note: CH=chrysotile, AM=amosite, CR=crocidolite, AC=actinolite, TR=tremolite, AN=anthophyllite.
 For comments on the samples, see the individual analysis sheets.

PLM is not consistently reliable in detecting small concentrations of asbestos in floor tiles and similar nonfriable materials. Quantitative TEM is currently the only method that can be used to determine the conclusive asbestos content.

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. All percentages given are by visually estimated volume. 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.

Microanalyst:

Arkadiy Gendlin

QC Analyst:

Svetlana Arkhipov



ANALYTICAL ENVIRONMENTAL SERVICES, INC.
Bulk Sample Summary Report



Client Name: **B A T Associates, Inc.**

AES Job Number: **B9402**

Project Name: **State Dept. Bldg. Charleston Naval Complex**

Thursday, April 25, 2002

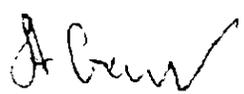
Project Number: **971001 task no 45.0**

Client ID	AES ID	Location	Asbestos Mineral Percentage						Comments
			CH	AM	CR	AN	TR	AC	
647-09-01	88168		3						Mat. B: Floor tile contains 5% chrysotile. Bitumen: No asbestos detected. Mat. A: No asbestos detected.
647-09-02	88169		3						Mat. B: Floor tile contains 5% chrysotile. Bitumen: No asbestos detected. Mat. A: No asbestos detected.
647-09-03	88170		3						Mat. B: Floor tile contains 5% chrysotile. Bitumen: No asbestos detected. Mat. A: No asbestos detected.
647-10-01	88171		5						Floor tile contains 5% chrysotile. Bitumen contains 5% chrysotile.
647-10-02	88172		5						Floor tile contains 5% chrysotile. Bitumen contains 5% chrysotile.
647-10-03	88173		5						Floor tile contains 5% chrysotile. Bitumen contains 5% chrysotile.
647-11-01	88174								
647-11-02	88175								
647-11-03	88176								

Note: CH=chrysotile, AM=amosite, CR=crocidolite, AC=actinolite, TR=tremolite, AN=anthophyllite.
 For comments on the samples, see the individual analysis sheets.

PLM is not consistently reliable in detecting small concentrations of asbestos in floor tiles and similar nonfriable materials. Quantitative TEM is currently the only method that can be used to determine the conclusive asbestos content.

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. All percentages given are by visually estimated volume. 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.

Microanalyst: 
 Arkady Gendlin

QC Analyst: 
 Svetlana Arkhipov



ANALYTICAL ENVIRONMENTAL SERVICES, INC.
Bulk Sample Summary Report



Client Name: **B A T Associates, Inc.**

AES Job Number: **B9402**

Project Name: **State Dept. Bldg. Charleston Naval Complex**

Thursday, April 25, 2002

Project Number: **971001 task no 45.0**

Client ID	AES ID	Location	Asbestos Mineral Percentage						Comments
			CH	AM	CR	AN	TR	AC	
647-25-01	88177		<1						Layer #2 contains 3% chrysotile. Layer #1: No asbestos detected.
647-25-02	88178		<1						Layer #2 contains 3% chrysotile. Layer #1: No asbestos detected.
647-25-03	88179		<1						Layer #2 contains 3% chrysotile. Layer #1: No asbestos detected.
647-26-01	90086								Sample not submitted.
647-26-02	90087								Sample not submitted.
647-26-03	90088								Sample not submitted.
647-31-01	88180								Paint included as binder.
647-31-02	88181								Paint included as binder.
647-31-03	88182								Paint included as binder.

Note: CH=chrysotile, AM=amosite, CR=crocidolite, AC=actinolite, TR=tremolite, AN=anthophyllite.
 For comments on the samples, see the individual analysis sheets.

PLM is not consistently reliable in detecting small concentrations of asbestos in floor tiles and similar nonfriable materials. Quantitative TEM is currently the only method that can be used to determine the conclusive asbestos content.

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. All percentages given are by visually estimated volume. 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.

Microanalyst: 
 Arkadiy Gendlin

QC Analyst: 
 Svetlana Arkhipov



ANALYTICAL ENVIRONMENTAL SERVICES, INC.
Bulk Sample Summary Report

NVLAQ

Client Name: **B A T Associates, Inc.**

AES Job Number: **B9402**

Project Name: **State Dept. Bldg. Charleston Naval Complex**

Thursday, April 25, 2002

Project Number: **971001 task no 45.0**

Client ID	AES ID	Location	Asbestos Mineral Percentage						Comments
			CH	AM	CR	AN	TR	AC	
647-32-01	88183		5						Floor tile contains 5% chrysotile. Bitumen contains 3% chrysotile.
647-32-02	88184		5						Floor tile contains 5% chrysotile. Bitumen contains 3% chrysotile.
647-32-03	88185		5						Floor tile contains 5% chrysotile. Bitumen contains 3% chrysotile.
647-QC-01	88186								Paint included as binder.
647-QC-02	88187		5						Floor tile contains 5% chrysotile. Bitumen contains 3% chrysotile.
647-QC-03	88188		5						Floor tile contains 5% chrysotile. Bitumen contains 5% chrysotile.

