

**Project MUHJ 07 - 6013
Repair Floors, HVAC, Latrines, Facility 374
Langley AFB, Virginia**

**Asbestos-containing Materials Building Survey
And Limited Lead Paint Survey of Hangar 374
100% RTA Submittal
April 3, 2009**

For:



US Air Combat Command



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Project Memo

To: Blaine Paxton
Cc: Kevin Siegel
From: Chad Smith
Date: December 12, 2008
Re: Asbestos-containing Materials Building Survey and Limited Lead Paint Survey of Hangar 374 at Langley Air Force Base

PBS&J conducted an asbestos-containing materials building survey and limited lead paint survey at Hangar 374 at Langley Air Force Base. The site visit for the surveys was conducted on November 25, 2008 by Chandler Smith of PBS&J. The asbestos survey was conducted in accordance with the EPA's "National Emission Standards for Hazardous Air Pollutants; Asbestos NESHAP Final Rule, 40 CFR 61" and OSHA's "Asbestos in Construction Standard, 29 CFR 1926.1101". The lead hazard investigation was conducted to identify real or potential lead hazards that may be encountered by facility occupants and construction personnel prior to renovations that will occur within the various buildings. The lead paint sampling was limited in nature and does not meet the requirements of a lead-based paint inspection as defined by the U.S. Department of Housing and Urban Development (HUD) and the U.S. Environmental Protection Agency (EPA). The following report of findings details the procedures and results of the survey.

Asbestos-containing Materials

Since there are renovations planned for various areas of the building, the asbestos survey focused only on those areas scheduled for renovation. The asbestos survey included the physical assessment and sampling of suspect ACM from accessible areas of the building. Bulk samples were submitted to Environmental Hazards Services, LLC, a National Voluntary Laboratory Accreditation Program (NVLAP) and American Industrial Hygiene Association (AIHA)-accredited asbestos analytical laboratory, located in Chesterfield, Virginia. The bulk samples were analyzed for asbestos content using Polarized Light Microscopy (PLM) with dispersion staining as prescribed in EPA 40 CFR Part 763.

The asbestos inspection called for the identification and sampling of suspect asbestos-containing materials (ACM) by Homogeneous Sampling Areas. A Homogeneous Sampling Area contains material that is uniform in texture and appearance, was installed at one time, and is unlikely to consist of more than one type, or formulation, of material. Suspect asbestos-containing mudded pipe fittings, ceiling tile, drywall and joint compound, floor tile and floor tile mastic was sampled as part of the survey.

Table 1 summarizes the homogeneous areas identified within the inspection area at the building and details the results of the samples collected from each homogenous material. The sample ID and Sample Result for each bulk sample is listed adjacent to the location in which the sample was collected. Copies of laboratory analytical data sheets are attached.

TABLE 1
Asbestos Sampling Results – Hangar 374
November 25, 2008

EPA Category	Homogeneous Material Description	Location	Sample ID	Sample Result
Non-ACM	1) Mudded insulation on pipe fittings	Men's restroom	AB-1	NAD
			AB-2	NAD
		Hangar space Electrical room	AB-3	NAD
			AB-21	NAD
			AB-22	NAD
Non-ACM	2) 2'x2' white ceiling tile	Offices	AB-4	NAD
			AB-5	NAD
Non-ACM	3) Drywall and joint compound	Offices	AB-6	NAD
			AB-7	NAD
			AB-8	NAD
Non-ACM	4) 12"x12" white floor tile with gray marble pattern	Offices	AB-9	NAD
			AB-10	NAD
			AB-11	NAD
Non-ACM	5a) 12"x12" tan floor tile under the 12"x12" white floor tile	Offices	AB-12	NAD
			AB-13	NAD
			AB-14a	NAD
Category I NF	5b) Black floor tile mastic	Offices	AB-14b	3% Chrysotile
Non-ACM	6a) 12"x12" white floor tile under the 12"x12" tan floor tile	Offices	AB-15a	NAD
			AB-16a	NAD
			AB-17a	NAD
Category I NF	6b) Black floor tile mastic	Offices	AB-15b	3% Chrysotile
			AB-16b	3% Chrysotile
			AB-17b	3% Chrysotile
Category I NF	7a) 12"x12" green floor tile under the 12"x12" white floor tile	Offices	AB-18a	3% Chrysotile
			AB-19a	Not Analyzed
			AB-20a	Not Analyzed
Category I NF	7b) Black floor tile mastic	Offices	AB-18b	5% Chrysotile
			AB-19b	Not Analyzed
			AB-20b	Not Analyzed
Assumed ACM	8) Boiler gaskets and packings	Boiler shed	Assumed	Assumed

ACM: Asbestos-containing material

NAD: No Asbestos Detected

NF: Non-friable

Friable ACM

The EPA National Emission Standard for Hazardous Air Pollutants (NESHAP) standard defines friable ACM as any material containing more than 1 percent asbestos that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. None of the samples of friable materials collected at the site contained asbestos.

