

**AMMENDMENT TO THE FINDING OF SUITABILITY TO LEASE  
FORT MONMOUTH NEW JERSEY,  
FORT MONMOUTH MARINA  
APRIL 2014**

**Proponent:** U.S. Army, BRAC

**Project Title:** Amendment to the Finding of Suitability to Lease (FOSL) Fort Monmouth New Jersey, Fort Monmouth Marina, dated June 2013

**Location of Action:** Fort Monmouth, NJ

**Description of the Proposed Action:** In order to support the lease of the Marina of Fort Monmouth to the Fort Monmouth Economic Revitalization Authority (FMERA) the Army prepared a FOSL dated June 2013. This amendment has been prepared to revise the anticipated use of the property. Originally none of the buildings on the property were to be used by FMERA; however, there is now a need for the use of Building 450 in conjunction with the lease of the property (see Site Map (Attachment 1)).

**Environmental Condition of the Property (ECP):** The environmental condition of the property has not changed since the original FOSL was completed, as is documented in the Environmental Condition of Property (ECP) recertification dated April 10, 2014 (Attachment 2). Since Building 450 will now be used, an asbestos survey was completed and determined that asbestos containing material (ACM) does not exist in Building 450 (Attachment 3). As covered in the original FOSL, Building 450 was constructed in 1987 and is presumed not to contain lead based paint (LBP). In addition, this building will not be used for residential purposes, so no further action with regard to LBP is necessary.

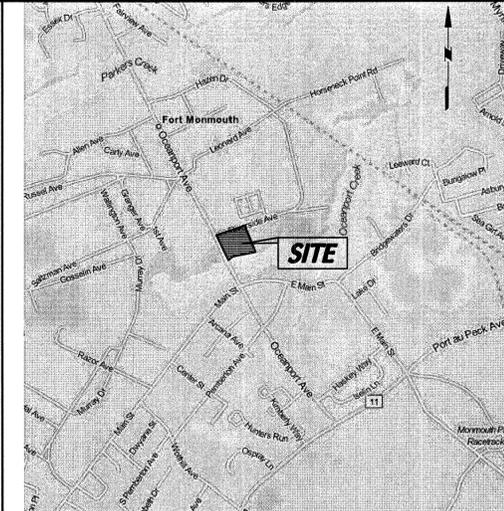
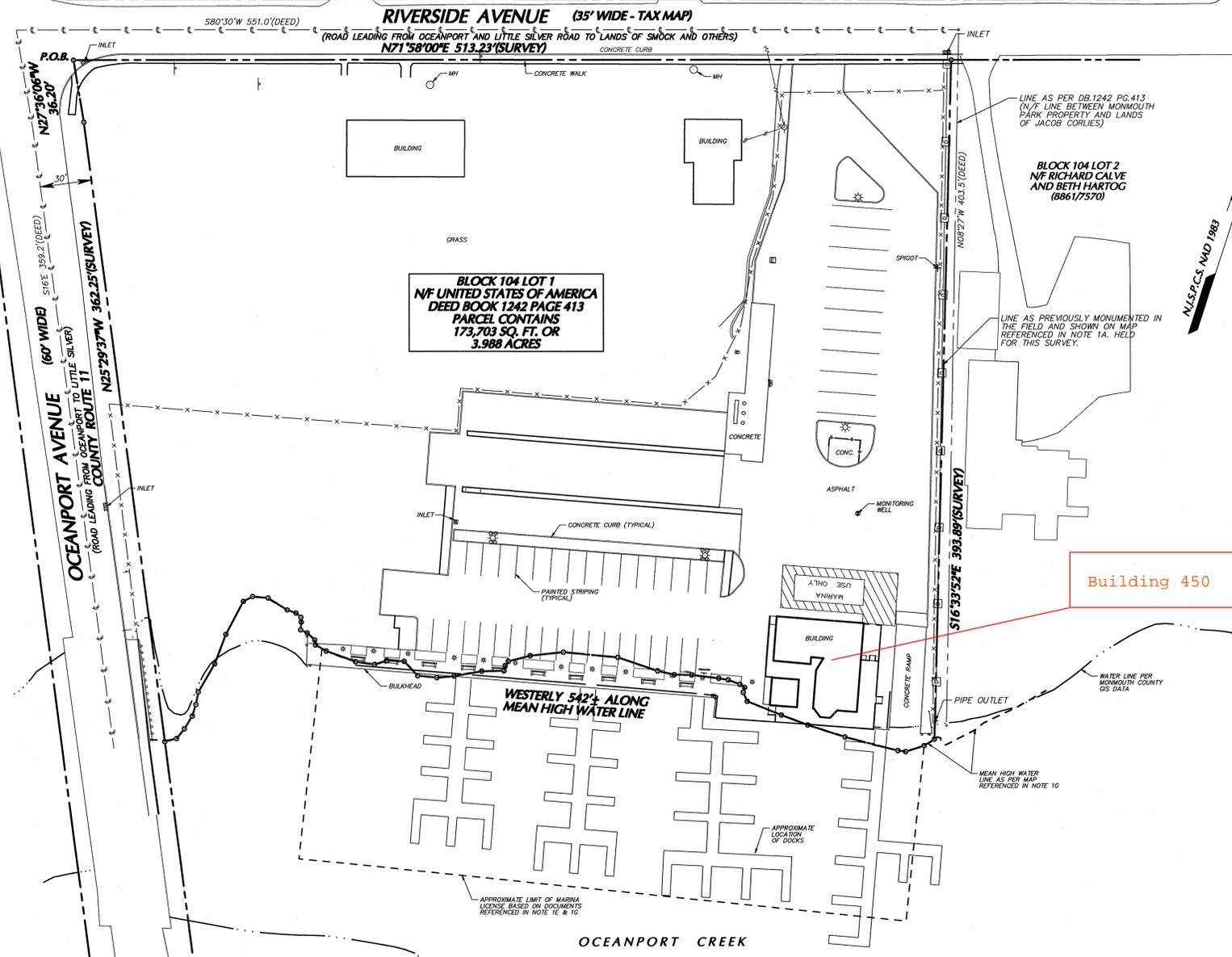
**Approved by:**

---

Mr. James E. Briggs  
Acting Chief Consolidated Branch  
BRAC Division

Date

## ATTACHMENT 1



KEY MAP (N.T.S.)

**LEGEND**  
(SYMBOLS NOT SHOWN TO SCALE)

- HYDRANT
- STREET LIGHT
- SIGNAL POLE
- MANHOLE
- WATER VALVE
- GAS VALVE
- UNKNOWN VALVE
- CATCH BASIN
- METAL COVER
- ELECTRIC BOX
- DOOR
- DOUBLE DOOR
- GARAGE DOOR
- PARKING METER
- CLEAN OUT
- TREE
- BENCH MARK
- SIGN
- POLE
- ANCHOR POLE
- BOLLARD
- FENCE (TYPE AS NOTED)
- OVERHEAD WIRE
- GUIDE RAIL (TYPE AS NOTED)
- TREE LINE
- PROPERTY/RIGHT-OF-WAY LINE
- DEED LINE
- RAILROAD TRACK
- FENCE (COLUMNS & METAL FENCE)
- BOROUGH BOUNDARY LINE
- REFERENCED UTILITY LINE (TYPE AS NOTED)-PLOTTED FROM EXISTING MAPPING