Note: CH=chrysotile, AM=amosite, CR=crocidolite, AC=actinolite, TR=tremolite, AN=anthophyllite.
 For comments on the samples, see the individual analysis sheets.

PLM is not consistently reliable in detecting small concentrations of asbestos in floor tiles and similar nonfriable materials. Quantitative TEM is currently the only method that can be used to determine the conclusive asbestos content.

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. All percentages given are by visually estimated volume. 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.

Microanalyst:

Arkady Gendin

QC Analyst:

Svetlana Arkhipov



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

AES Job Number: **B9402**
 Page 1 of 33 Total Samples
 Thursday, April 25, 2002



BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc.
 Project Name: State Dept. Bldg. Charleston Naval Comple:Project Number: 971001 task no 45.0
 Client Sample ID: 647-01-01 AES Lab ID: 88159
 Location:

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:	2	Glue:	
Animal Hair:		Binders:	49
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:
 Arkady Gendlin

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.



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

AES Job Number: **B9402**
 Page 2 of 33 Total Samples
 Thursday, April 25, 2002



BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc.
 Project Name: State Dept. Bldg. Charleston Naval Comple:Project Number: 971001 task no 45.0
 Client Sample ID: 647-01-02 AES Lab ID: 88160
 Location:

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:	2
Animal Hair:	
Antigorite:	

OTHERS	
Aluminum:	
Bitumen:	3
Resilient Material:	
Glue:	
Binders:	49

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.

Microanalysi:
 Arkadiy Gendlin

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.



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

AES Job Number: B9402
 Page 3 of 33 Total Samples
 Thursday, April 25, 2002



BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc.
 Project Name: State Dept. Bldg. Charleston Naval Comple:Project Number: 971001 task no 45.0
 Client Sample ID: 647-01-03 AES Lab ID: 88161
 Location:

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:	

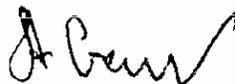
NON-ASBESTOS FIBERS	
Synthetics:	1
Mineral Wool:	
Fiberglass:	
Cellulose:	2
Animal Hair:	
Antigorite:	

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

OTHERS	
Aluminum:	
Bitumen:	3
Resilient Material:	
Glue:	
Binders:	49

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: 
 Arkadiy Gendlin

QCAAnalyst: 
 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.



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

AES Job Number: **B9402**
 Page 4 of 33 Total Samples
 Thursday, April 25, 2002



BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc.
 Project Name: State Dept. Bldg. Charleston Naval Comple:Project Number: 971001 task no 45.0
 Client Sample ID: 647-02-01 AES Lab ID: 88162
 Location:

Sample Description: Light gray 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:	1
Fiberglass:		Resilient Material:	
Cellulose:	1	Glue:	
Animal Hair:		Binders:	52
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:

Arkadiy Gendlin

QCAlyst:

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.



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

AES Job Number: **B9402**
 Page 5 of 33 Total Samples
 Thursday, April 25, 2002



BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc.
 Project Name: State Dept. Bldg. Charleston Naval Comple:Project Number: 971001 task no 45.0
 Client Sample ID: 647-02-02 AES Lab ID: 88163
 Location:

Sample Description: Light gray 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:	<1
Fiberglass:		Resilient Material:	
Cellulose:	1	Glue:	
Animal Hair:		Binders:	53
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:
 Arkadiy Gendlin

QCAAnalyst:
 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.



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

AES Job Number: **B9402**
 Page 6 of 33 Total Samples
 Thursday, April 25, 2002



BULK SAMPLE ANALYSIS

Client Name: **B A T Associates, Inc.**
 Project Name: **State Dept. Bldg. Charleston Naval Comple:Project Number: 971001 task no 45.0**
 Client Sample ID: **647-02-03** AES Lab ID: **88164**
 Location:

Sample Description: Light gray 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:	<1
Fiberglass:		Resilient Material:	
Cellulose:	1	Glue:	
Animal Hair:		Binders:	53
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:
 Arkadiy Gendlin

QCAlyst:
 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.



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

AES Job Number: B9402
 Page 7 of 33 Total Samples
 Thursday, April 25, 2002



BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc.
 Project Name: State Dept. Bldg. Charleston Naval Comple:Project Number: 971001 task no 45.0
 Client Sample ID: 647-08-01 AES Lab ID: 88165
 Location:

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

All percentages given below are visually estimated by volume

ASBESTOS FIBERS	
Chrysotile:	2
Amosite:	
Crocidolite:	
Anthophyllite:	
Tremolite:	
Actinolite:	

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

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

OTHERS	
Aluminum:	
Bitumen:	1
Resilient Material:	
Glue:	3
Binders:	48

COMMENTS: Floor tile contains 2% chrysotile. Bitumen & glue: No asbestos detected.