Non-Friable ACM

The EPA NESHAP standard defines non-friable ACM as any material containing more than 1 percent asbestos that, when dry, cannot be crumbled, pulverized or reduced to powder by hand pressure. Samples of 12"x12" green floor tile contained 3% Chrysotile asbestos and samples of the underlying black floor tile mastic contained 3-5% Chrysotile asbestos. These asbestos-containing floor tile and mastic materials were covered with three layers of non-asbestos-containing floor tile. There were damaged areas of floor tile noted in the building, mainly at the entrance to the building. As such, these materials would be classified by the Asbestos NESHAP as a Category I Non-friable asbestos-containing material.

Assumed ACM

A boiler is located in a shed building outside the main Hangar building. The interior of the boiler was inaccessible at the time of the survey. The boiler may have gaskets and packings that contain asbestos. As such, any gaskets and packings that may exist inside the boiler are assumed to contain asbestos. If these materials are encountered during demolition of the boiler, they should be handled as asbestos-containing materials unless testing and analysis proves otherwise.

ACM Recommendations

The asbestos-containing green floor tile and underlying black floor tile mastic in the office areas was in good to fair condition at the time of the survey. There was evidence of broken and chipped floor tile at the entrance to the building, exposing the underlying layers of floor tile and mastic. These asbestos-containing floor tile and mastic materials may remain in place and managed under an Asbestos O&M plan, unless the planned renovation will impact the condition of these materials. An EPA-trained asbestos abatement contractor, utilizing proper and approved removal techniques, should remove and dispose of these materials prior to any renovation that will impact their current condition.

Future renovation or demolition may expose or release suspect asbestos-containing building materials that were inaccessible at the time of this inspection. If this should occur, renovation or demolition activities should stop until the suspect asbestos-containing building materials are sampled by an EPA-accredited asbestos inspector and analyzed by a laboratory accredited by NVLAP in asbestos identification.

Lead Paint

The lead-containing paint assessment included identifying possible lead hazards from facility components coated with lead-containing substances. Painted building components that may be affected by renovation activities were sampled for lead-containing paint.

Activities involving lead paint are regulated differently by various regulatory agencies. HUD and EPA regulate lead-based paint for target housing and child occupied facilities. Lead-based paint, as defined by HUD and EPA, is any paint, varnish, shellac, or other coating that contains lead equal to or greater than 0.5% lead by weight in dry film when measured by laboratory analysis. The U.S. Occupational Safety and Health Administration (OSHA) regulate employee exposures to airborne lead during construction activities under 29 CFR 1926.62, the OSHA Lead in Construction Standard. This standard does not set a minimum amount of lead in a painted surface that triggers compliance with the standard. Specifically, the standard does not correlate the amount of lead contained in the paint matrix with airborne levels of lead generated by disturbing the paint matrix.

The OSHA Lead Standard regulates lead exposures based on the type of construction activity to be performed and the potential to create airborne lead dust. The standard indicates that worker exposure to airborne lead must be maintained below the Permissible Exposure Limit (PEL) 50 µg/m³ of lead. Construction environments where the PEL is exceeded require the implementation of engineering and work practice controls and provisions for personal protection equipment and hygiene facilities.

Paint Sampling Procedures and Results

To identify the presence of lead-containing substances, bulk paint chip samples were collected from various facility components. Sampling locations were determined and a razor knife or paint scraper was used to scrape or lift the paint from the substrate. A minimum of four square inches of paint was attempted to be removed from the substrate. Paint chip samples were submitted to Environmental Hazards Services, LLC an American Industrial Hygiene Association (AIHA) accredited laboratory, located in Chesterfield, Virginia. Paint chip samples were analyzed using Atomic Absorption (AA) following EPA method No. 7420.

Table 2 summarizes the results of the bulk paint chip samples collected at the facility. Copies of laboratory analytical data sheets are attached.