**NOTES**

1. THIS SURVEY IS BASED UPON EXISTING PHYSICAL CONDITIONS FOUND AT THE SUBJECT SITE, AND THE FOLLOWING REFERENCES:  
 A. MAP ENTITLED "SURVEY OF FORT MONMOUTH, N.J., PROPERTY MAP" SIGNED 2/20/1969 SHEETS 1 & 2.  
 B. MAP ENTITLED "MASTER PLAN, BASIC INFORMATION MAPS, RESERVATION MAP, FORT MONMOUTH, RED BANK, NEW JERSEY" DATED 11/01/1965, DRAWING NO. 18-02-01.  
 C. TAX MAP SHEET 8 FOR THE BOROUGH OF OCEANPORT  
 D. MONMOUTH COUNTY GIS DATA.  
 E. NJDEP, DIVISION OF LAND USE REGULATION, BUREAU OF TIDELANDS MANAGEMENT, FILE NO. 1338-10-0004.1 - REVOCABLE LICENSE FOR MAXIMUM 71 SLIPS  
 F. THE FOLLOWING DEEDS PROVIDED BY CHICAGO TITLE INSURANCE COMPANY SHOWN THUS (DEED BOOK/PAGE): 1242/413; 8861/7570; 8487/4375  
 G. MAP ENTITLED "STATE OF NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION, BUREAU OF TIDELANDS MANAGEMENT, MAP SHOWING CONVEYANCES ON PARKERS AND OCEANPORT CREEKS, BOROUGH OF SHREWSBURY, OCEANPORT AND LITTLE SILVER, MONMOUTH COUNTY" ATLAS SHEET NO. 539-2172.
2. THE SURVEYED PROPERTY IS SUBJECT BUT NOT LIMITED TO THE FOLLOWING FACTS AS REVEALED BY THE HEREON REFERENCED INFORMATION. THE INFORMATION SHOWN HEREON DOES NOT CONSTITUTE A TITLE SEARCH BY THE SURVEYOR. ALL INFORMATION THAT MAY AFFECT THE QUALITY OF TITLE TO BOTH THE SUBJECT AND ADJOINING PARCELS SHOULD BE VERIFIED BY AN ACCURATE AND CURRENT TITLE REPORT. NONE SUPPLIED.
3. THE MERIDIAN OF THIS SURVEY IS REFERENCED TO NEW JERSEY STATE PLANE COORDINATE SYSTEM NAD 1983 AS ESTABLISHED USING GPS METHODS.
4. STREET NAMES AND R.O.W. WIDTHS, BLOCK AND LOT NUMBERS AS PER MAPS REFERENCED IN NOTE 1 ABOVE.
5. PLANIMETRIC INFORMATION SHOWN HEREON ALONG THE OUTBOUND LIMITS OF THE PARCEL AND WITHIN THE MARINA AREA HAS BEEN OBTAINED FROM GROUND SURVEYS BY LANGAN ENGINEERING AND ENVIRONMENTAL SERVICES, INC. DURING NOVEMBER 2012.
6. OFFSETS (IF SHOWN) ARE FOR SURVEY REFERENCES ONLY AND ARE NOT TO BE USED IN CONSTRUCTION OF ANY TYPE.
7. UTILITIES, WETLANDS, ENVIRONMENTAL AND/OR HAZARDOUS MATERIALS LOCATION, IF ANY, NOT COVERED UNDER THIS CONTRACT.
8. THIS PLAN NOT VALID UNLESS EMBOSSED WITH THE SEAL OF THE PROFESSIONAL.
9. THE SCOPE OF THIS SURVEY IS LIMITED TO THE PERIMETER BOUNDARY OF THE PARCEL DEPICTED HEREON PLUS LOCATIONS OF PHYSICAL FEATURES WITHIN THE MARINA AREA. ALL OTHER SITE IMPROVEMENTS SHOWN ARE BASED ON DATA FROM THE MONMOUTH COUNTY GIS PROVIDED TO THIS OFFICE IN CAD FORMAT AND HAVE NOT BEEN FIELD VERIFIED.
10. PARCEL AREA IS BASED ON THE FOLLOWING:
  - OCEANPORT AVENUE BEING 60 FEET WIDE AS PER TAX MAP, MONMOUTH COUNTY ROAD PLAN AND MAP REFERENCED IN NOTES 1A & 1B. RIGHT OF WAY DEPICTED ON MAP REFERENCED IN NOTE 1A WAS HELD.
  - RIVERSIDE AVENUE BEING 35 FEET WIDE AS PER TAX MAP. ALIGNMENT SHOWN IS BASED ON PHYSICAL LOCATION OF ROADWAY. NO OTHER DOCUMENTS OR EVIDENCE HAVE BEEN FOUND WHICH WOULD HELP DETERMINE THE INTENDED ALIGNMENT. DEEDS LISTED IN NOTE 1F PROVIDE CONFLICTING DATA IN REGARDS TO CENTERLINE OF RIVERSIDE AVENUE AND ALSO LOT LINES.
  - EASTERLY LINE SHOWN IS BASED ON MAP REFERENCED IN NOTE 1A. THIS LINE FOLLOWS EXISTING SITE CONDITIONS. DEED FOR PROPERTY IN QUESTION AND ADJOINING DEEDS PROVIDE CONFLICTING DATA FOR LOT LINES AND DO NOT MATCH EXISTING CONDITIONS. ALTHOUGH PROPERTY CORNER MARKERS WERE NOT FOUND FOR THIS SURVEY, THE REFERENCED 1969 SURVEY, WHICH WAS HELD, INDICATES THAT NUMEROUS PROPERTY MARKERS WERE SET AT THAT TIME. BASED ON THE CONFIGURATION OF EXISTING CONDITIONS ALONG THIS BOUNDARY LINE, IT APPEARS THEY WERE CONSTRUCTED USING THE PROPERTY MARKERS SHOWN ON THAT SURVEY.
  - SOUTHERLY LINE SHOWN IS BASED ON TIDELANDS MAP REFERENCED IN NOTE 1G. BOUNDARY FOLLOWS LINE OF LANDS NOW OR FORMERLY FLOWED BY MEAN HIGH WATER AS DIGITIZED FROM SAID MAP. ALL PROPERTY WATERWARD OF THIS LINE IS OWNED BY THE STATE OF NEW JERSEY.

TO:  
 1. FORT MONMOUTH ECONOMIC REVITALIZATION AUTHORITY

I HEREBY STATE THAT THIS PLAN IS BASED ON A FIELD SURVEY MADE BY ME OR UNDER MY IMMEDIATE SUPERVISION IN ACCORDANCE WITH NJAC 13:40-5.1 "PREPARATION OF LAND SURVEYS" AND TO THE BEST OF MY PROFESSIONAL KNOWLEDGE, INFORMATION AND BELIEF, AND IN MY PROFESSIONAL OPINION, CORRECTLY REPRESENTS THE CONDITIONS FOUND ON THE DATE OF THE FIELD SURVEY AT THE SUBJECT PROPERTY" AND THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2011 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/ACSM LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1, 2, 4, 12, 13, 14 AND 17 OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED DURING NOVEMBER 2012.

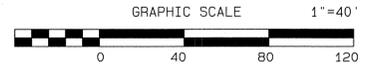
Date: 2-14-13  
 Signature: Gary A. Veenstra  
 GARY A. VEENSTRA  
 PROFESSIONAL LAND SURVEYOR, N.J. LICENSE No. GS37213

**LANGAN**  
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 Langan Engineering, Environmental, Surveying and Landscape Architecture, P.C.  
 Langan Engineering and Environmental Services, Inc.  
 Langan International, LLC  
 Created by: gavan on 2/14/13  
 NJ Certificate of Authorization No. 246A27898400

Project  
**FORT MONMOUTH MARINA PARCEL**  
 BOROUGH OF OCEANPORT  
 MONMOUTH COUNTY NEW JERSEY

Drawing Title  
**ALTA/ACSM LAND TITLE SURVEY**  
 BLOCK 104, LOT 1

Project No.	100291701	Drawing No.	VB-101
Date	02/14/13		
Scale	1"=40'		
Dwn. By	GAV		
Checked By	JER		1 OF 1



## ATTACHMENT 2

April 10, 2014

To: James E. Briggs  
Acting Chief, Consolidated Branch  
Base Realignment and Closure Division

From: Wanda Green  
BRAC Environmental Coordinator Support  
Fort Monmouth, New Jersey

SUBJECT: Recertification of U.S. Army BRAC Environmental Condition of Property Report, Fort Monmouth, Monmouth County, New Jersey, Final, January 29, 2007, Marina Property

1. Subject Environmental Condition of Property (ECP) Report classification of area property types is still valid and this ECP recertification supports that conclusion. This memorandum strictly addresses the marina area ("Property"), including the buildings and their surrounding parking and grassed areas as shown on the attached figure, that is proposed to be leased to the Fort Monmouth Economic Revitalization Authority. The property includes ECP Parcels 81 and parts of Parcel 79.

At the time the ECP was conducted, the Property was being used as a marina and some of the other buildings on the Property were used for office or storage space. As of September 15, 2011 Fort Monmouth was officially closed, all operations were terminated and the Property has been placed in caretaker status. Conditions on the Property and in the area surrounding the Property that may affect the environmental condition of the property have not changed materially since the ECP was completed. This conclusion is based on a review of the original ECP and site inspection performed on April xx, 2014, to view the Property and the area surrounding the Property.

2. Subject ECP was prepared in accordance with 42 USC § 9620(h)(4), Army Regulation 200-1, DA PAM 200-1, and the Department of Defense's Base Redevelopment and the Base Redevelopment and Realignment Manual (DoD 4165.77-M)(BRRM). The ECP, which included interviews, government record reviews, visual inspection of the Property and adjoining properties, and the declaration by the environmental professional responsible for the assessment, meets or exceeds the requirements of American Society for Testing and Materials (ASTM) Designation D 6008-96 (2005), *Standard Practice for Conducting Environmental Baseline Survey*.

3. The marina at Fort Monmouth, the Property, is located on Oceanport Avenue on the eastern section of the Main Post and is located in the Borough of Oceanport. The buildings and their surrounding parking areas are on approximately 3.99 acres. In accordance with ASTM Designation D5746-98 (2002), *Standard Classification of Environmental Condition of Property Area Types for Defense Base Closure and Realignment Facilities*, the ECP recommended that Parcel 81 be classified as a Category 4. Category 4 is defined as "Areas where release, disposal, and/or migration

of hazardous substances has occurred, and all removal or remedial actions to protect human health and the environment have been taken." Additional delineation in ECP Parcel 81 have been undertaken to support final closure of this site with the New Jersey Department of Environmental Protection and the property category remains a Category 4. Some portions of Parcel 79 that are within the marina area are classified as Category 2. Category 2 is defined as, "areas where only a release or disposal of petroleum products has occurred." The categories for the areas proposed for leasing are still considered Category 4 and Category 2 respectively.

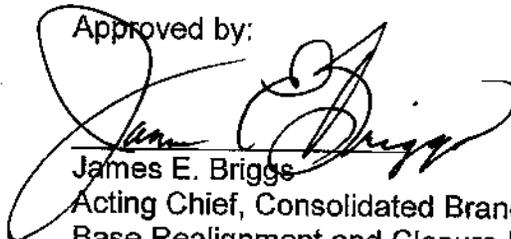
4. An asbestos containing material (ACM) survey was performed on March 12, 2014 at Building 450 to support the leasing of the Marina property. No ACM was identified in the building.
5. The ECP did not identify any recognized environmental conditions (RECs) associated with the Property.
6. An update of the Fort Monmouth electronic database search of environmental records for the Property and surrounding area is not necessary, because conditions on the Property and in the area surrounding the Property have not changed materially. In particular, the adjacent area outside the former base is a public road (Oceanport Avenue) and previous adjacent environmental issues were not identified in this area. Activities associated with the use of public road are not likely to result in any new recognized environmental conditions in connection with the Property.
7. Please contact Wanda Green at 732-380-7064 if you require further information.

Prepared by:



Wanda Green  
BRAC Environmental Coordinator  
Fort Monmouth, New Jersey

Approved by:



James E. Briggs  
Acting Chief, Consolidated Branch  
Base Realignment and Closure Division

Distribution:

Linda Range, NJDEP  
Bruce Steadman, Fort Monmouth Economic Redevelopment Authority

## ATTACHMENT 3



April 7, 2014

Ms. Wanda Green  
Project Manager  
COS, LLC  
P.O. Box 148  
Oceanport, New Jersey 07757

**BVNA Project No. 12014-000052.00**  
**U.S. Army Fort Monmouth, Building 450**  
**Tinton Falls, New Jersey**

Dear Ms. Green:

We are pleased to enclose Bureau Veritas North America, Inc.'s (BVNA) DRAFT report of the assessment of suspect asbestos-containing materials (ACM) at the U.S. Army Fort Monmouth Building 450 in Tinton Falls, New Jersey.