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:
 Arkadiy Gendlin

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.



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

AES Job Number: **B9402**
 Page 8 of 33 Total Samples
 Thursday, April 25, 2002



BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc.
 Project Name: State Dept. Bldg. Charleston Naval Comple: Project Number: 971001 task no 45.0
 Client Sample ID: 647-08-02 AES Lab ID: 88166
 Location:

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

All percentages given below are visually estimated by volume

ASBESTOS FIBERS		NON-FIBROUS MATERIALS	
Chrysotile:	2	Vermiculite:	
Amosite:		Biotite:	
Crocidolite:		Mica:	
Anthophyllite:		Perlite:	
Tremolite:		Aggregates:	45
Actinolite:		Styrofoam:	
NON-ASBESTOS FIBERS		OTHERS	
Synthetics:		Aluminum:	
Mineral Wool:		Bitumen:	1
Fiberglass:		Resilient Material:	
Cellulose:	1	Glue:	3
Animal Hair:		Binders:	48
Antigorite:			

COMMENTS: Floor tile contains 2% chrysotile. Bitumen & glue: No asbestos detected.

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:

Arkadiy Gendlin

QCAAnalyst:

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.



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

AES Job Number: **B9402**
 Page 9 of 33 Total Samples
 Thursday, April 25, 2002



BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc.
 Project Name: State Dept. Bldg. Charleston Naval Comple:Project Number: 971001 task no 45.0
 Client Sample ID: 647-08-03 AES Lab ID: 88167
 Location:

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

All percentages given below are visually estimated by volume

ASBESTOS FIBERS		NON-FIBROUS MATERIALS	
Chrysotile:	2	Vermiculite:	
Amosite:		Biotite:	
Crocidolite:		Mica:	
Anthophyllite:		Perlite:	
Tremolite:		Aggregates:	45
Actinolite:		Styrofoam:	
NON-ASBESTOS FIBERS		OTHERS	
Synthetics:		Aluminum:	
Mineral Wool:		Bitumen:	1
Fiberglass:		Resilient Material:	
Cellulose:	1	Glue:	3
Animal Hair:		Binders:	48
Antigorite:			

COMMENTS: Floor tile contains 2% chrysotile. Bitumen & glue: No asbestos detected.

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:

Arkadiy Gendlin

QCAAnalyst:

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.



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

AES Job Number: B9402
 Page 10 of 33 Total Samples
 Thursday, April 25, 2002



BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc.
 Project Name: State Dept. Bldg. Charleston Naval Comple:Project Number: 971001 task no 45.0
 Client Sample ID: 647-09-01 AES Lab ID: 88168
 Location:

Sample Description: Mat. A: Dark gray hard compact partly granular with fibers and bitumen; 2) Mat. B: Gray hard compact partly granular with fibers and bitumen.

All percentages given below are visually estimated by volume

ASBESTOS FIBERS	
Chrysotile:	3
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:	2
Resilient Material:	
Glue:	
Binders:	48

COMMENTS: Mat. B: Floor tile contains 5% chrysotile. Bitumen: No asbestos detected. Mat. A: No asbestos detected.

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:

Arkadiy Gendlin

QCAlyst:

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.



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

AES Job Number: **B9402**
 Page 11 of 33 Total Samples
 Thursday, April 25, 2002



BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc.
 Project Name: State Dept. Bldg. Charleston Naval Comple:Project Number: 971001 task no 45.0
 Client Sample ID: 647-09-02 AES Lab ID: 88169
 Location:

Sample Description: Mat. A: Dark gray hard compact partly granular with fibers and bitumen; 2) Mat. B: Gray hard compact partly granular with fibers and bitumen.

All percentages given below are visually estimated by volume

ASBESTOS FIBERS	
Chrysotile:	3
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:	2
Resilient Material:	
Glue:	
Binders:	48

COMMENTS: Mat. B: Floor tile contains 5% chrysotile. Bitumen: No asbestos detected. Mat. A: No asbestos detected.

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:
 Arkadiy Gendlin

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.



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

AES Job Number: **B9402**
 Page 12 of 33 Total Samples
 Thursday, April 25, 2002



BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc.
 Project Name: State Dept. Bldg. Charleston Naval Comple:Project Number: 971001 task no 45.0
 Client Sample ID: 647-09-03 AES Lab ID: 88170
 Location:

Sample Description: Mat. A: Dark gray hard compact partly granular with fibers and bitumen; 2) Mat. B: Gray hard compact partly granular with fibers and bitumen.

All percentages given below are visually estimated by volume

ASBESTOS FIBERS		NON-FIBROUS MATERIALS	
Chrysotile:	3	Vermiculite:	
Amosite:		Biotite:	
Crocidolite:		Mica:	
Anthophyllite:		Perlite:	
Tremolite:		Aggregates:	45
Actinolite:		Styrofoam:	
NON-ASBESTOS FIBERS		OTHERS	
Synthetics:	1	Aluminum:	
Mineral Wool:		Bitumen:	2
Fiberglass:		Resilient Material:	
Cellulose:	1	Glue:	
Animal Hair:		Binders:	48
Artigorite:			

COMMENTS: Mat. B: Floor tile contains 5% chrysotile. Bitumen: No asbestos detected. Mat. A: No asbestos detected.