**Table 2
Paint Chip Sampling Results –Hangar 374
November 25, 2008**

Location	Description	Sample ID	Sample Result Lead by weight
Interior hangar walls	Beige colored paint	PB-1	0.040
Men's restroom walls	Brown colored paint	PB-2	0.072
Men's restroom walls	Yellow colored paint	PB-3	0.21
Plumbing pipes in men's restroom	White colored paint	PB-4	0.22
Door jambs in offices	Gray colored paint	PB-5	<0.006
Chair rail in offices	Gray colored paint	PB-6	<0.004
Men's restroom floor	Gray colored paint	PB-7	<0.005
Hangar area base of wall	Brown colored paint	PB-8	0.018
Metal electrical conduit in electrical room	Greenish colored paint	PB-9	<0.004

None of the paint chip samples collected at the facility were identified as lead-based paint as defined by HUD and EPA. However, some of the bulk samples did have detectable concentrations of lead, which would define these painted surfaces as having lead-containing paint. The paint at most all of the surfaces tested appeared to be in poor condition as evidenced by peeling, flaking or severely delaminated paint.

Recommendations

Detectable levels of lead were identified in paint chip samples collected from the facility. The OSHA Lead Exposure in Construction Standard (29 CFR 1926.62) must be followed when conducting any maintenance or construction activity that will affect the matrix of the painted surfaces. The OSHA standard applies whenever construction, repair, renovation (including painting and decoration), or demolition activities are undertaken. The definition also includes, but is not limited to:

- Demolition or salvage where lead-containing materials are present;

- Removal or encapsulation of lead-containing materials;
- New construction, alteration, repair or renovation of structures, substrates, or portions of structures or substrates containing lead;
- Installation of lead-containing products;
- Lead contamination emergency cleanup;
- Transportation, disposal, storage, or containment of lead or lead-containing materials at a construction site;
- Maintenance operations associated with construction activities.

Since detectable concentrations of lead were identified on painted surfaces at the facility, workers who prepare lead-containing painted surfaces for repainting, renovation or demolition must be protected from lead exposure. Dust containing hazardous concentrations of lead may be generated during scraping or cutting materials coated with lead-containing paint. Torching of these materials may produce lead oxide fumes. Therefore, air monitoring and/or respiratory protection may be required during the demolition of materials coated with lead-containing paint.

There are currently no federal or state regulations that require the paint to be removed prior to demolition or renovation of the building. However, if renovation or demolition activity will affect any surfaces where lead-containing materials are present, the workers conducting the renovation or demolition must be protected against exposure to lead. Paint wastes generated from such activities may be subject to hazardous waste handling and disposal requirements under the Resource Conservation and Recovery Act (RCRA).

ENVIRONMENTAL HAZARDS SERVICES, L.L.C.

7469 WHITE PINE ROAD - RICHMOND, VA 23237

804-275-4788 FAX 804-275-4907

BULK ASBESTOS SAMPLE ANALYSIS SUMMARY

CLIENT: PBS & J
Moorefield III
804 Moorefield Park Drive, Suite 302
Richmond, VA 23236

DATE OF RECEIPT: 26 Nov 2008
DATE OF ANALYSIS: 26 Nov 2008
DATE OF REPORT: 29 Nov 2008

CLIENT NUMBER: 48-3650 SA
EHS PROJECT #: 2008-11-1231
PROJECT: Hangar 374

EHS SAMPLE #	CLIENT SAMPLE #/ LABORATORY GROSS DESCRIPTION	% ASBESTOS	OTHER MATERIALS
01	AB-1/ Off-White Powder; Brown Fib.; Paint-Like	NAD	10% Cellulose 20% Fibrous Glass 70% Non-Fibrous
02	AB-2/ Off-White Powder; White Paint-Like; Fib.	NAD	10% Cellulose 20% Fibrous Glass 70% Non-Fibrous
03	AB-3/ Off-White Powder	NAD	20% Fibrous Glass 80% Non-Fibrous
04	AB-4/ White Paint-Like; Beige Fib.	NAD	45% Cellulose 35% Fibrous Glass 20% Non-Fibrous
05	AB-5/ White Paint-Like; Beige Fib.	NAD	45% Cellulose 35% Fibrous Glass 20% Non-Fibrous
06	AB-6/ White Paint-Like; Brown Fib.; Off-White Powder	NAD	15% Cellulose 85% Non-Fibrous
07	AB-7/ White Paint-Like; Brown Fib.; Off-White Powder	NAD	15% Cellulose 85% Non-Fibrous
08	AB-8/ White Paint-Like; Brown Fib.; Off-White Chalky	NAD	15% Cellulose 85% Non-Fibrous
09	AB-9/ Off-White Vinyl	NAD	100% Non-Fibrous
10	AB-10/ Off-White Vinyl	NAD	100% Non-Fibrous

ENVIRONMENTAL HAZARDS SERVICES, L.L.C.