It is a pleasure to provide our services to you. If you have any questions, please call me at 732.225.6040, or email me at [doug.mcgarrity@us.bureauveritas.com](mailto:doug.mcgarrity@us.bureauveritas.com).

Sincerely,

Douglas J. McGarrity,  
Project Manager  
Health, Safety, and Environmental Services

DJM

Enclosures

# Asbestos Survey and Assessment

## U.S. Army Fort Monmouth, Building 450 Tinton Falls, New Jersey

Report Date: April 7, 2014  
BVNA Project No. 12014-000052.00

FINAL REPORT



**BUREAU  
VERITAS**

For the benefit of business and people

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## CONTENTS

<u>Section</u>	<u>Page</u>
1.0 INTRODUCTION.....	1
2.0 DESCRIPTION OF ASSESSMENT .....	1
3.0 DESCRIPTION OF FACILITY.....	2
4.0 RESULTS AND DISCUSSION.....	2
4.1 SAMPLES FOUND TO BE ASBESTOS-CONTAINING .....	3
5.0 RECOMMENDATIONS AND COMMENTS.....	3
6.0 QUALITY ASSURANCE .....	3

### Appendixes

- A ANALYTICAL RESULTS OF BULK MATERIAL SAMPLING
- B ANALYTICAL METHODS
- C LABORATORY DOCUMENTATION
- D PHOTO DOCUMENTATION
- E SAMPLE LOCATIONS
- F ACM INVENTORY
- G STAFF CREDENTIALS



## **1.0 INTRODUCTION**

Chenega Operations Services, LLC (COS) retained Bureau Veritas North America, Inc. (BVNA) to conduct an assessment of suspect asbestos-containing materials (ACM) in Building 450 at U.S. Army Fort Monmouth in Tinton Falls, New Jersey. This project was performed in accordance with the scope of work described in BVNA's Proposal No. 1209.14.169, dated March 11, 2014.

Mr. Douglas J. McGarrity, Project Manager, and Mr. Matthew Harmon, Consultant, both of BVNA, conducted the assessment on March 12, 2014. Mr. McGarrity is a United States Environmental Protection Agency (USEPA)-accredited Asbestos Building Inspector and Management Planner. Mr. Harmon is also a USEPA-accredited Asbestos Building Inspector.

Appendix A of this report contains tables presenting the sampling and analytical results for this assessment. Appendix B presents a brief description of the sampling and analytical methods employed during this assessment. Appendix C contains copies of the laboratory documentation for this assessment. Appendix D contains photo documentation for this assessment. Appendix E depicts sample locations for this assessment. Appendix F presents the ACM Inventory. Appendix G presents Staff Credentials.

## **2.0 DESCRIPTION OF ASSESSMENT**

On March 12, 2014, BVNA inspected Building 450 and collected bulk samples of suspect asbestos containing materials (ACMs). BVNA's assessment was minimally-destructive and involved inspecting accessible, interior and exterior areas of the building located at U.S. Army Fort Monmouth in Tinton Falls, New Jersey. This walkthrough assessment provided a visual inspection of the readily accessible portions of the building and allowed BVNA to determine an appropriate sampling strategy. BVNA did not sample roofing materials during this assessment, but, where appropriate, assumed that these materials were ACM.

BVNA inspected for suspect ACM including thermal systems insulation (TSI), surfacing materials, and miscellaneous materials (e.g., sheetrock, floor tiles, ceiling tiles). When materials suspected of containing asbestos were found, BVNA collected representative bulk samples from each homogeneous area. A homogeneous area, or HA, is an area of suspect ACM which is the same in appearance, use, color, and texture.

BVNA's analytical laboratory in Kennesaw, Georgia analyzed the samples collected during this assessment. The BVNA Kennesaw laboratory is accredited by the National Institute of Standards and Technology's National Voluntary Laboratory Accreditation Program (NIST/NVLAP).

Bulk samples of friable materials and some non-friable materials were analyzed by BVNA using Polarized Light Microscopy (PLM) following the United States Environmental Protection Agency (USEPA) Methods EPA-600/M4-82-020/EPA/600/R-93. Bulk samples of non-friable organically bound (NOB) materials were prepared using a gravimetric reduction and then analyzed using PLM with point counting following the above USEPA method. Where analytical results of an NOB HA material was found to be negative following the PLM NOB method, BVNA instructed the laboratory to conduct confirmatory analysis of the samples from the HA set using Transmission Electron Microscopy (TEM).

A homogeneous area or HA, is an area of suspect ACM which is the same in appearance, use, color, and texture. Generally, HA samples are analyzed until a sample yields a positive result, after which analysis for that sample series stops. If no positive result for asbestos is reported, all samples in a series are analyzed. In some instances, however, the inspector may request additional analyses of samples in an HA series to better characterize materials at the site during this assessment.



### **3.0 DESCRIPTION OF FACILITY**

Building 450, located within the U.S. Army Fort Monmouth in Tinton Falls, New Jersey is an abandoned marina/diner that was completely flooded during Super Storm Sandy. The building is a single story, approximately 5,000 square foot structure, with open deck area. The floor is a concrete slab. The walls are sheetrock and wood. The building exterior is wood. The slope roofing consists of two (2) layers of roofing shingles and a layer of roof felt. No records of asbestos related activities at Building 450 were available to BVNA at the time of inspection.

### **4.0 RESULTS AND DISCUSSION**

BVNA collected a total of sixteen (16) multi-layered samples from fifteen (15) suspect HAs during the survey. The laboratory results include analysis of eighteen (18) sample layers by PLM, twelve (12) sample layers by PLM for NOB materials, and twelve (12) samples by TEM for negative confirmation. A summary of the types of materials sampled follows.

#### **SURFACING MATERIALS**

Surfacing materials were not observed in the building.

#### **THERMAL SYSTEMS INSULATION**

Thermal systems insulation was not observed in the building.

#### **MISCELLANEOUS MATERIALS**

- HA-1 Beige, 12-inch-by-12-inch, Vinyl Composite (Floor) Tile (VCT);
- HA-2 Tan/Yellow Glue associated with HA-1;
- HA-3 Blue/Grey, 12-inch-by-12-inch, Vinyl Composite (Floor) Tile (VCT);
- HA-4 Tan Glue associated with HA-3;
- HA-5 4-inch, Off-White, Vinyl base cove molding;
- HA-6 Yellow/Tan Mastic associated with HA-5;
- HA-7 Off-white, pitted, 2-foot-by- 2-foot, Ceiling Tile;
- HA-8 Wallboard;
- HA-9 Joint Compound associated with HA-8;
- HA-10 Grey, 1-inch –by- 1-inch Ceramic Floor Tile;
- HA-11 Cream-color Mortar associated with HA-10;
- HA-12 Gray Grout associated with HA-10;
- HA-13 Light Brown Ceramic Base Cove Molding;
- HA-14 Gray Grout associated with HA-13;
- HA-15 Cream-color Mortar associated with HA-13;

#### **PRESUMPTIONS FOR HAs**

HAs are selected based on the similarity of a given material, considering the material's purpose of application, color, and texture. This can result in materials which are, in fact, different materials being grouped together (if the materials are used for the same purpose and visually appear to be the same). This is a limitation of all asbestos surveys and can result in non-ACM be categorized as ACM.

In addition to the materials sampled during this assessment, one (1) material was identified and assumed to be ACM until sampling and analysis can be conducted. These materials are:

- HA-16 Asphaltic Roofing Shingle with possible additional associated roofing materials.



Tables presenting the materials sampled during this assessment and the analytical results of sample analysis are presented in Appendix A of this report.

#### **4.1 SAMPLES FOUND TO BE ASBESTOS-CONTAINING**

Asbestos was not detected in the samples collected.

#### **5.0 RECOMMENDATIONS AND COMMENTS**

Analytical results indicate that no asbestos fibers were detected in the samples collected during this assessment. The State of New Jersey and the USEPA define ACM as a material that contains greater than one (1) percent asbestos. Therefore, these materials listed below, are by definition, NOT asbestos-containing materials (ACM).

- Beige, 12-inch-by-12-inch, Vinyl Composite (Floor) Tile (VCT);
- Tan/Yellow Glue associated with HA-1;
- Blue/Grey, 12-inch-by-12-inch, Vinyl Composite (Floor) Tile (VCT);
- Tan/Yellow Glue associated with HA-3;
- 4-inch, Off-White, Vinyl base cove molding;
- Tan Mastic associated with HA-5;
- Off-white, pitted, 2-foot-by- 2-foot, Ceiling Tile;
- Wallboard;
- Joint Compound associated with Wallboard;
- Grey, 1-inch –by- 1-inch Ceramic Floor Tile;
- Cream-color Mortar associated with HA-10;
- Gray Grout associated with HA-10;
- Light Brown Ceramic Base Cove Molding;
- Gray Grout associated with HA-13
- Cream-color Mortar associated with HA-13;

Consider assumed ACMs outlined in this report to be ACM until sampling and analysis proves otherwise.

Note that this asbestos assessment is limited to those materials and areas visually apparent at the time of the assessment. Furthermore, the assessment reflects conditions at the time of the assessment. In the event that hidden suspect materials are discovered, please contact a properly accredited asbestos consultant to provide the necessary evaluation.

#### **6.0 QUALITY ASSURANCE**

As a world leader in providing services that our clients depend on, we continually strive to provide the highest quality. This report has been reviewed as a part of our quality process.