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:
 Arkadiy Gendlin

QCAlyst:
 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.



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

AES Job Number: B9402
 Page 13 of 33 Total Samples
 Thursday, April 25, 2002



BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc.
 Project Name: State Dept. Bldg. Charleston Naval Comple:Project Number: 971001 task no 45.0
 Client Sample ID: 647-10-01 AES Lab ID: 88171
 Location:

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

All percentages given below are visually estimated by volume

ASBESTOS FIBERS	
Chrysotile:	5
Amosite:	
Crocidolite:	
Anthophyllite:	
Tremolite:	
Actinolite:	

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

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

OTHERS	
Aluminum:	
Bitumen:	<1
Resilient Material:	
Glue:	
Binders:	49

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:
 Arkady Gendlin

QCAAnalyst:
 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.



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

AES Job Number: **B9402**
 Page 14 of 33 Total Samples
 Thursday, April 25, 2002



BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc.
 Project Name: State Dept. Bldg. Charleston Naval Comple: Project Number: 971001 task no 45.0
 Client Sample ID: 647-10-02 AES Lab ID: 88172
 Location:

Sample Description: Pink 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:		Aluminum:	
Mineral Wool:		Bitumen:	<1
Fiberglass:		Resilient Material:	
Cellulose:	1	Glue:	
Animal Hair:		Binders:	49
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:

Arkadiy Gendlin

QCAAnalyst:

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.



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

AES Job Number: B9402
 Page 15 of 33 Total Samples
 Thursday, April 25, 2002



BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc.
 Project Name: State Dept. Bldg. Charleston Naval Comple:Project Number: 971001 task no 45.0
 Client Sample ID: 647-10-03 AES Lab ID: 88173
 Location:

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

All percentages given below are visually estimated by volume

ASBESTOS FIBERS

Chrysotile:	5
Amosite:	
Crocidolite:	
Anthophyllite:	
Tremolite:	
Actinolite:	

NON-ASBESTOS FIBERS

Synthetics:	
Mineral Wool:	
Fiberglass:	
Cellulose:	1
Animal Hair:	
Antigorite:	

NON-FIBROUS MATERIALS

Vermiculite:	
Biotite:	
Mica:	
Perlite:	
Aggregates:	45
Styrofoam:	

OTHERS

Aluminum:	
Bitumen:	<1
Resilient Material:	
Glue:	
Binders:	49

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:
 Arkadiy Gendlin

QCAAnalyst:
 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.



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

AES Job Number: **B9402**
 Page 16 of 33 Total Samples
 Thursday, April 25, 2002



BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc.
 Project Name: State Dept. Bldg. Charleston Naval Comple:Project Number: 971001 task no 45.0
 Client Sample ID: 647-11-01 AES Lab ID: 88174
 Location:

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:	53
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:

Arkadiy Gendlin

QCAlyst:

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.



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

AES Job Number: **B9402**
 Page 17 of 33 Total Samples
 Thursday, April 25, 2002



BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc.
 Project Name: State Dept. Bldg. Charleston Naval Comple:Project Number: 971001 task no 45.0
 Client Sample ID: 647-11-02 AES Lab ID: 88175
 Location:

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:	53
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:
 Arkadiy Gendlin

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.



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

AES Job Number: B9402
 Page 18 of 33 Total Samples
 Thursday, April 25, 2002



BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc.
 Project Name: State Dept. Bldg. Charleston Naval Comple:Project Number: 971001 task no 45.0
 Client Sample ID: 647-11-03 AES Lab ID: 88176
 Location:

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:	53
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:
 Arkadiy Gendlin

QCAAnalyst:
 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.



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

AES Job Number: **B9402**
 Page 19 of 33 Total Samples
 Thursday, April 25, 2002



BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc.
 Project Name: State Dept. Bldg. Charleston Naval Comple:Project Number: 971001 task no 45.0
 Client Sample ID: 647-25-01 AES Lab ID: 88177
 Location:

Sample Description: Layered: 1) Gray semi-hard partly granular to bitumenous; 2) Black semi-hard bitumenous with fibers.

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:	20
Styrofoam:	

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

OTHERS	
Aluminum:	
Bitumen:	70
Resilient Material:	
Glue:	
Binders:	5

COMMENTS: Layer #2 contains 3% chrysotile. Layer #1: No asbestos detected.

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:
 Arkadiy Gendlin

QCAlyst:
 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.



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

AES Job Number: **B9402**
 Page 20 of 33 Total Samples
 Thursday, April 25, 2002



BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc.
 Project Name: State Dept. Bldg. Charleston Naval Comple: Project Number: 971001 task no 45.0
 Client Sample ID: 647-25-02 AES Lab ID: 88178
 Location:

Sample Description: Layered: 1) Gray semi-hard partly granular to bitumenous; 2) Black semi-hard bitumenous with fibers.