CLIENT NUMBER: 48-3650 SA

EHS PROJECT #: 2008-11-1231

PROJECT: Hangar 374

EHS SAMPLE #	CLIENT SAMPLE #/ LABORATORY GROSS DESCRIPTION	% ASBESTOS	OTHER MATERIALS
11	AB-11/ Off-White Vinyl	NAD	100% Non-Fibrous
12	AB-12/ Beige Vinyl	NAD	100% Non-Fibrous
13	AB-13/ Beige Vinyl	NAD	100% Non-Fibrous
14A	AB-14 (a)-Tile/ Beige Vinyl	NAD	100% Non-Fibrous
14B	AB-14 (b)-Mastic/ Black Adhes.	3% Chrysotile 3% Total Asbestos	97% Non-Fibrous
15A	AB-15 (a)-Tile/ Beige Vinyl	NAD	100% Non-Fibrous
15B	AB-15 (b)-Mastic/ Black Adhes.	3% Chrysotile 3% Total Asbestos	97% Non-Fibrous
16A	AB-16 (a)-Tile/ Beige Vinyl	NAD	100% Non-Fibrous
16B	AB-16 (b)-Mastic/	DID NOT ANALYZE	
17A	AB-17 (a)-Tile/ Beige Vinyl	NAD	100% Non-Fibrous
17B	AB-17 (b)-Mastic/	DID NOT ANALYZE	
18A	AB-18 (a)-Tile/ Green Vinyl	3% Chrysotile 3% Total Asbestos	97% Non-Fibrous
18B	AB-18 (b)-Mastic/ Black Adhes.	5% Chrysotile 5% Total Asbestos	95% Non-Fibrous
19A	AB-19 (a)-Tile/	DID NOT ANALYZE	
19B	AB-19 (b)-Mastic/	DID NOT ANALYZE	
20A	AB-20 (a)-Tile/	DID NOT ANALYZE	
20B	AB-20 (b)-Mastic/	DID NOT ANALYZE	
21	AB-21/ Off-White Powder	NAD	20% Fibrous Glass 80% Non-Fibrous

ENVIRONMENTAL HAZARDS SERVICES, L.L.C.

CLIENT NUMBER: 48-3650 SA
EHS PROJECT #: 2008-11-1231
PROJECT: Hangar 374

EHS SAMPLE #	CLIENT SAMPLE #/ LABORATORY GROSS DESCRIPTION	% ASBESTOS	OTHER MATERIALS
22	AB-22/ Off-White Powder	NAD	20% Fibrous Glass 80% Non-Fibrous

QC SAMPLE: M1-1993-1
QC BLANK: SRM 1866 Fiberglass
REPORTING LIMIT: 1% Asbestos
METHOD: Polarized Light Microscopy, EPA Method 600/R-93/116 *
ANALYST: Laura Holder

Reviewed By Authorized Signatory:


Howard Varner, General Manager
Irma Faszewski, Quality Assurance Coordinator

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written consent of Environmental Hazards Services, L.L.C. California Certification #2319 NY ELAP #11714. All information concerning sampling location, date, and time can be found on Chain-of-Custody. Environmental Hazards Services, L.L.C. does not perform any sample collection.

Environmental Hazards Services, L.L.C. recommends reanalysis by point count (for more accurate quantification) or Transmission Electron Microscopy (TEM), for enhanced detection capabilities) for materials regulated by the EPA NESHAP (National Emission Standards for Hazardous Air Pollutants) and found to contain less than ten percent (<10%) asbestos by polarized light microscopy (PLM). Both services are available for an additional fee.

* All California samples analyzed by Polarized Light Microscopy, EPA Method 600/M4-82-020, Dec. 1982.

LEGEND NAD = no asbestos detected
SCF = suspected ceramic fibers

plm1.dot/05AUG2008/REV3/pd

-- PAGE 03 of 03 -- END OF REPORT --

ENVIRONMENTAL HAZARDS SERVICES, L.L.C.
 7469 Whitepine Road Richmond, Virginia 23237 Phone (804) 275-4788 Fax (804) 275-4907

CHAIN OF CUSTODY FORM

Company Name: PHSAJ Date: 11/25/08
 Address: 7200 Glen Forest Dr #303 Contact Name: Chris Smith
 City, State, Zip: Bedford VA 23226 Sampler Name: Chris Smith
 EHS Client Account #: _____ Project #: Allypa 374
 Phone #: 5700 7600 Fax #: 570 5129
 P.O. #: _____