This report submitted by:

Douglas J. McGarrity  
Project Manager  
Health, Safety, and Environmental Services

This report reviewed by:

Patrick A. Hand, CIH  
Senior Project Manager  
Health, Safety, and Environmental Services

April 7, 2014



## **APPENDIX A**

### **ANALYTICAL RESULTS OF BULK MATERIAL SAMPLING**



**Table 1**

**Analytical Results of Bulk Material Sampling for Asbestos  
 by Polarized Light Microscopy – Point Counting  
 at  
 FORT MONMOUTH  
 Building 450  
 Eatontown, New Jersey  
 for  
 COS, LLC**

**BVNA Project No. 12014-000052.00**

**March 12, 2014**

Sample Number	Sample Description/Location	Asbestos Content Percent and Type
	<u>HA-7- 2'x2' Off-White, Pitted Ceiling Tile</u>	
FM-031214-450-04A	From eating area	White Paint: NAD Beige Ceiling Tile: NAD
FM-031214-450-04B	From Stairway Hallway	White Paint: NAD Beige Ceiling Tile: NAD
	<u>HA-8 -Standard Sheetrock Wallboard, ~ 5/8" thick</u>	
FM-031214-450-05A	Above doorway	Off White Paint: NAD White Joint Compound: NAD White Tape: NAD White Joint Compound: NAD Brown/White Drywall: NAD
FM-031214-450-05B	Kitchen back wall	Off White Paint: NAD Brown/Gray Drywall: NAD
	<u>HA-9 - Off White Joint Compound associated with HA-8</u>	
FM-031214-450-06A	At doorway to kitchen	Off White Paint: NAD White Joint Compound: NAD White Tape: NAD White Joint Compound: NAD Brown/White Drywall: NAD
FM-031214-450-06B	Dining area at door	Off White Paint: NAD White Joint Compound: NAD



**Table 1 (continued)**

**Analytical Results of Bulk Material Sampling for Asbestos  
by Polarized Light Microscopy – Point Counting**

**at  
FORT MONMOUTH  
Building 450  
Eatontown, New Jersey  
for  
COS, LLC**

**BVNA Project No. 12014-000052.00**

**March 12, 2014**

Sample Number	Sample Description/Location	Asbestos Content Percent and Type
	<u>HA-10 - Beige 1"x1" Ceramic Floor Tile w/ Grout (HA-11) &amp; Mortar (HA-12)</u>	
FM-031214-450-07A	Men's Restroom	
	HA-10: White/Beige Ceramic Tile:	NAD
	HA-11: Gray Grout:	NAD
	HA-12: Mortar: Creme Mastic & White Mineral Mixture:	NAD
FM-031214-450-07B	Women's Restroom	
	HA-10: White/Beige Ceramic Tile:	NAD
	HA-11: Gray Grout:	NAD
	HA-12: Mortar: Creme Mastic & White Mineral Mixture:	NAD
	<u>HA-13: Light Brown 4" Ceramic Base-cove Molding, With Black Grout (HA-14) and Creme-colored Mortar (HA-15)</u>	
FM-031214-450-08A	Men's Restroom	
	HA-13: Light Brown Ceramic Tile:	NAD
	HA-14: Grey Grout:	NAD
	HA-15: Mortar: Creme Mastic & White Mineral Mixture:	NAD
	White Paint:	NAD
FM-031214-450-08B	Women's Restroom	
	HA-13: Light Brown Ceramic Tile:	NAD
	HA-14: Grey Grout:	NAD
	HA-15: Mortar: Creme Mastic & White Mineral Mixture:	NAD

HA: Homogeneous Area (Material)

NAD: No Asbestos Detected

Analytical Method: EPA-600/M4-82-020/EPA/600/R-93/116/NYELAP198.1

The samples in this table were analyzed by BVNA's Kennesaw, Georgia laboratory which is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP), the New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP), and the New Jersey Department of Environmental Protection).

Copies of accreditations are available on our website: <http://www.us.bureauveritas.com>.



**Table 2**

**Analytical Results of Bulk Material Sampling for Asbestos  
 by Polarized Light Microscopy for Non-Friable Organically Bound Materials  
 at  
 FORT MONMOUTH  
 Building 450  
 Eatontown, New Jersey  
 for  
 COS, LLC**

**BVNA Project No. 12014-000052.00**

**March 12, 2014**

Sample Number	Sample Description/Location	<u>Asbestos Content</u> Percent and Type	
<u>HA-1 - Beige 12"x12" Vinyl Composition (floor) Tile (VCT) With Mottled Beige Streaks and Associated Tan/Yellow Mastic (HA-2)</u>			
FM-031214-450-01A	Near South Windows	Tan Tile:	NAD
		Yellow Mastic:	NAD
FM-031214-450-01B	Near Stairs	Tan Tile:	NAD
		Yellow Mastic:	NAD
<u>HA-3 - Blue 12"x12" VCT with Mottled Pattern And Associated Tan/Yellow Mastic (HA-4)</u>			
FM-031214-450-02A	Near Doorway	Gray Tile:	NAD
		Yellow Mastic:	NAD
FM-031214-450-02B	Near Radiator	Gray Tile:	NAD
		Yellow Mastic:	NAD
<u>HA-5 - Off White, 4" - Vinyl Base-Cove Molding With Beige Glue (HA-6)</u>			
FM-031214-450-03A	Back wall of kitchen, toward left	White Cove Base:	NAD
		White Mastic & Tan Tape:	NAD
FM-031214-450-03B	Back wall of kitchen, toward right	White Cove Base:	NAD
		White Mastic:	NAD

HA: Homogeneous Area (Material); NAD: no asbestos detected; <: less than Analytical Method: ELAP 198.6

The samples in this table were analyzed by BVNA's Kennesaw, Georgia laboratory which is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP), the New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP), and the New Jersey Department of Environmental Protection). Copies of accreditations are available on our website: <http://www.us.bureauveritas.com>.



**Table 3**

**Analytical Results of Bulk Material Sampling for Asbestos  
 Transmission Electron Microscopy for Non-Friable Organically Bound Materials  
 at  
 FORT MONMOUTH  
 Building 450  
 Eatontown, New Jersey  
 for  
 COS, LLC**

**BVNA Project No. 12014-000052.00**

**March 12, 2014**

Sample Number	Sample Description/Location	<u>Asbestos Content Percent and Type</u>	
	<u>HA-1 - Beige 12"x12" VCT with Mottled Beige Streaks And Associated Tan/Yellow Mastic (HA-2)</u>		
FM-031214-450-01A	Near South Windows	Tan Tile: Yellow Mastic:	NAD NAD
FM-031214-450-01B	Near Stairs	Tan Tile: Yellow Mastic:	NAD NAD
	<u>HA-3 - Blue 12"x12" VCT with Mottled Pattern And Associated Tan/Yellow Mastic (HA-4)</u>		
FM-031214-450-02A	Near Doorway	Gray Tile: Yellow Mastic:	NAD NAD
FM-031214-450-02B	Near Radiator	Gray Tile: Yellow Mastic:	NAD NAD
	<u>HA-5 - Off White, 4" - Vinyl Base-Cove Molding With Beige Glue (HA-6)</u>		
FM-031214-450-03A	Back wall of kitchen, toward left	White Cove Base: White Mastic & Tan Tape:	NAD NAD
FM-031214-450-03B	Back wall of kitchen, toward right	White Cove Base: White Mastic:	NAD NAD

NAD: no asbestos detected

Analytical Method: ELAP 198.4

The samples in this table were analyzed by BVNA's Kennesaw, Georgia laboratory which is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP), the New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP), and the New Jersey Department of Environmental Protection). Copies of accreditations are available on our website:

<http://www.us.bureauveritas.com>.



## **APPENDIX B**

### **SAMPLING AND ANALYTICAL METHODS**



## **Analytical Method for Asbestos in Bulk Samples Using Polarized Light Microscopy (PLM)**

A representative portion of the bulk sample is transferred to a small dish. The sample is examined under a stereomicroscope at 10 to 40X magnification to determine if the material is fibrous and to note the physical characteristics of the sample. If fibers are present, fiber morphology is noted.

Forceps are used to extract fibers from the sample. At least one fiber representative of each type observed in the sample under the stereomicroscope is extracted and mounted on a microscope slide using a refractive index liquid (Cargille Series E: HO [high dispersion]).

After mounting, the fibers are analyzed and identified using polarized light microscopy (PLM) supplemented by dispersion staining. After fiber identification using PLM, a visual estimate is made of the percent composition by type of asbestos present and type of other fibrous materials identified. The visual estimate is based on volume and is accomplished using stereomicroscopic examination of the bulk sample.

### **References**

McCrone, Walter C. 1980. *The Asbestos Particle Atlas*, Ann Arbor, MI; Ann Arbor Science Publishers, Inc.

United States Environmental Protection Agency. Environmental Monitoring Systems Laboratory. 1982. *Interim Method for the Determination of Asbestos in Bulk Insulation Samples*; EPA-600/M4-82-020. Washington: GPO, December.

United States Environmental Protection Agency. *Method for the Determination of Asbestos in Bulk Building Materials*, EPA-600/R-93/116, July 1993 (PLM).



## **QUANTITATIVE ANALYSIS OF NON-FRIABLE ORGANICALLY BOUND (NOB) BULK SAMPLES FOR ASBESTOS USING POLARIZED LIGHT MICROSCOPY & TRANSMISSION ELECTRON MICROSCOPY**

Upon receipt in the laboratory, samples are ground until homogeneous. Each sample is weighed in a tared silica crucible. The sample is placed in a muffle furnace at a temperature of 480°C for 3 hours. The sample is allowed to cool to room temperature and immediately weighed to record ashed sample weight. (Layers within each sample are prepared, analyzed and billed as a single sample).

Approximately 2-5 ml of nondiluted HCL acid is slowly added to remove calcite and dolomite from the ashed sample. After 15 minutes, the sample is immediately diluted with ultra-pure water and filtered onto a pre-weighed 47 mm, 0.4 µm pore size, polycarbonate filter. The filter is dried on a slide warmer and weighed once again.

A 1 cm<sup>2</sup> portion of the filter is cut and placed in a clean silica crucible. Approximately 5 ml of ethanol are added and ultra-sonicated for 1 minute to remove the deposited sample into suspension. For, PLM analysis, the entire residue is analyzed either by stratified point count or a calibrated visual estimation.

Asbestos is identified using morphology, selected area electron diffraction, and energy-dispersive x-ray spectroscopy. Percent asbestos in the final residue is then extrapolated using gravimetric records to percent asbestos in the total sample.