All percentages given below are visually estimated by volume

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

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

NON-FIBROUS MATERIALS	
Vermiculite:	
Biotite:	
Mica:	
Perlite:	
Aggregates:	20
Styrofoam:	

OTHERS	
Aluminum:	
Bitumen:	70
Resilient Material:	
Glue:	
Binders:	5

COMMENTS: Layer #2 contains 3% chrysotile. Layer #1: No asbestos detected.

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:
 Arkadiy Gendlin

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.



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

AES Job Number: **B9402**
 Page 21 of 33 Total Samples
 Thursday, April 25, 2002



BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc.
 Project Name: State Dept. Bldg. Charleston Naval Comple:Project Number: 971001 task no 45.0
 Client Sample ID: 647-25-03 AES Lab ID: 88179
 Location:

Sample Description: Layered: 1) Gray semi-hard partly granular to bitumenous; 2) Black semi-hard bitumenous with fibers.

All percentages given below are visually estimated by volume

ASBESTOS FIBERS

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

NON-ASBESTOS FIBERS

Synthetics:	
Mineral Wool:	
Fiberglass:	
Cellulose:	5
Animal Hair:	
Antigorite:	

NON-FIBROUS MATERIALS

Vermiculite:	
Biotite:	
Mica:	
Perlite:	
Aggregates:	20
Styrofoam:	

OTHERS

Aluminum:	
Bitumen:	70
Resilient Material:	
Glue:	
Binders:	5

COMMENTS: Layer #2 contains 3% chrysotile. Layer #1: No asbestos detected.

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:

Arkadiy Gendlin

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.



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

AES Job Number: **B9402**
 Page 22 of 33 Total Samples
 Thursday, April 25, 2002



BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc.
 Project Name: State Dept. Bldg. Charleston Naval Comple:Project Number: 971001 task no 45.0
 Client Sample ID: 647-26-01 AES Lab ID: 90086
 Location:

Sample Description:

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:	Resilient Material:
Cellulose:	Glue:
Animal Hair:	Binders:
Antigorite:	

COMMENTS: Sample not submitted.

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:

Arkadiy Gendlin

QCAAnalyst:

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.



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

AES Job Number: **B9402**
 Page 23 of 33 Total Samples
 Thursday, April 25, 2002



BULK SAMPLE ANALYSIS

Client Name: **B A T Associates, Inc.**
 Project Name: **State Dept. Bldg. Charleston Naval Comple:Project Number: 971001 task no 45.0**
 Client Sample ID: **647-26-02** AES Lab ID: **90087**
 Location:

Sample Description:

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:	
Animal Hair:	
Antigorite:	

NON-FIBROUS MATERIALS

Vermiculite:	
Biotite:	
Mica:	
Perlite:	
Aggregates:	
Styrofoam:	

OTHERS

Aluminum:	
Bitumen:	
Resilient Material:	
Glue:	
Binders:	

COMMENTS: Sample not submitted.

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:

Arkadiy Gendlin

QCAlyst:

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.



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

AES Job Number: **B9402**
 Page 24 of 33 Total Samples
 Thursday, April 25, 2002



BULK SAMPLE ANALYSIS

Client Name: **B A T Associates, Inc.**
 Project Name: **State Dept. Bldg. Charleston Naval Comple:Project Number: 971001 task no 45.0**
 Client Sample ID: **647-26-03** AES Lab ID: **90088**
 Location:

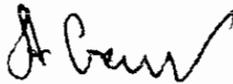
Sample Description:

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:		Resilient Material:	
Cellulose:		Glue:	
Animal Hair:		Binders:	
Antigorite:			

COMMENTS: Sample not submitted.

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: 
 Arkadiy Gendlin

QCAlyst: 
 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.



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

AES Job Number: B9402
 Page 25 of 33 Total Samples
 Thursday, April 25, 2002



BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc.
 Project Name: State Dept. Bldg. Charleston Naval Comple:Project Number: 971001 task no 45.0
 Client Sample ID: 647-31-01 AES Lab ID: 88180
 Location:

Sample Description: Dark gray to beige hard compact partly granular with fibers, bitumen 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:	2
Fiberglass:		Resilient Material:	
Cellulose:	2	Glue:	
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:

Arkadiy Gendlin

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.



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

AES Job Number: B9402
 Page 26 of 33 Total Samples
 Thursday, April 25, 2002



BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc.
 Project Name: State Dept. Bldg. Charleston Naval Comple: Project Number: 971001 task no 45.0
 Client Sample ID: 647-31-02 AES Lab ID: 88181
 Location:

Sample Description: Dark gray to beige hard compact partly granular with fibers, bitumen 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:	2
Fiberglass:		Resilient Material:	
Cellulose:	2	Glue:	
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:

Arkadiy Gendlin

QCAlyst:

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.



