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ASBESTOS-CONTAINING MATERIAL RE-INSPECTION FOR BUILDING 1623 VOLUME 18
CNC CHARLESTON SC
2/15/2000
BAT ASSOCIATES, INC.

Volume 18

**Asbestos-Containing Material Re-inspection
For Building 1623
Charleston Naval Shipyard
Charleston, South Carolina**

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

Prepared for:

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

Prepared by:

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

February 15, 2000

Volume 18

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1.0 EXECUTIVE SUMMARY

BAT Associates, Inc. (BAT) was retained by the U.S. Department of the Navy, Southern Division (SouthDiv), Naval Facilities Engineering Command (NAVFACENGCOM) to perform an asbestos-containing material (ACM) re-inspection of Building 1623 located at the Charleston Naval Shipyard (CNS) in Charleston, South Carolina.

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

No asbestos-containing materials were identified in this building.

2.0 BUILDING INSPECTION INFORMATION FORM

Building Name: Warehouse
Building Number: 1623
Facility: Charleston Naval Shipyard
Building Area (square footage): 15,000
Year Built: 1975
Building Type: Storage
No. of Floors in Building: One
Purpose of ACM Survey: Re-Inspection
Facility Unit Identification Code (UIC): N/A

Building Contact: Mr. Matthew Humphrey, P.E.
Contact's Telephone No.: (843) 200-3187
Building Survey Date(s): January 26, 2000

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

3.0 INTRODUCTION

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

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

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

The results of the re-inspection survey are presented in 23 separate volume reports. This report describes the results for Building 1623.

This re-inspection survey was performed by Mr. Foshi Bell, under the direct supervision of Mr. Douglas J. Milton, CIH, on January 26, 2000. Mr. Bell is an accredited asbestos building inspector. Mr. Milton, a Certified Industrial Hygienist, is an accredited asbestos inspector, management planner, and project designer.

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

The assessment protocol for ACM involved three distinct steps:

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

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

4.0 SAMPLE METHODOLOGY

Representative, randomly selected bulk samples were collected in accordance with the Navy's and AHERA sampling protocol, as described in 40 CFR 763.86, and in accordance with BAT's contract requirements. Bulk samples were collected from homogenous areas (materials) in a manner that minimized any release of airborne asbestos fibers. A homogeneous area (material) is defined as a material uniform in size, color and texture.

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

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

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

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

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

 - a. Surfacing material patches are limited to a maximum of 6 S.F.

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

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

6. *Ceiling or Acoustical Tile*

3 samples

7. *Miscellaneous Friable Material*

3 samples

8. *Non-Friable Material*

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

Minimum of 3 samples.

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

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

6. All necessary data were recorded on the BAT Suspect Material Inventory Form including sample number, sample location, type of suspect material, name of inspector collecting the sample and other relevant information.
7. Samples were then transported to Cape Environmental Management Inc. (CAPE) Asbestos Laboratories in Atlanta, Georgia, for Polarized Light Microscopy (PLM) analysis. The CAPE Asbestos Laboratory participates in the National Voluntary Laboratory Assurance Program (NVLAP) for the analysis of asbestos content in suspect materials. CAPE's NVLAP Laboratory Code is 102111-0.
8. BAT collected duplicate samples during the collection of primary bulk sampling for quality control (QC) purposes. QC samples were collected at ten percent of the bulk sample locations. They were assigned unrelated sample identification numbers and analyzed by Analytical Environmental Services, Inc. (AES). AES participates in the National Voluntary Laboratory Assurance Program (NVLAP) for the analysis of asbestos content in suspect materials. AES's NVLAP Laboratory Code is 102033-0.
9. Upon receipt by the laboratory, the samples were logged in and assigned a unique laboratory identification number. The laboratory analyzed the samples in accordance with 40 CFR 763.87 subpart F. Copies of the laboratory accreditations for both laboratories may be found in Appendix C.

5.0 ASBESTOS INVENTORY AND ASSESSMENT

Table 1.0 describes the suspect ACM identified in and around Building 1623.

Table 1.0
Summary of Identified Suspect ACM

HA No.	Description of Suspect ACM	Location of Suspect ACM	AHERA Category of Material
1	Floor Tile, 12" x 12" beige with yellow and gold w/ brown mastic	Northwest office	N/A

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

6.0 SUMMARY OF SAMPLE ANALYSIS RESULTS

Table 2.0 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 Polarized Light Microscopy (PLM) analysis before the material can be categorized as non-asbestos-containing. If one sample is determined as asbestos-containing using PLM analysis, the entire homogeneous area must be classified asbestos-containing.