### **References**

EPA/600/R-93/116 Section 2.3 (PLM)



**APPENDIX C**  
**LABORATORY DOCUMENTATION**



April 07, 2014

Doug McGarrity  
BUREAU VERITAS - EDISON  
160 Fieldcrest Avenue  
Edison, NJ 08837

Bureau Veritas Work Order No. A1403158

Reference: 12014-000052.00 Revised 4/7/14

Dear Doug McGarrity:

Bureau Veritas North America, Inc. received 16 samples on March 18, 2014 for the analyses presented in the following report.

The results apply only to the samples analyzed in this project. Please note that any unused portion of the samples will be discarded after a sixty-day holding period, unless you have requested otherwise.

This material is confidential and is intended solely for the person to whom it is addressed. If this is received in error, please contact the number provided below.

We appreciate the opportunity to assist you. If you have any questions concerning the report, please contact the analyst whose name appears on the report or myself at (770) 499-7701.

Sincerely,

Jon Perrenoud

Senior Microscopist

Electronic signature authorized through password protection

**Bureau Veritas North America, Inc.**

*Health, Safety, and Environmental Services*  
3380 Chastain Meadows Parkway, Suite 300  
Kennesaw, GA 30144

Main: (770) 499-7701  
Fax: (770) 499-7511  
[www.us.bureauveritas.com](http://www.us.bureauveritas.com)



## CASE NARRATIVE

Date: 07-Apr-14

**CLIENT:** BUREAU VERITAS - EDISON  
**Project:** 12014-000052.00 Revised 4/7/14  
**Work Order No** A1403158

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This report was revised on 4/7/2014 in order to add a ceramic tile layer to Sample A1403158-016B (Client ID FM-031214-450-08B).

### ANALYTICAL METHOD FOR ASBESTOS IN BULK SAMPLES USING POLARIZED LIGHT MICROSCOPY (PLM)

The results of this report relate only to the samples listed in the body of this report.

Unless otherwise noted below, the following statements apply: 1) all samples were received in acceptable condition, 2) all quality control results associated with this sample set were within acceptable limits and/or do not adversely affect the reported results, and 3) the industrial hygiene results have not been blank corrected unless otherwise noted.

Use of EPA/600/R-93/116 satisfies applicable requirements of the USEPA's "Interim Method for the Determination of Asbestos in Bulk Insulation Sample", EPA-600/M4-82-020, December 1982, published as Appendix E to Subpart E of 40CFR763. Bulk samples analyzed by New York State methods follow stratified point counting methods (198.1) or Method 198.6 for PLM non-friable organically bound materials (NYSDOH Lab Code –11645). Percentages are visual estimations of asbestos >10:1 aspect ratio. The reliable limit of quantitation of the method is 1%, although asbestos may be qualitatively detected at concentrations less than 1%. Samples for which asbestos is detected at <1% are reported as trace, "<1%". "None Detected" indicates that no asbestos fibers were observed. NESHAP requires point counting of a bulk sample when the result is <10% by a method other than point counting. EPA, however states that if 3 mounts of the sample are analyzed and the asbestos percentage is <10% by visual estimation, the client may elect to assume the amount to be greater than 1% or require verification by point counting. If the result by point counting is different than the result obtained by visual estimation, the point count result will be used. Sample friability or non-friability noted on the report is a requirement for the State of California and refers only to the condition of the sample under macroscopic examination. It does not imply friability or non-friability for the sample as collected or observed in the field as determined by the person collecting the sample. The Kennesaw, Georgia lab is accredited by NVLAP –Lab Code 101125-0.

(a)Polarized- light microscopy is not consistently reliable in detecting asbestos in floor coverings, similar non-friable organically bound materials, soil and vermiculite. Quantitative electron microscopy is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos containing. When analysis of such materials by PLM yields results negative for the presence of asbestos, Bureau Veritas recommends utilizing quantitative transmission electron

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**CLIENT:** BUREAU VERITAS - EDISON  
**Project:** 12014-000052.00 Revised 4/7/14  
**Work Order No** A1403158

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microscopy (TEM). For more information, contact the laboratory.

#### References

McCrone, Walter C. 1980. The Asbestos Particle Atlas. Ann Arbor, MI: Ann Arbor Science Publishers, Inc.

United States Environmental Protection Agency. Environmental Monitoring Systems Laboratory. 1982. Interim Method for the Determination of Asbestos in Bulk Insulation Samples. EPA-600/M4-82-020. Washington: GPO, December.

United States Environmental Protection Agency. Method for the Determination of Asbestos in Bulk Building Materials. EPA-600/R-93/116, July 1993 (PLM)

Fed. Reg. Vol. 55, No.224, 11/20/90, p.48415 (NESHAP)  
EPA Memorandum 5/8/1991 –NESHAP Clarifications

NYSDOH Methods 198.1/198.6

#### QUANTITATIVE ANALYSIS OF NON-FRIABLE ORGANICALLY BOUND BULK SAMPLES FOR ASBESTOS USING POLARIZED LIGHT MICROSCOPY (PLM) (NY ELAP 198.6)

Approximately 100-500 mg of sample is weighed in a tared silica crucible. The sample is placed in a muffle furnace at a temperature of 480C for at least 5 hours or until the weight has stabilized. The sample is allowed to cool to room temperature and immediately weighed to calculate percent organic loss.

The sample is placed in a tared crucible and ground to disaggregate the residue. Approximately 1 ml of non-dilute HCL acid is slowly added to remove calcite and dolomite from the remaining sample residue. After 15 minutes the sample is immediately diluted with ultra-pure water. The sample is then dispersed in 50 ml of ultra-pure water and filtered onto a pre-weighed 47 mm, 0.4um pore size, polycarbonate filter. The filter is dried on a slide warmer and weighed once again. IF the residue mass is <1% of the subsamples original mass, the analysis is terminated and the result is reported as non-ACM.

At least four subsamples from the filter are mounted and fibers (if present) are identified using a polarized light microscope and optical properties. The EPA point count method is used to quantitate asbestos fibers.

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**CLIENT:** BUREAU VERITAS - EDISON  
**Project:** 12014-000052.00 Revised 4/7/14  
**Work Order No** A1403158

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Results are reported as no asbestos detected, trace (<1%) or the percent asbestos and type if > 1%. Percent asbestos in the final residue is then extrapolated using gravimetric records to percent asbestos in the total sample.

**DISCLAIMER FOR NEGATIVE RESULTS** –Polarized Light Microscopy is not consistently reliable in detecting asbestos in floor coverings and non-friable organically bound materials. Quantitative transmission electron microscopy is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos containing. Further analysis by TEM is recommended using NYELAP Method 198.4 (NYSDOH Lab Code –11645).

#### References

New York ELAP Methods 198.6/198.4

United States Environmental Protection Agency. Method for the Determination of Asbestos in Bulk Building Materials. EPA-600/R-93/116, July 1993 (PLM)

NOTE: Some of the samples may have contained inseparable layers which were combined during preparation.

#### QUANTITATIVE ANALYSIS OF NON-FRIABLE ORGANICALLY BOUND BULK SAMPLES FOR ASBESTOS USING TRANSMISSION ELECTRON MICROSCOPY (TEM) (NY ELAP 198.4)

Approximately 100-500 mg of sample is weighed in a tared silica crucible. The sample is placed in a muffle furnace at a temperature of 480C for at least 5 hours or until the weight has stabilized. The sample is allowed to cool to room temperature and immediately weighed to calculate percent organic loss.

The sample is placed in a tared crucible and ground to disaggregate the residue. Approximately 1 ml of non-dilute HCL acid is slowly added to remove calcite and dolomite from the remaining sample residue. After 15 minutes the sample is immediately diluted with ultra-pure water. The sample is then dispersed in 50 ml of ultra-pure water and filtered onto a pre-weighed 47 mm, 0.4um pore size, polycarbonate filter. The filter is dried on a slide warmer and weighed once again. IF the residue mass is <1% of the subsamples original mass, the analysis is terminated and the result is reported as non-ACM.

A 1 cm<sup>2</sup> portion of the filter is cut and placed in a clean silica crucible. Approximately 5ml of ethanol

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**CLIENT:** BUREAU VERITAS - EDISON

**Project:** 12014-000052.00 Revised 4/7/14

**Work Order No** A1403158

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are added and ultra-sonicated for 1 minute. Approximately 3 ul of the suspension is drop mounted onto a carbon-coated TEM grid and allowed to dry.

Grids are examined at 3000X for suitability of the prep where >50% intact filter coverage and <25% particle loading is determined. Large bundles of asbestos may be noted during this phase of the analysis. At 10,000 -20,000 X positive confirmation and further visual estimation of asbestos is determined. If there are no other particles on the filter then the asbestos observed is 100% visual estimation. Otherwise, the estimate includes all sizes relative to other particles or fibers. Morphology, selected area electron diffraction, and energy-dispersive x-ray spectroscopy are used to confirm asbestos fibers. From TEM examination as outlined above the final visual area estimation is made of asbestos on the TEM grids and the percent asbestos in the residue is then extrapolated using gravimetric records within LIMS to percent asbestos in the total sample. (NYSDOH -11645)

#### References

Chatfield Method for Quantitative Analysis of Bulk Samples for Asbestos Using Transmission Electron Microscopy (unpublished).

New York ELAP Method 198.4

NOTE: Some of the samples may have contained inseparable layers which were combined during preparation.