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

AES Job Number: **B9402**
 Page 27 of 33 Total Samples
 Thursday, April 25, 2002



BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc.
 Project Name: State Dept. Bldg. Charleston Naval Comple:Project Number: 971001 task no 45.0
 Client Sample ID: 647-31-03 AES Lab ID: 88182
 Location:

Sample Description: Dark gray to beige hard compact partly granular with fibers, bitumen 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:	2
Animal Hair:	
Antigorite:	

NON-FIBROUS MATERIALS

Vermiculite:	
Biotite:	
Mica:	
Perlite:	
Aggregates:	45
Styrofoam:	

OTHERS

Aluminum:	
Bitumen:	2
Resilient Material:	
Glue:	
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:

Arkadiy Gendlin

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.



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

AES Job Number: **B9402**
 Page 28 of 33 Total Samples
 Thursday, April 25, 2002



BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc.
 Project Name: State Dept. Bldg. Charleston Naval Comple:Project Number: 971001 task no 45.0
 Client Sample ID: 647-32-01 AES Lab ID: 88183
 Location:

Sample Description: Green 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:		Aluminum:	
Mineral Wool:		Bitumen:	2
Fiberglass:		Resilient Material:	
Cellulose:	1	Glue:	
Animal Hair:		Binders:	47
Antigorite:			

COMMENTS: Floor tile contains 5% chrysotile. Bitumen contains 3% 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:
 Arkadiy Gendlin

QCAlyst:
 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.



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

AES Job Number: **B9402**
 Page 29 of 33 Total Samples
 Thursday, April 25, 2002



BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc.
 Project Name: State Dept. Bldg. Charleston Naval Comple: Project Number: 971001 task no 45.0
 Client Sample ID: 647-32-02 AES Lab ID: 88184
 Location:

Sample Description: Green 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:		Aluminum:	
Mineral Wool:		Bitumen:	2
Fiberglass:		Resilient Material:	
Cellulose:	1	Glue:	
Animal Hair:		Binders:	47
Antigorite:			

COMMENTS: Floor tile contains 5% chrysotile. Bitumen contains 3% 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:
 Arkady Gendlin

QCAlyst:
 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.



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

AES Job Number: **B9402**
 Page 30 of 33 Total Samples
 Thursday, April 25, 2002



BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc.
 Project Name: State Dept. Bldg. Charleston Naval Comple:Project Number: 971001 task no 45.0
 Client Sample ID: 647-32-03 AES Lab ID: 88185
 Location:

Sample Description: Green 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:		Aluminum:	
Mineral Wool:		Bitumen:	2
Fiberglass:		Resilient Material:	
Cellulose:	1	Glue:	
Animal Hair:		Binders:	47
Antigorite:			

COMMENTS: Floor tile contains 5% chrysotile. Bitumen contains 3% 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:
 Arkadiy Gendlin

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.



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

AES Job Number: **B9402**
 Page 31 of 33 Total Samples
 Thursday, April 25, 2002



BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc.
 Project Name: State Dept. Bldg. Charleston Naval Comple: Project Number: 971001 task no 45.0
 Client Sample ID: 647-QC-01 AES Lab ID: 88186
 Location:

Sample Description: Dark gray to beige 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:	2
Fiberglass:		Resilient Material:	
Cellulose:	2	Glue:	
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:

Arkadiy Gendlin

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.



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

AES Job Number: B9402
 Page 32 of 33 Total Samples
 Thursday, April 25, 2002



BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc.
 Project Name: State Dept. Bldg. Charleston Naval Comple:Project Number: 971001 task no 45.0
 Client Sample ID: 647-QC-02 AES Lab ID: 88187
 Location:

Sample Description: Green hard compact partly granular with fibers and btumen.

All percentages given below are visually estimated by volume

ASBESTOS FIBERS	
Chrysotile:	5
Amosite:	
Crocidolite:	
Anthophyllite:	
Tremolite:	
Actinolite:	

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

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

OTHERS	
Aluminum:	
Bitumen:	<1
Resilient Material:	
Glue:	
Binders:	49

COMMENTS: Floor tile contains 5% chrysotile. Bitumen contains 3% 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:
 Arkadiy Gendlin

QCAlyst:
 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.



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

AES Job Number: **B9402**
 Page 33 of 33 Total Samples
 Thursday, April 25, 2002



BULK SAMPLE ANALYSIS

Client Name: B A T Associates, Inc.
 Project Name: State Dept. Bldg. Charleston Naval Comple: Project Number: 971001 task no 45.0
 Client Sample ID: 647-QC-03 AES Lab ID: 88188
 Location:

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

All percentages given below are visually estimated by volume

ASBESTOS FIBERS	
Chrysotile:	5
Amosite:	
Crocidolite:	
Anthophyllite:	
Tremolite:	
Actinolite:	

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

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

OTHERS	
Aluminum:	
Bitumen:	<1
Resilient Material:	
Glue:	
Binders:	49

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:

Arkadiy Gendlin

QCAlyst:

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.