Table 2.0
Summary of Sample Analysis Results

HA No.	Sample ID No.	Suspect Material Description	Asbestos Content	Friability
1	1623-1-1, 1623-1-2, 1623-1-3	Floor Tile, 12" x 12" beige with yellow and gold w/ brown mastic	NAD	N/A

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

7.0 RESULTS OF QUALITY CONTROL SAMPLING

The purpose of quality control (QC) sampling was to ensure reproducibility of the primary laboratory analysis results. Duplicate samples were collected for ten percent of the total building samples for QC purposes. BAT designated ten percent of the additional samples that BAT collected during the re-inspection for quality control purposes.

Table 3.0
Validation of Quality Control Sampling

Sample I.D. No.	Primary Laboratory Analysis Results	QC Laboratory Analysis Results
1623-1-QC	NAD	NAD

Notes: QC = Quality Control NAD = No Asbestos Detected

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

8.0 PHYSICAL ASSESSMENT OF IDENTIFIED ACM

The following sections contain a summary of the methodology BAT specialists used to conduct the physical assessment for this building. This methodology was developed in accordance with USEPA AHERA re-inspection requirements contained in 40 CFR Part 763.85.

No physical assessments are required since no asbestos-containing materials were identified in this building.

9.0 HAZARD ASSESSMENT OF IDENTIFIED ACM

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

No hazard assessments are required since no asbestos-containing materials were identified in this building.

10.0 CONCLUSIONS

Inspection of Building 1623 and confirmatory laboratory bulk sample analysis of selected samples identified the following materials with asbestos concentrations greater than one percent.

<u>Identified ACM</u>	<u>Quantity</u>	<u>NESHAP Category</u>
None.		

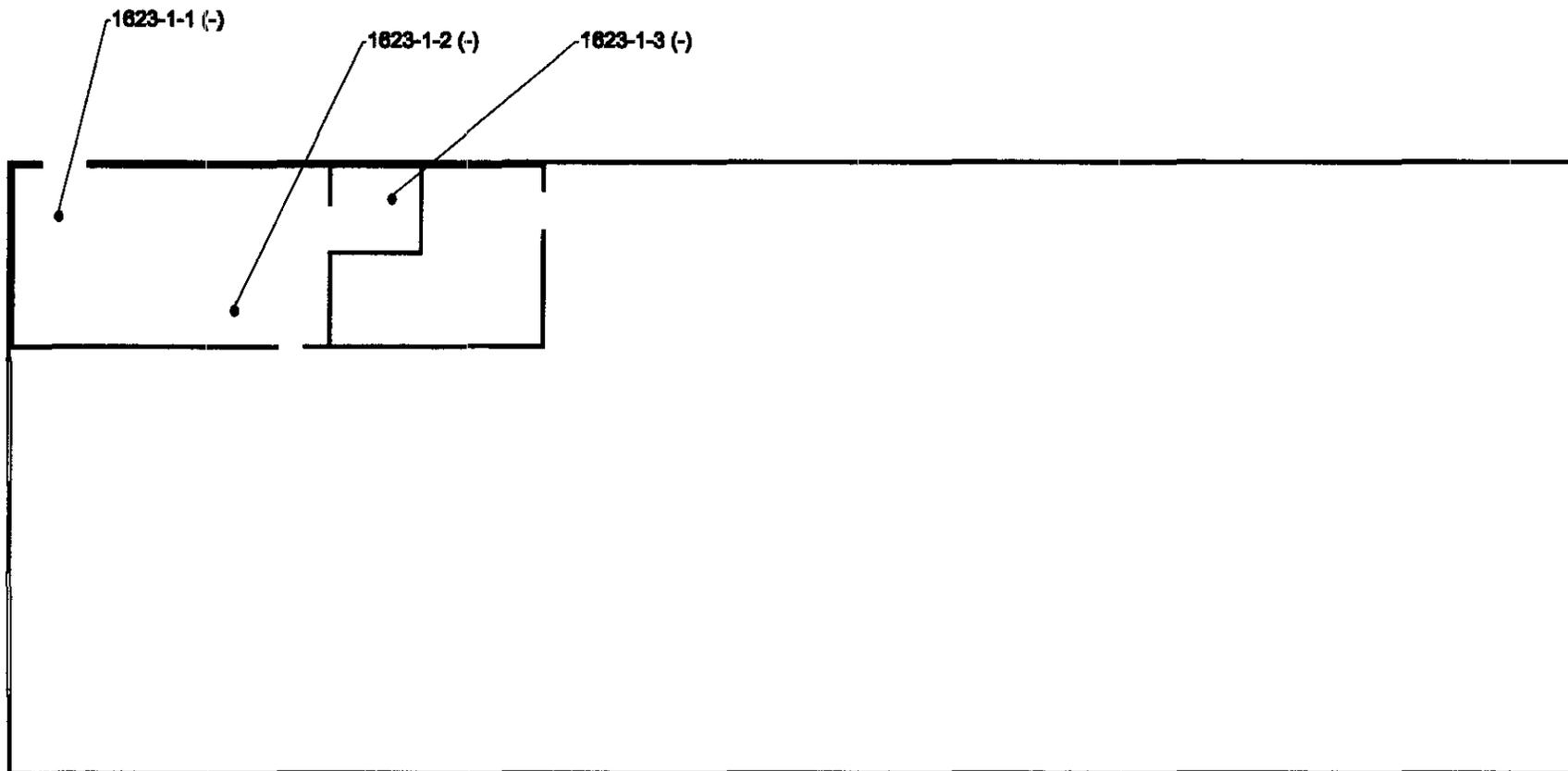
The following materials were not sampled in order to avoid disrupting their integrity, and they were assumed to contain asbestos:

<u>Assumed ACM</u>	<u>Quantity</u>	<u>NESHAP Category</u>
None.		

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

APPENDIX A

SAMPLE AND ACM LOCATION DRAWINGS



NOTE: No Asbestos-Containing Materials Identified in this Building.

BUILDING 1623

Sample and Asbestos-Containing Material Locations

LEGEND

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



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

APPENDIX B
PERSONNEL AND LABORATORY ACCREDITATIONS



The Georgia Institute of Technology

This is to certify that

Foshie Bell

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

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

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

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

August 26, 1998

Dates of Attendance

August 26, 1999

Expiration Date

149-64-0385

Social Security Number

Myrtle I. Turner, CET
Course Director

2900

Certificate Number

The Environmental Institute

Douglas J. Milton

Social Security Number - 266-55-7179

*Has completed coursework and satisfactorily passed
an examination that meets all criteria required for
EPA/AHERA/ASHARA (TSCA Title II) Approved Rec accreditation
and NESHAP Regulations Training
Asbestos in Buildings: Inspector & Management
Planner Refresher*

December 15, 1999

Course Date

6398

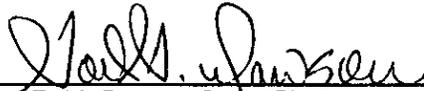
Certificate Number

December 15, 1999

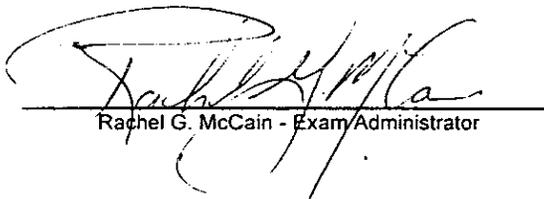
Examination Date

December 14, 2000

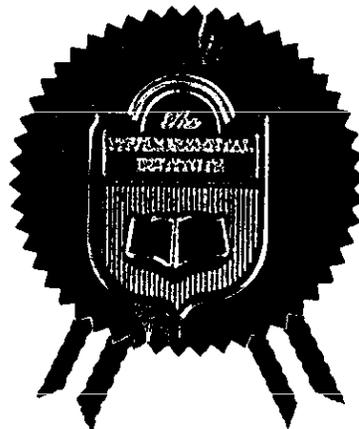
Expiration Date



Tod A. Dawson - Course Director

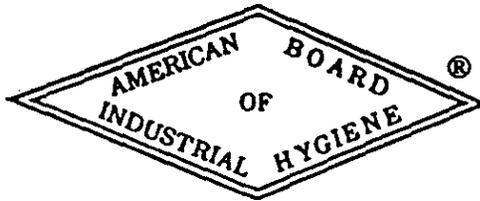


Rachel G. McCain - Exam Administrator



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

The
American Board of Industrial Hygiene®
ABIH®



organized to improve the practice of Industrial Hygiene
proclaims that

Douglas J. Milton

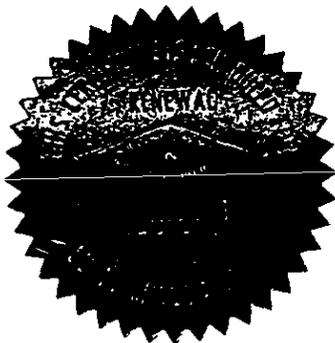
having met all requirements through
education, experience and examination,
is hereby certified in the