# ANALYTICAL RESULTS

Date: 07-Apr-14

CLIENT: BUREAU VERITAS - EDISON

Sample Type: Bulk

Work Order No.: A1403158

Date Received: 3/18/2014

Client Reference: 12014-000052.00 Revised 4/7/14

Report Date: 20-Mar-14

Method Reference: EPA-600/M4-82-020/EPA/600/R-93/116/NYELAP 198.1

Lab ID	Client Sample ID	Analyst	Date Sampled	Date Analyzed			
<b>007A</b>	<b>FM-031214-450-04A</b>	KC	03/12/2014	03/20/2014			
Layer	POB	Sample Morphology	Asbestos	%	Other Fibers	%	Particulate
(1)	2	Homogeneous White Paint	None Detected		Cellulose fiber	60%	Binder/Filler
					Mineral Wool	10%	Perlite
(2)	98	Homogeneous Beige Ceiling Tile	None Detected				
<b>008A</b>	<b>FM-031214-450-04B</b>	KC	03/12/2014	03/20/2014			
Layer	POB	Sample Morphology	Asbestos	%	Other Fibers	%	Particulate
(1)	2	Homogeneous White Paint	None Detected		Cellulose fiber	60%	Binder/Filler
					Mineral Wool	10%	Perlite
(2)	98	Homogeneous Beige Ceiling Tile	None Detected				
<b>009A</b>	<b>FM-031214-450-05A</b>	KC	03/12/2014	03/20/2014			
Layer	POB	Sample Morphology	Asbestos	%	Other Fibers	%	Particulate
(1)	2	Homogeneous Off-White Paint	None Detected		Non-Detected		Binder/Filler
(2)	8	Homogeneous White Joint Compound	None Detected		Non-Detected		Binder/Filler
(3)	10	Homogeneous White Tape	None Detected		Cellulose fiber	90%	Binder/Filler
(4)	20	Homogeneous White Joint Compound	None Detected		Non-Detected		Binder/Filler
(5)	60	Non-homogeneous Brown/White Drywall	None Detected		Cellulose fiber	1%	Binder/Filler
					Fibrous glass	1%	Gypsum Tape
<b>010A</b>	<b>FM-031214-45-05B</b>	KC	03/12/2014	03/20/2014			
Layer	POB	Sample Morphology	Asbestos	%	Other Fibers	%	Particulate
(1)	2	Homogeneous Off-White Paint	None Detected		Non-Detected		Binder/Filler
(2)	98	Non-homogeneous Brown/Gray Drywall	None Detected		Cellulose fiber	2%	Binder/Filler
					Fibrous glass	1%	Gypsum Tape

The reliable limit of quantitation of the method is 1%, although asbestos may be qualitatively detected at concentrations less than 1%. Samples for which asbestos is detected at <1% are reported as trace, "<1%". "None Detected" indicates that no asbestos fibers were observed.

Analyst(s) Name/Date: Kathy Carson 3/20/2014



# ANALYTICAL RESULTS

Date: 07-Apr-14

CLIENT: BUREAU VERITAS - EDISON

Sample Type: Bulk

Work Order No.: A1403158

Date Received: 3/18/2014

Client Reference: 12014-000052.00 Revised 4/7/14

Report Date: 20-Mar-14

Method Reference: EPA-600/M4-82-020/EPA/600/R-93/116/NYELAP 198.1

Lab ID	Client Sample ID	Analyst	Date Sampled	Date Analyzed			
<b>011A</b>	<b>FM-031214-450-06A</b>	KC	03/12/2014	03/20/2014			
Layer	POB	Sample Morphology	Asbestos	%	Other Fibers	%	Particulate
(1)	3	Homogeneous Off-White Paint	None Detected		Non-Detected		Binder/Filler
(2)	12	Homogeneous White Joint Compound	None Detected		Non-Detected		Binder/Filler
(3)	20	Homogeneous White Tape	None Detected		Cellulose fiber	90%	Binder/Filler
(4)	25	Homogeneous White Joint Compound	None Detected		Non-Detected		Binder/Filler
(5)	40	Non-homogeneous Brown/White Drywall	None Detected		Cellulose fiber	1%	Binder/Filler
					Fibrous glass	1%	Gypsum Tape
<b>012A</b>	<b>FM-031214-450-06B</b>	KC	03/12/2014	03/20/2014			
Layer	POB	Sample Morphology	Asbestos	%	Other Fibers	%	Particulate
(1)	5	Homogeneous Off-White Paint	None Detected		Non-Detected		Binder/Filler
(2)	95	Homogeneous White Joint Compound	None Detected		Non-Detected		Binder/Filler
<b>013A</b>	<b>FM-031214-450-07A</b>	KC	03/12/2014	03/20/2014			
Layer	POB	Sample Morphology	Asbestos	%	Other Fibers	%	Particulate
(1)	80	Homogeneous White/Beige Ceramic Tile	None Detected		Non-Detected		Binder/Filler
(2)	10	Homogeneous Gray Grout	None Detected		Non-Detected		Binder/Filler
(3)	5	Homogeneous Cream Mastic	None Detected		Non-Detected		Binder/Filler
(4)	5	Homogeneous White Mineral Mixture	None Detected		Non-Detected		Binder/Filler
<b>014A</b>	<b>FM-031214-450-07B</b>	KC	03/12/2014	03/20/2014			
Layer	POB	Sample Morphology	Asbestos	%	Other Fibers	%	Particulate
(1)	85	Homogeneous White/Beige Ceramic Tile	None Detected		Non-Detected		Binder/Filler
(2)	5	Homogeneous Gray Grout	None Detected		Non-Detected		Binder/Filler
(3)	5	Homogeneous Cream Mastic	None Detected		Non-Detected		Binder/Filler
(4)	5	Homogeneous White Mineral Mixture	None Detected		Non-Detected		Binder/Filler

The reliable limit of quantitation of the method is 1%, although asbestos may be qualitatively detected at concentrations less than 1%. Samples for which asbestos is detected at <1% are reported as trace, "<1%". "None Detected" indicates that no asbestos fibers were observed.

Analyst(s) Name/Date: Kathy Cannon 3/20/2014



# ANALYTICAL RESULTS

Date: 07-Apr-14

CLIENT: BUREAU VERITAS - EDISON

Sample Type: Bulk

Work Order No.: A1403158

Date Received: 3/18/2014

Client Reference: 12014-000052.00 Revised 4/7/14

Report Date: 20-Mar-14

Method Reference: EPA-600/M4-82-020/EPA/600/R-93/116/NYELAP 198.1

Lab ID	Client Sample ID	Analyst	Date Sampled	Date Analyzed
<b>015A</b>	<b>FM-031214-450-08A</b>	KC	03/12/2014	03/20/2014

Layer	POB	Sample Morphology	Asbestos	%	Other Fibers	%	Particulate
(1)	35	Homogeneous Light Brown Ceramic Tile	None Detected		Non-Detected		Binder/Filler
(2)	60	Homogeneous Gray Grout	None Detected		Non-Detected		Binder/Filler
(3)	4	Homogeneous White Paint	None Detected		Non-Detected		Binder/Filler
(4)	1	Homogeneous Cream Mineral Mixture	None Detected		Non-Detected		Binder/Filler

<b>016A</b>	<b>FM-031214-450-08B</b>	KC	03/12/2014	03/20/2014
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Layer	POB	Sample Morphology	Asbestos	%	Other Fibers	%	Particulate
(1)	5	Homogeneous Light Brown Ceramic Tile	None Detected		Non-Detected		Binder/Filler
(2)	93	Homogeneous Gray Grout	None Detected		Non-Detected		Binder/Filler
(3)	2	Homogeneous Cream Mineral Mixture	None Detected		Non-Detected		Binder/Filler Rust

## Laboratory Limits

### Kathy Cannon (KC)

Range	R Limit	Quartile Limit
0.1-1	100	+/- 1.482
10-100	100	+/- 26.676
1-10	100	+/- 5.928
Trace	100	+/- 1.482

### Laboratory

Range	R Limit	Quartile Limit
0.1-1	100	+/- 1.482
10-100	100	+/- 22.23
1-10	100	+/- 7.41
Trace	100	+/- 1.482

The reliable limit of quantitation of the method is 1%, although asbestos may be qualitatively detected at concentrations less than 1%. Samples for which asbestos is detected at <1% are reported as trace, "<1%". "None Detected" indicates that no asbestos fibers were observed.

Analyst(s) Name/Date: Kathy Cannon 3/20/2014



## ANALYTICAL RESULTS

**Client:** BUREAU VERITAS - EDISON

**Client Reference No.:** 12014-000052.00 Revised 4/7/14

**Work Order No.:** A1403158

**Date:** 07-Apr-14

Analytical Method: NYELAP METHOD 198.6 by PLM

Sample Type: Bulk

Reporting Limit (% by Weight): 0.25

Date Received: 3/18/2014 10:30:27 AM

Report Date: 3/20/2014 4:21:05 PM

Lab Sample No.	Client Sample Identification	Date Sampled	Analysis Date	Analyst	Sample Description (Morphology)	Asbestos Identification	(%)*	Total (%)**
A1403158-001A	FM-031214-450-01a	03/12/14 @12:00 am	03/20/14 @9:34 am	KC	Tan Tile	None Detected	--	Inconclusive <sup>1</sup>
A1403158-001B	FM-031214-450-01a	03/12/14 @12:00 am	03/20/14 @9:34 am	KC	Yellow Mastic	None Detected	--	Inconclusive <sup>1</sup>
A1403158-002A	FM-031214-450-01B	03/12/14 @12:00 am	03/20/14 @9:34 am	KC	Tan Tile	None Detected	--	Inconclusive <sup>1</sup>
A1403158-002B	FM-031214-450-01B	03/12/14 @12:00 am	03/20/14 @9:34 am	KC	Yellow Mastic	None Detected	--	Inconclusive <sup>1</sup>
A1403158-003A	FM-031214-450-02A	03/12/14 @12:00 am	03/20/14 @9:34 am	KC	Gray Tile	None Detected	--	Inconclusive <sup>1</sup>
A1403158-003B	FM-031214-450-02A	03/12/14 @12:00 am	03/20/14 @9:34 am	KC	Tan Mastic	None Detected	--	Inconclusive <sup>1</sup>
A1403158-004A	FM-031214-450-02B	03/12/14 @12:00 am	03/20/14 @9:34 am	KC	Gray Tile	None Detected	--	Inconclusive <sup>1</sup>
A1403158-004B	FM-031214-450-02B	03/12/14 @12:00 am	03/20/14 @9:34 am	KC	Tan Mastic	None Detected	--	Inconclusive <sup>1</sup>
A1403158-005A	FM-031214-450-03A	03/12/14 @12:00 am	03/20/14 @9:34 am	KC	White Cove Base	None Detected	--	Inconclusive <sup>1</sup>
A1403158-005B	FM-031214-450-03A	03/12/14 @12:00 am	03/20/14 @3:56 pm	KC	White Mastic & Tan Tape	None Detected	--	Inconclusive <sup>1</sup>

Sample layers were inseparable.