BAT

BAT Associates, Inc

5151 Brook Hollow Pkwy., Suite 250
Norcross, GA 30071
Phone: (770) 242-3908
Fax (770) 242-3912

CHAIN OF CUSTODY FORM

BAT PROJECT CONTACT: Steven Adams / Douglas J. Milton

BAT JOB NAME: State Dept Buildings - Charleston Naval Complex, Charleston, SC
BAT JOB NO. 971001 TASK NO. 45.0

ANALYSIS REQUESTED PLM PCM AAS For Lead Content OTHER

CHECK ONE: ROUTINE AS SOON AS POSSIBLE
 ROUTINE - FAX (HANDWRITTEN) AS SOON AS POSSIBLE
 RUSH - FAX (HANDWRITTEN) AS SOON AS POSSIBLE

SAMPLE ID		SAMPLE ID	
1.	647-03-01	16.	647-26-01
2.	647-03-02	17.	647-26-02
3.	647-03-03	18.	647-26-03
4.	647-04-01	19.	647-34-01
5.	647-04-02	20.	647-34-02
	647-04-03	21.	647-34-03
7.	647-05-01	22.	
8.	647-05-02	23.	
9.	647-05-03	24.	
10.	647-06-01	25.	
11.	647-06-02	26.	
12.	647-06-03	27.	
13.	647-07-01	28.	
14.	647-07-02	29.	
15.	647-07-03	30.	

SPECIAL INSTRUCTIONS:
1. ACM that is determined to contain less than 1% by PLM shall be verified by PLM point counting.
2. Stop at first positive

Relinquished by: *Steven C. Adams* Received by: *A. GEN 5/7/02 11:00*

Date: 05/07/02 Time: Date: Time:

9402

BAT
BAT Associates, Inc

5151 Brook Hollow Pkwy., Suite 250
Norcross, GA 30071
Phone: (770) 242-3908
Fax (770) 242-3912

CHAIN OF CUSTODY FORM

BAT PROJECT CONTACT: Steven Adams / Douglas J. Milton

BAT JOB NAME: State Dept Buildings - Charleston Naval Complex, Charleston, SC
BAT JOB NO. 971001 TASK NO. 45.0

ANALYSIS REQUESTED PLM PCM AAS For Lead Content OTHER

CHECK ONE: ROUTINE AS SOON AS POSSIBLE
 ROUTINE - FAX (HANDWRITTEN) AS SOON AS POSSIBLE
 RUSH - FAX (HANDWRITTEN) AS SOON AS POSSIBLE

SAMPLE ID	SAMPLE ID
1. 647.01.01	16. 647.11.01
2. 647.01.02	17. 647.11.02
3. 647.01.03	18. 647.11.03
4. 647.02.01	19. 647.25.01
5. 647.02.02	20. 647.25.02
6. 647.02.03	21. 647.25.03
7. 647.08.01	22. 647.26.01
8. 647.08.02	23. 647.26.02
9. 647.08.03	24. 647.26.03
10. 647.09.01	25. 647.31.01
11. 647.09.02	26. 647.31.02
12. 647.09.03	27. 647.31.03
13. 647.10.01	28. 647.32.01
14. 647.10.02	29. 647.32.02
15. 647.10.03	30. 647.32.03

SPECIAL INSTRUCTIONS:
1. ACM that is determined to contain less than 1% by PLM shall be verified by PLM point counting.
2. Stop at first positive

Relinquished by: Steven Adams
Received by: [Signature]
Date: 4/12/02 Time: [Blank]
Date: 4/12/02 Time: 12:27

9402

BAT
BAT Associates, Inc

5151 Brook Hollow Pkwy., Suite 250
Norcross, GA 30071
Phone: (770) 242-3908
Fax (770) 242-3912

CHAIN OF CUSTODY FORM

BAT PROJECT CONTACT: Steven Adams / Douglas J. Milton

BAT JOB NAME: State Dept Buildings - Charleston Naval Complex, Charleston, SC
BAT JOB NO. 971001 TASK NO. 45.0

ANALYSIS REQUESTED PLM PCM AAS For Lead Content OTHER

CHECK ONE: ROUTINE
 ROUTINE - FAX (HANDWRITTEN) AS SOON AS POSSIBLE
 RUSH - FAX (HANDWRITTEN) AS SOON AS POSSIBLE

SAMPLE ID	SAMPLE ID
1. 647-QC-01	16.
2. 647-QC-02	17.
3. 647-QC-03	18.
4.	19.
5.	20.
6.	21.
7.	22.
8.	23.
9.	24.
10.	25.
11.	26.
12.	27.
13.	28.
14.	29.
15.	30.