3 day standard turnaround will be given unless otherwise marked: SAME DAY _____ NEXT DAY _____

Sample Number	Sample & Date	Asbestos					Lead					Other Metals <small>(Specify metals below)</small>			Indoor Air Quality				Particulate: Total Nuisance (NIOSH 0500) Respirable (NIOSH 0600)	Comments <small>* Specify: -Total Fungal Count w/ID -Stachybotrys Culture w/Total Fungal Count & IDs -Total Thermophilic Fungal Count w/ID -TAT 5-7 DAY</small>						
		Bulk ID by PLM	(PCM) Fiber Count	PLM Point Count	PLM Gravimetric	TEM AHERA (Air)	TEM Chatfield (Bulk)	Air	Paint (%)	Paint (PPM)	Paint (mg/cm ²)	Soil	Wine * (See Note)	TCLP (Pb)	Waste Water	TCLP RCRA 8	Welding Fume	Toxic Metal Profile			Biocassette	Slide	Surface Swab	Surface Tape	Bulk	Culturable
AB-18	11/25/08	X																								
AB-19		X																								
AB-20		X																								
AB-21		X																								
AB-22		X																								

* Do wipe samples submitted meet ASTM E1792 requirements? Yes No

Released by: Chris Smith Signature: _____ Date/Time: 11/26/08
 Released by: Chris Smith Signature: _____ Date/Time: 11/26/08
 Received by: _____ Signature: _____ Date/Time: _____



7469 Whitepine Road
 Richmond, VA 23237
 Toll Free: 800.347.4010 Fax: 804.275.4907

Lead Paint Chip Analysis Report

Test Address:
 Hangar 374

Client:
 PBS & J
 AP Dept: 5300 W. Cypress St.
 Tampa, FL 33607

Report Number: 08112600001A
Received Date / Time: 11/26/2008 09:51 AM
Reported Date / Time: 11/28/2008 09:45 AM
Method: EPA SW846,7420

Shipping #:

Analysis By Environmental Hazard Services, LLC
 AIHA Accreditation #: 100420

Deitra Bray

Account Number: Fax Number:
 48X3650 804/560-5129

Laboratory Results

Deitra Bray, QA/QC

Lab Sample #	Client Sample ID Collection Location	Collected Date Analyzed Date	Log In Condition	% Pb by Wt.	Narr. ID
1	PB-1 NP	11/25/2008 11/26/2008	Acceptable	0.040	
2	PB-2 NP	11/25/2008 11/26/2008	Acceptable	0.072	
3	PB-3 NP	11/25/2008 11/26/2008	Acceptable	0.21	
4	PB-4 NP	11/25/2008 11/26/2008	Acceptable	0.22	
5	PB-5 NP	11/25/2008 11/26/2008	Acceptable	<0.006	
6	PB-6 NP	11/25/2008 11/26/2008	Acceptable	<0.004	
7	PB-7 NP	11/25/2008 11/26/2008	Acceptable	<0.005	
8	PB-8 NP	11/25/2008 11/26/2008	Acceptable	0.018	
9	PB-9 NP	11/25/2008 11/26/2008	Acceptable	<0.004	

The Hud lead guidelines for lead paint chips are 0.50% by Weight, 5000 ppm, or 1.0 mg/cm². The Reporting Limits (RL) is 10 µg Total Pb. Paint chip area and results are calculated based on area measurements determined by the client. All internal quality control requirements associated with this batch were met, unless otherwise noted.

Analytical results and reports are generated by Environmental Hazards Services, LLC at the request of and for the exclusive use of the person or entity (client) named on this report. Results, reports or copies of same will not be released by Environmental Hazards Services, LLC to any third party without the prior express written consent from the client named in this report. This report applies only to those samples taken at the time, place and location referenced by the client. This report makes no express or implied warranty or guarantee as to the sampling methodology used by the individual performing the sampling. The client is solely responsible for the use and interpretation of these test results and Environmental Hazards Services, LLC makes no express or implied warranties as to such use or interpretation. Environmental Hazards Services, LLC is not able to make and does not make a determination as to the environmental soundness, safety or health of a property from only the samples sent to their laboratory for analysis. Unless otherwise specified by the client, Environmental Hazards Services, L.L.C. reserves the right to dispose of all samples after the testing of such samples is sufficiently completed or after a five day period, whichever is greater.

LEGEND Pb = lead µg = microgram ppm = parts per million
 ml = milliliter g = gram