\*: The visual area estimation of asbestos content in the final residue.

\*\* : The calculated total percent asbestos in the sample as received.

Note: Quantitative TEM is the only method that can verify that an NOB is not an asbestos-containing material. New York Method 198.4 is recommended (TEMNOB).

--: Not Requested or Not Applicable.

1: TEM analysis required for confirmation.



# ANALYTICAL RESULTS

**Client:** BUREAU VERITAS - EDISON

**Client Reference No.:** 12014-000052.00 Revised 4/7/14

**Work Order No.:** A1403158

**Date:** 07-Apr-14

Analytical Method: NYELAP METHOD 198.6 by PLM

Sample Type: Bulk

Reporting Limit (% by Weight): 0.25

Date Received: 3/18/2014 10:30:27 AM

Report Date: 3/20/2014 4:21:05 PM

Lab Sample No.	Client Sample Identification	Date Sampled	Analysis Date	Analyst	Sample Description (Morphology)	Asbestos Identification	(%)*	Total (%)**
A1403158-006A	FM-031214-450-03B	03/12/14 @12:00 am	03/20/14 @9:34 am	KC	White Cove Base	None Detected	--	Inconclusive <sup>1</sup>
A1403158-006B	FM-031214-450-03B	03/12/14 @12:00 am	03/20/14 @9:34 am	KC	White Mastic	None Detected	--	Inconclusive <sup>1</sup>

## Microscope Documentation

Instrument	Manufacturer	Model	Description
PLM 5	Olympus	BX 53	Olympus Polarizing Microscope

\*: The visual area estimation of asbestos content in the final residue.

\*\* : The calculated total percent asbestos in the sample as received.

Note: Quantitative TEM is the only method that can verify that an NOB is not an asbestos-containing material. New York Method 198.4 is recommended (TEMNOB).

--: Not Requested or Not Applicable.

1: TEM analysis required for confirmation.

Analyst(s) Name/Date:

*Kathy Cannon*

3/20/2014



## ANALYTICAL RESULTS

**Client:** BUREAU VERITAS - EDISON

**Client Reference No.:** 12014-000052.00 Revised 4/7/14

**Work Order No.:** A1403158

**Date:** 07-Apr-14

Analytical Method: NYELAP METHOD 198.4 by TEM

Date Received: 3/18/2014 10:30:27 AM

Sample Type: Bulk

Report Date: 3/20/2014 4:21:05 PM

Reporting Limit (% by Weight): 0.1

Grid Box Identification: 03-20-14D-1

Lab Sample No.	Client Sample Identification	Date Sampled	Analysis Date	Analyst	Sample Description (Morphology)	Asbestos Identification	Asbestos (%)*	Total Asbestos (%)**
A1403158-001A	FM-031214-450-01a	03/12/14 @12:00 am	03/20/14 @2:33 pm	NG	Tan Tile	None Detected	--	< 0.1
A1403158-001B	FM-031214-450-01a	03/12/14 @12:00 am	03/20/14 @2:33 pm	NG	Yellow Mastic	None Detected	--	< 0.1
A1403158-002A	FM-031214-450-01B	03/12/14 @12:00 am	03/20/14 @2:33 pm	NG	Tan Tile	None Detected	--	< 0.1
A1403158-002B	FM-031214-450-01B	03/12/14 @12:00 am	03/20/14 @2:33 pm	NG	Yellow Mastic	None Detected	--	< 0.1
A1403158-003A	FM-031214-450-02A	03/12/14 @12:00 am	03/20/14 @2:33 pm	NG	Gray Tile	None Detected	--	< 0.1
A1403158-003B	FM-031214-450-02A	03/12/14 @12:00 am	03/20/14 @2:33 pm	NG	Tan Mastic	None Detected	--	< 0.1
A1403158-004A	FM-031214-450-02B	03/12/14 @12:00 am	03/20/14 @2:33 pm	NG	Gray Tile	None Detected	--	< 0.1
A1403158-004B	FM-031214-450-02B	03/12/14 @12:00 am	03/20/14 @2:33 pm	NG	Tan Mastic	None Detected	--	< 0.1
A1403158-005A	FM-031214-450-03A	03/12/14 @12:00 am	03/20/14 @2:33 pm	NG	White Cove Base	None Detected	--	< 0.1
A1403158-005B	FM-031214-450-03A	03/12/14 @12:00 am	03/20/14 @2:33 pm	NG	White Mastic & Tan Tape	None Detected	--	< 0.1

Sample layers were inseparable.

<: Result is less than the indicated limit of detection.

--: Present but below the detection limit

\*: The visual area estimation of asbestos content in the final residue.

\*\* : The calculated total percent asbestos in the sample as received.



# ANALYTICAL RESULTS

Client: BUREAU VERITAS - EDISON

Client Reference No.: 12014-000052.00 Revised 4/7/14

Work Order No.: A1403158

Date: 07-Apr-14

Analytical Method: NYELAP METHOD 198.4 by TEM

Date Received: 3/18/2014 10:30:27 AM

Sample Type: Bulk

Report Date: 3/20/2014 4:21:05 PM

Reporting Limit (% by Weight): 0.1

Grid Box Identification: 03-20-14D-2

Lab Sample No.	Client Sample Identification	Date Sampled	Analysis Date	Analyst	Sample Description (Morphology)	Asbestos Identification	Asbestos (%)*	Total Asbestos (%)**
A1403158-006A	FM-031214-450-03B	03/12/14 @12:00 am	03/20/14 @2:33 pm	NG	White Cove Base	None Detected	--	< 0.1
A1403158-006B	FM-031214-450-03B	03/12/14 @12:00 am	03/20/14 @2:33 pm	NG	White Mastic	None Detected	--	< 0.1

## TEM Microscope Documentation

Accelerating

Instrument	*Magnification	Voltage	Calibration Date
TEM 2/D686	14980x	100 KeV	3/7/2014

\*Magnification = Calibrated screen magnification at 15,000X. For ISO Method 10312 the calibrated screen magnification is at 20,000X

<: Result is less than the indicated limit of detection.

--: Present but below the detection limit

\*: The visual area estimation of asbestos content in the final residue.

\*\* : The calculated total percent asbestos in the sample as received.

Analyst(s) Name/Date:

*N. Gappa*

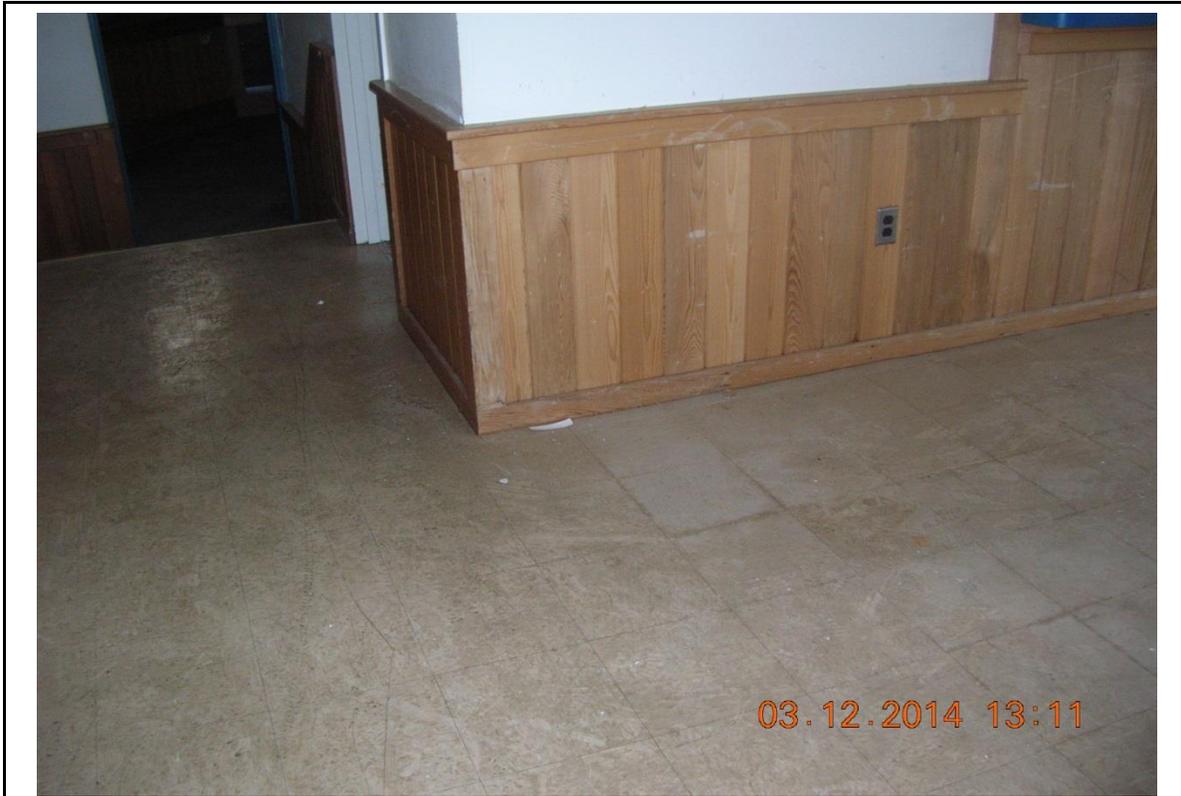
3/20/2014





**APPENDIX D**  
**PHOTO DOCUMENTATION**

<b>CLIENT:</b>	<b>U.S. Army Fort Monmouth</b>	 <b>BUREAU</b> <b>VERITAS</b>	<b>PROJECT NO.:</b>	<b>12014-000052.00</b>
<b>LOCATION:</b>	<b>Bldg. 450, Tinton Falls, NJ</b>		<b>DATE:</b>	<b>March 12, 2014</b>



03.12.2014 13:11

<b>PHOTO NO. 1</b>	<b>HA-1 Diner Eating Area – Beige Floor Tile</b>
<b>DESCRIPTION:</b>	



03.12.2014 13:12

<b>PHOTO NO. 2</b>	<b>HA-7 Ceiling Tile – HA-8 Wall-board – HA-9 Joint Compound</b>
<b>DESCRIPTION:</b>	

<b>CLIENT:</b>	<b>U.S. Army Fort Monmouth</b>	 <b>BUREAU</b> <b>VERITAS</b>	<b>PROJECT NO.:</b>	<b>12014-000052.00</b>
<b>LOCATION:</b>	<b>Bldg. 450, Tinton Falls, NJ</b>		<b>DATE:</b>	<b>March 12, 2014</b>



<b>PHOTO NO. 3</b>	<b>DESCRIPTION:</b>
	HA-3 Blue 12"x12" VCT – HA-5 Off white 4" Vinyl base cove molding



<b>PHOTO NO. 4</b>	<b>DESCRIPTION:</b>
	Exterior of Building 450, North and West side

**APPENDIX E**  
**SAMPLE LOCATIONS**

**GENERAL NOTES:**

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) CODES AND STANDARDS, AND THE LATEST EDITIONS OF THE INTERNATIONAL BUILDING CODES (IBC).