SPECIAL INSTRUCTIONS:

- ACM that is determined to contain less than 1% by PLM shall be verified by PLM point counting.
- Stop at first positive

Relinquished by: Steven Adams
Date: 4/12/02 Time:

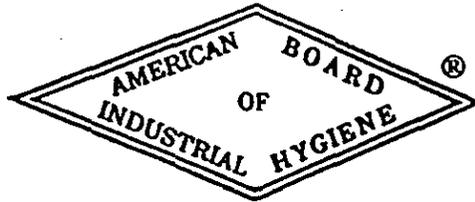
Received by: Andrew Lawrence
Date: 4/12/02 Time: 10:27

APPENDIX E
PERSONNEL AND LABORATORY ACCREDITATIONS

APPENDIX E

Personnel and Laboratory Accreditations

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 Craun".

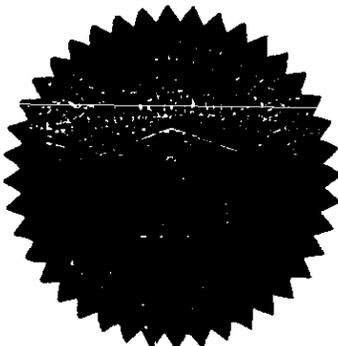
Chair ABIH

CP 7612

certificate
number

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

Secretary ABIH



The Environmental Institute

Steve Adams

Social Security Number - 129-42-2965

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

April 30, 2002

Course Date

7350

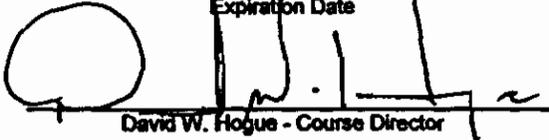
Certificate Number

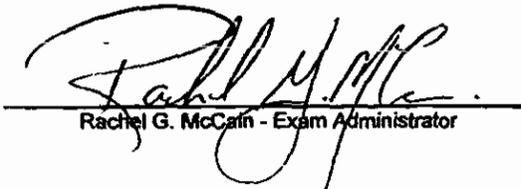
April 30, 2002

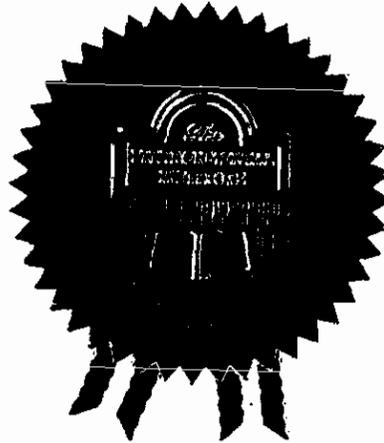
Examination Date

April 29, 2003

Expiration Date


David W. Hogue - Course Director


Rachel G. McCain - Exam Administrator



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

The American Industrial Hygiene Association

is proud to acknowledge that

Analytical Environmental Services, Inc.

Atlanta, GA

has fulfilled the requirements for and has been formally recognized by AIHA
and is technically competent to perform the analyses listed in the following

SCOPE OF ACCREDITATION

INDUSTRIAL HYGIENE

Originally Accredited: 03/01/94

Metals Silica
 Asbestos PCM Asbestos PLM
 Organic Solvents Diffusive Samples

ENVIRONMENTAL LEAD

Originally Accredited: 01/01/95

Paint Chips Air
 Dust Wipes Soil

ENVIRONMENTAL MICROBIOLOGY

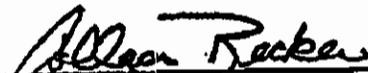
Bacteria
 Fungi

The above named laboratory agrees to perform all analyses listed above in the scope of accreditation according to applicable policy requirements and acknowledges that continued accreditation is dependent on successful participation in the appropriate proficiency testing programs. This laboratory may be contacted to verify the current scope of accreditation, proficiency testing performance and accreditation status. Accreditation by AIHA is not a guarantee of the validity of the data generated by the laboratory.

Laboratory # 100671

Certificate # 803

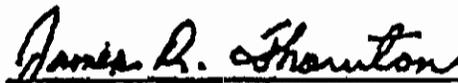
Accreditation Expires: 03/01/03



Colleen Becker

Chair, Analytical Accreditation Board





James R. Thornton, CIH, CSP

President, AIHA

National Institute
of Standards and Technology



National Voluntary
Laboratory Accreditation Program

ISO/IEC GUIDE 25:1990
ISO 9002:1987

Scope of Accreditation



Page: 1 of 1

NVLAP LAB CODE 102082-0

BULK ASBESTOS FIBER ANALYSIS

ANALYTICAL ENVIRONMENTAL SERVICES, INC.

3125 Maegan Drive

Atlanta, GA 30340

Mr. Mehmet Yildirim

Phone: 800-972-4889 Fax: 770-457-8188

NVLAP Code

Designation

180A01

EPA-600/M4-82-020: Interim Method for the Determination of Asbestos in Bulk
Insulation Samples

September 30, 2001

Effective through

David F. Alderman

For the National Institute of Standards and Technology

United States Department of Commerce
National Institute of Standards and Technology

NVLAP[®]

ISO/IEC GUIDE 25:1980
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, 2001

Effective through

David E. Alderman

For the National Institute of Standards and Technology

NVLAP Lab Code: 102082-0