COMPREHENSIVE PRACTICE
of
INDUSTRIAL HYGIENE

and has the right to use the designations

CERTIFIED INDUSTRIAL HYGIENIST

CIH



November 12, 1997

date

J. Kenneth Conner

Chair ABIH

CP 7612

certificate
number

Ray T. Conner

Secretary ABIH



South Carolina Department of Health and Environmental Control



ASBESTOS ABATEMENT LICENSE

No. 22860

This certifies that

Douglas J Milton

266-NB-7179

doing business as *B A T Associates, Inc*

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

Consultant/Management Planner

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

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

09/24/98.

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

07/28/99

ORIGINAL

07/28/99 14:31



Richard D. Sharpe

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



South Carolina Department of Health and Environmental Control



ASBESTOS ABATEMENT LICENSE

No. 22859

This certifies that

Douglas J Milton

266-BEJ-7179

doing business as *B A T Associates, Inc*

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

Consultant/Building Inspector

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

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

09/23/98.

07/28/99

ORIGINAL

07/28/99 14:28



Richard D. Sharpe

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

United States Department of Commerce
National Institute of Standards and Technology

NVLAP[®]

ISO/IEC GUIDE 25:1990
ISO 9002:1987

Certificate of Accreditation



CAPE ENVIRONMENTAL MANAGEMENT, INC.
ATLANTA, GA

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

BULK ASBESTOS FIBER ANALYSIS

June 30, 2000

Effective through

A handwritten signature in black ink, appearing to read "James L. Galt".

For the National Institute of Standards and Technology

NVLAP Lab Code: 102111-0

United States Department of Commerce
National Institute of Standards and Technology

NVLAP[®]

ISO/IEC GUIDE 25:1990
ISO 9002:1987

Certificate of Accreditation



ANALYTICAL ENVIRONMENTAL SERVICES, INC.
ATLANTA, GA

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

BULK ASBESTOS FIBER ANALYSIS

September 30, 2000

Effective through

For the National Institute of Standards and Technology

NVLAP Lab Code: 102033-0

APPENDIX C
LABORATORY ANALYSIS RESULTS

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

CLIENT NAME: BAT ASSOCIATES LAB JOB NO: B9334-1
PROJECT NAME: CHARLESTON NSY / 971001-13.03 DATE RECEIVED: 12/16/99
PROJECT NO: L802Z.000 REPORT ISSUED: 1/13/00
SAMPLE FIELD ID: 1623-1-1 LAB ID: 928035
SAMPLE INFO: DATE ANALYZED: 1/7/00

SAMPLE DESCRIPTION

LAYERED: NO

APPEARANCE: TAN HARD RESILIENT TO GRANULAR (FT) WITH YELLOW MASTIC

RESULT OF ANALYSIS IN VOLUME PERCENTAGE (BY VISUAL ESTIMATE)

ASBESTOS FIBERS		NONASBESTOS FIBERS		NONFIBROUS COMPONENTS		OTHER COMPONENTS	
CHRYSOITILE		CELLULOSE		VERMICULITE/MICA		BITUMEN/TAR	
AMOSITE		GLASS FIBERS		PERLITE		SAND/AGGR.	35
CROCIDOLITE		SYNTHETICS		EXPANDED GLASS		GLUE/CAULK	2
TREMOLITE		WOLLASTONITE		SYNTHETIC FOAM		VINYL	
ACTINOLITE		TALC		ALUMINUM/METAL		CORK	
ANTHOPHYLLITE				FOAM RUBBER		LATEX/RUBBER	
						PAINT/OTHER	63

COMMENTS:

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

ANALYST


ALEKSEY REZNIK

QUALITY CONTROL


STEVE JARVIS

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

CLIENT NAME: BAT ASSOCIATES LAB JOB NO: B9334-1
 PROJECT NAME: CHARLESTON NSY / 971001-13.03 DATE RECEIVED: 12/16/99
 PROJECT NO: L802Z.000 REPORT ISSUED: 1/13/00
 SAMPLE FIELD ID: 1623-1-2 LAB ID: 928036
 SAMPLE INFO: DATE ANALYZED: 1/7/00

SAMPLE DESCRIPTION

LAYERED: NO

APPEARANCE: TAN HARD RESILIENT TO GRANULAR (FT) WITH YELLOW MASTIC

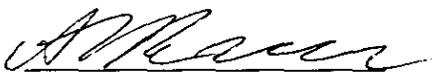
RESULT OF ANALYSIS IN VOLUME PERCENTAGE (BY VISUAL ESTIMATE)

ASBESTOS FIBERS		NONASBESTOS FIBERS		NONFIBROUS COMPONENTS		OTHER COMPONENTS	
CHRYSTOTILE		CELLULOSE		VERMICULITE/MICA		BITUMEN/TAR	
AMOSITE		GLASS FIBERS		PERLITE		SAND/AGGR.	30
CROCIDOLITE		SYNTHETICS		EXPANDED GLASS		GLUE/CAULK	3
TREMOLITE		WOLLASTONITE		SYNTHETIC FOAM		VINYL	
ACTINOLITE		TALC		ALUMINUM/METAL		CORK	
ANTHOPHYLLITE				FOAM RUBBER		LATEX/RUBBER	
						PAINT/OTHER	67

COMMENTS:

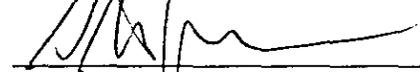
SAMPLE WAS ANALYZED BY PLM USING DISPERSION STAINING TECHNIQUES IN ACCORDANCE WITH U.S. EPA METHOD 40CFR Ch. I (7-1-92) PT. 763, SUBPT. F, APP. A. LAST CALIBRATION OF EQUIPMENT WAS PERFORMED ON: 1/7/00 FOR ALL HETEROGENEOUS AND LAYERED SAMPLES EASILY SEPARATED INTO SUBLAYERS, EACH LAYER IS ANALYZED SEPARATELY.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

ANALYST



ALEKSEY REZNIK

QUALITY CONTROL



STEVE JARVIS

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

CLIENT NAME: BAT ASSOCIATES LAB JOB NO: B9334-1
PROJECT NAME: CHARLESTON NSY / 971001-13.03 DATE RECEIVED: 12/16/99
PROJECT NO: L802Z.000 REPORT ISSUED: 1/13/00
SAMPLE FIELD ID: 1623-1-3 LAB ID: 928037
SAMPLE INFO: _____ DATE ANALYZED: 1/7/00

SAMPLE DESCRIPTION

LAYERED: NO

APPEARANCE: TAN HARD RESILIENT TO GRANULAR (FT) WITH YELLOW MASTIC

RESULT OF ANALYSIS IN VOLUME PERCENTAGE (BY VISUAL ESTIMATE)

ASBESTOS FIBERS		NONASBESTOS FIBERS		NONFIBROUS COMPONENTS		OTHER COMPONENTS	
CHRYBOTILE		CELLULOSE		VERMICULITE/MICA		BITUMEN/TAR	
AMOSITE		GLASS FIBERS		PERLITE		SAND/AGGR.	30
CROCIDOLITE		SYNTHETICS		EXPANDED GLASS		GLUE/CAULK	5
TREMOLITE		WOLLASTONITE		SYNTHETIC FOAM		VINYL	
ACTINOLITE		TALC		ALUMINUM/METAL		CORK	
ANTHOPHYLLITE				FOAM RUBBER		LATEX/RUBBER	
						PAINT/OTHER	65

COMMENTS:

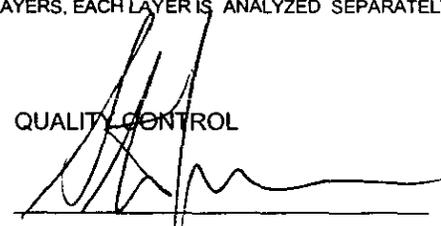
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REPORT 1 OF 1