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL AUTHORITY HAVING JURISDICTION.

3. ALL MATERIALS AND WORKMANSHIP SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE LOCAL AUTHORITY HAVING JURISDICTION.

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITIES AND STRUCTURES ON THE SITE.

5. ALL WORK SHALL BE COMPLETED WITHIN THE SPECIFIED TIME FRAME.

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL AUTHORITY HAVING JURISDICTION.

7. ALL MATERIALS AND WORKMANSHIP SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE LOCAL AUTHORITY HAVING JURISDICTION.

8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITIES AND STRUCTURES ON THE SITE.

9. ALL WORK SHALL BE COMPLETED WITHIN THE SPECIFIED TIME FRAME.

10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL AUTHORITY HAVING JURISDICTION.

11. ALL MATERIALS AND WORKMANSHIP SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE LOCAL AUTHORITY HAVING JURISDICTION.

12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITIES AND STRUCTURES ON THE SITE.

13. ALL WORK SHALL BE COMPLETED WITHIN THE SPECIFIED TIME FRAME.

14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL AUTHORITY HAVING JURISDICTION.

15. ALL MATERIALS AND WORKMANSHIP SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE LOCAL AUTHORITY HAVING JURISDICTION.

16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITIES AND STRUCTURES ON THE SITE.

17. ALL WORK SHALL BE COMPLETED WITHIN THE SPECIFIED TIME FRAME.

18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL AUTHORITY HAVING JURISDICTION.

19. ALL MATERIALS AND WORKMANSHIP SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE LOCAL AUTHORITY HAVING JURISDICTION.

20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITIES AND STRUCTURES ON THE SITE.

21. ALL WORK SHALL BE COMPLETED WITHIN THE SPECIFIED TIME FRAME.

22. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL AUTHORITY HAVING JURISDICTION.

23. ALL MATERIALS AND WORKMANSHIP SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE LOCAL AUTHORITY HAVING JURISDICTION.

24. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITIES AND STRUCTURES ON THE SITE.

25. ALL WORK SHALL BE COMPLETED WITHIN THE SPECIFIED TIME FRAME.

26. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL AUTHORITY HAVING JURISDICTION.

27. ALL MATERIALS AND WORKMANSHIP SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE LOCAL AUTHORITY HAVING JURISDICTION.

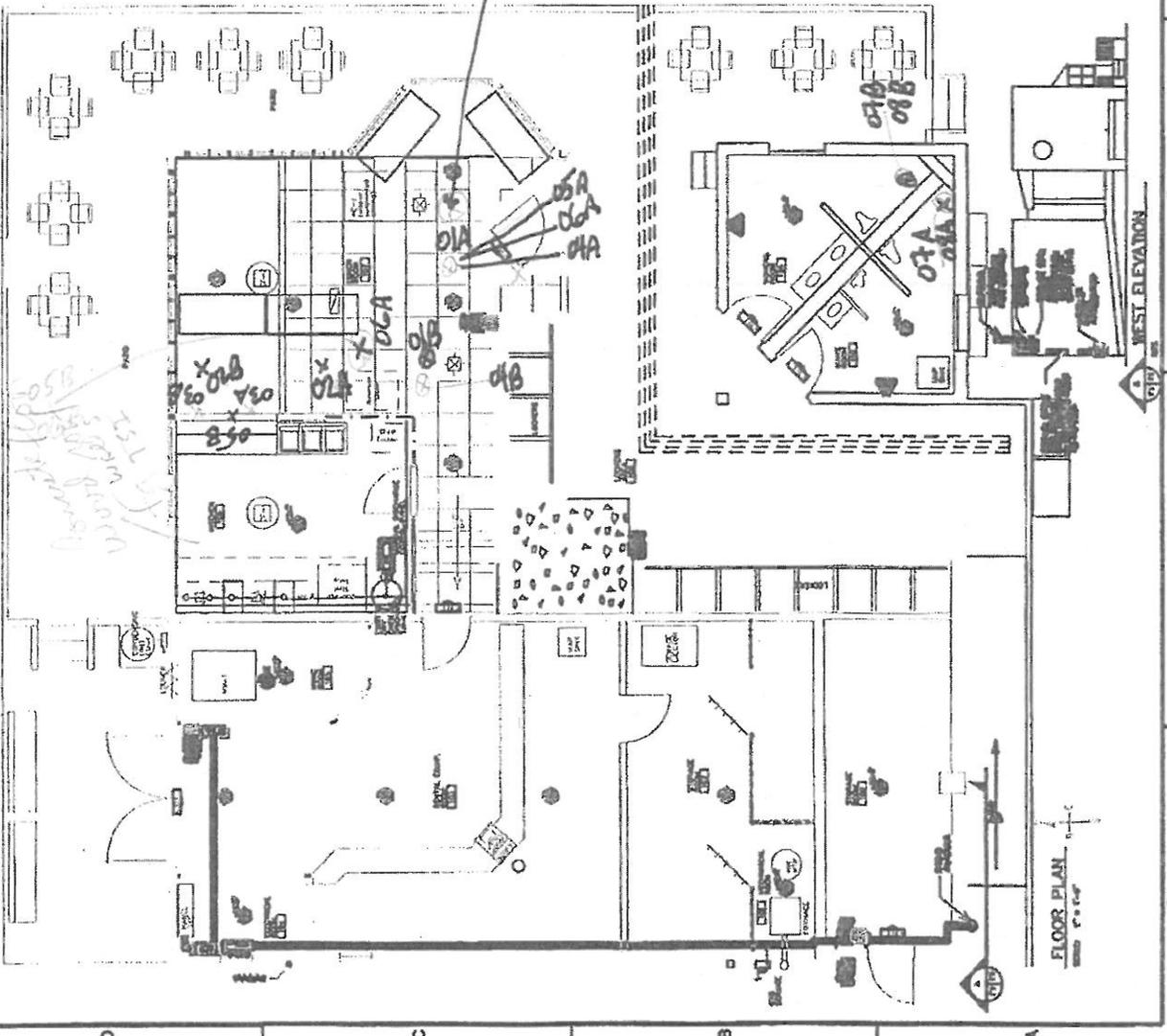
28. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITIES AND STRUCTURES ON THE SITE.

29. ALL WORK SHALL BE COMPLETED WITHIN THE SPECIFIED TIME FRAME.

30. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL AUTHORITY HAVING JURISDICTION.

DEPARTMENT OF PUBLIC WORKS Fort Monmouth, New Jersey Attn: James J. [Name]	
PROJECT: INSTALL FIRE ALARM SYSTEM BLDG 450	DATE: [Date]
DRAWN BY: [Name] CHECKED BY: [Name] APPROVED BY: [Name]	SCALE: [Scale]
SHEET NO. 171 OF 171 SHEETS	TOTAL SHEETS: 171

FM-031214-450-01A



FLOOR PLAN

WEST ELEVATION

KEY PLAN - BLDG 450

**APPENDIX F**  
**ACM INVENTORY**

**Presumed Asbestos-Containing Materials Inventory  
at  
Building 450  
U.S. Army Fort Monmouth  
Tinton Falls, New Jersey  
for  
COS, LLC**

**Bureau Veritas Project No. 12014-000052.00**

Material Location	Material Description (HA-Code)	Approximate Quantity	Condition	Comments
Building 450	Presumed Asphaltic Roofing Shingles and Associated Roofing Materials (HA-16)	~2,000 sf	Fair	None

ACM = asbestos-containing material

ft<sup>2</sup> = square feet

GOOD = The material was intact without observed evidence of significant wear, water damage, or other disturbance

FAIR = The material displayed some observed localized damage or evidence of modest wear, water damage or other disturbance.

POOR = The material was observed to be damaged with evidence of delamination, significant wear, water damage or other disturbance.

**NOTES:** This table should be used in conjunction with the remainder of the report including the Appendices. The table should not be used as a standalone document.

**APPENDIX G**  
**STAFF CREDENTIALS**

**CARDNO ATC**

104 East 25th Street, New York, NY 10010  
(212) 353-8280

certifies that

**Douglas J. McGarrity**  
XXX-XX-XXXX

(Social Security Number)

*Has Successfully Completed the Accredited 4 Hour EPA-AHERA/ASHARA under 40 CFR 763 and the  
New York State Department of Health Approved Course for*

**Asbestos Inspector Refresher**

on

**November 6, 2013**

**\*\* Please note that the official record of successful completion is the DOH 2832 Certificate of Asbestos Safety  
Training.\*\***

This course meets the requirements of TSCA Title II

Certificate#: NYS - RHIIR-19446

Exam date: 11-06-13

Expiration Date: 11-06-14

Course Location Cardno ATc, NY

Signed:



Steve Winograd, Director of Training