ANALYST



ALEKSEY REZNIK

QUALITY CONTROL



STEVE JARVIS

BAT

BAT Associates, Inc.
ENGINEERS • SCIENTISTS • PLANNERS

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

CHAIN OF CUSTODY FORM

BAT PROJECT CONTACT DOUGLAS J. MILTON	
BAT JOB NAME Charleston Naval Shipyard	BAT JOB NO. 971001 TASK NO. 13.03
ANALYSIS REQUESTED <input checked="" type="checkbox"/> PLM <input type="checkbox"/> PCM <input type="checkbox"/> AAS For Lead Content <input type="checkbox"/> OTHER _____	
CHECK ONE: <input type="checkbox"/> ROUTINE <input checked="" type="checkbox"/> ROUTINE - FAX (HANDWRITTEN) AS SOON AS POSSIBLE <input type="checkbox"/> RUSH - FAX (HANDWRITTEN) AS SOON AS POSSIBLE	
SAMPLE ID	SAMPLE ID
1. 1623-1-1	16.
2. 1623-1-2	17.
3. 1623-1-3	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: Navy Project Rates	
Relinquished by: Douglas J. Milton	Received by: [Signature]
Date: 12/16/99 Time: 12:20	Date: 12/16/99 Time: 12:20

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

CLIENT NAME : BAT ASSOCIATES, INC DATE : 12/20/99

PROJECT NAME: CHARLESTON NAVAL SHIPYARD / 971001

SAMPLE ID : 1623-1-OC1 AES LAB NO : 145922 AES JOB NO : B9603

SAMPLE LOCATION :

SAMPLE - TAN HARD COMPACT PARTLY GRANULAR WITH FIBERS & GLUE.
 DESCRIPTION

RESULT OF BULK SAMPLE ANALYSIS (BY VISUAL VOLUMETRIC PERCENTAGE)			
ASBESTOS FIBERS		NONFIBROUS COMPONENTS	
CHRYBOTILE		VERMICULITE	
AMOSITE		BIOTITE	
CROCIDOLITE		MICA	
ANTHOPHYLLITE		PERLITE	
TREMOLITE		AGGREGATE/SAND	45
ACTINOLITE		STYROFOAM	
NONASBESTOS FIBERS		OTHER COMPONENTS	
SYNTHETICS	1	ALUMINUM	
MINERAL WOOL		BITUMEN	
FIBERGLASS		RESILIENT MATERIAL	
CELLULOSE	1	GLUE	1
ANIMAL HAIR		BINDERS	52
ANTIGORITE			

COMMENTS :

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

MICROANALYST :

QUALITY CONTROL BY :

ARKADIY GEDLIN

SVETLANA ARKHIPOV

BAT

BAT Associates, Inc.
ENGINEERS • SCIENTISTS • PLANNERS

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

CHAIN OF CUSTODY FORM

BAT PROJECT CONTACT DOUGLAS J. MILTON	
BAT JOB NAME Charleston Naval Shipyard	BAT JOB NO. 971001 TASK NO. 13.03
ANALYSIS REQUESTED <input checked="" type="checkbox"/> PLM <input type="checkbox"/> PCM <input type="checkbox"/> AAS For Lead Content <input type="checkbox"/> OTHER _____	
CHECK ONE: <input type="checkbox"/> ROUTINE <input checked="" type="checkbox"/> ROUTINE - FAX (HANDWRITTEN) AS SOON AS POSSIBLE <input type="checkbox"/> RUSH - FAX (HANDWRITTEN) AS SOON AS POSSIBLE	
SAMPLE ID	SAMPLE ID
1. 8-1-QC1	16.
2. 8-5-QC2	17.
3. 8-5-QC3 8-9-QC3 <i>(22.1.67)</i>	18.
4. 8-5-QC4 8-12-QC4 <i>(E)</i>	19.
5. 31-1-QC1	20.
6. 31-5-QC2	21.
7. 8-4-QC2	22.
8. 33-1-QC1	23.
9. 35-1-QC1	24.
10. 36-1-QC1	25.
11. 86-1-QC1	26.
12. 86-5-QC2	27.
13. 1623-1-QC1	28.
14. 1883-1-QC1	29.
15.	30.
SPECIAL INSTRUCTIONS: Navy Project Rates	
Relinquished by: Douglas J. Milton	Received by: Carla E.
Date: 12/16/99 Time: 12:40	Date: 12/11/99 Time: 12:40pm

Sample ID's changed per Jason McGeehan, 12/16/99. (E)