



SNYDER™
ENVIRONMENTAL

LEAD WIPE IDFR INSPECTION REPORT

871ST TROOP COMMAND

ARKANSAS STRONG

Fisher National Guard Armory
2400 N. Poplar Street
North Little Rock, AR

prepared for:
Military Department of Arkansas
ATTN: Major Roger Evans
Camp Robinson
North Little Rock, AR 72114
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LEAD WIPE IFDR INSPECTION REPORT

For

**Fisher National Guard Armory
2400 N. Poplar Street
North Little Rock, AR**

Introduction

This report summarizes findings and recommendations regarding the potential presence of lead contaminated walls, floors, or stored items in the former indoor firing range located in the Fisher National Guard Armory in North Little Rock, Arkansas. Snyder Environmental Field Technician, Mr. Justin Stuart, performed the on-site study to: 1) identify suspect contaminated areas, 2) collect lead wipe samples for analysis, and 3) quantify suspect contaminated areas. The on-site investigation was performed on 28 November 2017.

Purpose of Study

The purpose of this study was to confirm or deny the presence of contamination of lead in the former indoor firing range, to identify the location of the lead contamination, to provide response action recommendations, and to facilitate the closure of the firing range.

Sampling Plan

Sampling is conducted in accordance with NG Pam 420-15, Section 2-4, "Wipe Sampling Protocol and Media." A template measuring 10 centimeters by 10 centimeters square, approximately 4 inches square is used to measure and mark the area in which the wipe sample will be collected. Samples are staggered to different areas of the range utilizing a grid system.

Analytical Methodology

LEAD WIPE lead dust sampling wipes are used for sample collection, placed in plastic sealable vials and then shipped to Environmental Enterprise Group, LLC in Russellville, Arkansas for analysis by W NIOSH 9100 method.

The EPA standard for lead in dust per square foot (40 CFR 745) specifies limits of 40 micrograms of lead in dust in areas where children, pregnant women or people of child-bearing age occupy the area. The National Guard Bureau recommends a limit not to exceed 200 micrograms of lead in dust per square foot.

Findings

During the inspection, eight (8) wipe samples were collected. A summary of the samples collected and the analytical results is provided below:

<u>Sample #</u>	<u>Sample Surface</u>	<u>Sample Location</u>	<u>Sample Size</u>	<u>Lead Content (ug/sq.ft)</u>
FA-01	Concrete Block	South Wall – Near Entry	12" x 12"	<5.00
FA-02	Concrete Block	South Wall – Near Storage	12" x 12"	<5.00
FA-03	Concrete Block	East Wall – Center	12" x 12"	<5.00
FA-04	Concrete Block	North Wall – Across from Storage	12" x 12"	<5.00
FA-05	Concrete Block	North Wall – Near Exit	12" x 12"	<5.00
FA-06	Concrete Block	West Wall – Center	12" x 12"	<5.00
FA-07	Floor Tile	Floor – Center of Space	12" x 12"	<5.00
FA-08	Ceiling Tile	Ceiling – Center of Space	12" x 12"	<5.00

Positive Lead Wipe Samples

The lead wipe samples were analyzed for total lead concentration. None (0) of the eight (8) lead wipe samples collected were found to contain lead in concentrations above the National Guard Bureau's recommended limit of 45 ug/sq.ft.

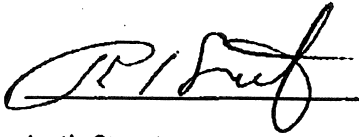
Limitations

Every effort was made during the assessment to determine the existence of lead contamination within the firing range. However, no absolute guarantee or warranty is given regarding the existence or non-existence of lead contamination.

Disclaimer

Conclusions presented are based on laboratory results of random samples taken from surfaces in the subject indoor firing range. Snyder Environmental is responsible for the analysis of those samples, however, inferences drawn from sampling are subject to error, and the company is not responsible for this error.

This Report Prepared by:



**Justin Stuart
Project Coordinator
Certified Inspector #015878
Snyder Environmental**

This Report Reviewed by:



**Justin Dixon
President
Certified Inspector #013021
Snyder Environmental**

Appendix A
Laboratory Analysis Reports



SNYDER ENVIRONMENTAL
6709 WAYNE DRIVE
NORTH LITTLE ROCK, AR 72118

L1858-053287

**** RUSH ****
LEAD WIPE SAMPLING

PHONE: 501-901-2776
FAX: 501-907-1129

PROJECT #

ARRG

Date Sampled:

28-Nov-17

Inspector Name:

Justin Stuart

Inspection Field Sheet
Project Name:
Project Address:

Fisher National Guard Ammory
2600 N. Poplar Street
North Little Rock, AR

#	Sample Number	Sample Type	Substrate	Location	Condition	SF/LE
1	1117398 FA-01	Lead Wipe	Concrete Block	South Wall - Near Entry	Good	12"x12"
2	1117299 FA-02	Lead Wipe	Concrete Block	South Wall - Near Storage	Good	12"x12"
3	1117300 FA-03	Lead Wipe	Concrete Block	East Wall Center	Good	12"x12"
4	1117301 FA-04	Lead Wipe	Concrete Block	North Wall - Across from Storage	Good	12"x12"
5	1117302 FA-05	Lead Wipe	Concrete Block	North Wall - Near Exit	Good	12"x12"
6	1117303 FA-06	Lead Wipe	Concrete Block	West Wall Center	Good	12"x12"
7	1117304 FA-07	Lead Wipe	Floor Tile	Floor of Space	Good	12"x12"
8	1117305 FA-08	Lead Wipe	Ceiling Tile	Ceiling of Space	Good	12"x12"

Relinquished By:

[Signature]

Received By:

[Signature]

Time:

1351

Date:

28-Nov-17

Time:

1045

Date:

11/30/17

6 of 6



**E n v i r o n m e n t a l
E n t e r p r i s e G r o u p , I n c .**

220 North Knoxville Russellville, Arkansas 72801
Phone (479) 968-6767 Fax (479) 968-1956
www.eegonline.com

Client: Snyder Environmental
Attn: Justin Dixon
Address: 7031 Dewafelbakker Lane
North Little Rock, AR 72113
Method: EPA SW846 7000B

Job Number: L1058-053287
Date Received: 11/30/17
Date Reported: 12/1/17
Project Name: Fisher National Guard Armory
Analyst: D.B.

ANALYTICAL REPORT

Dear Mr. Dixon:
The following is our report on the wipe samples submitted for analysis.

Control Number	Client Sample I.D.	Sample Area (ft ²)	Parameter	Total Lead (ug/wipe)	Lead Conc. (ug/ft ²)	Date Analyzed
1117298	FA-01	1.00	Lead	<5.00	<5.00	12/1/17
1117299	FA-02	1.00	Lead	<5.00	<5.00	12/1/17
1117300	FA-03	1.00	Lead	<5.00	<5.00	12/1/17
1117301	FA-04	1.00	Lead	<5.00	<5.00	12/1/17
1117302	FA-05	1.00	Lead	<5.00	<5.00	12/1/17
1117303	FA-06	1.00	Lead	<5.00	<5.00	12/1/17
1117304	FA-07	1.00	Lead	<5.00	<5.00	12/1/17
1117305	FA-08	1.00	Lead	<5.00	<5.00	12/1/17

QUALITY ASSURANCE

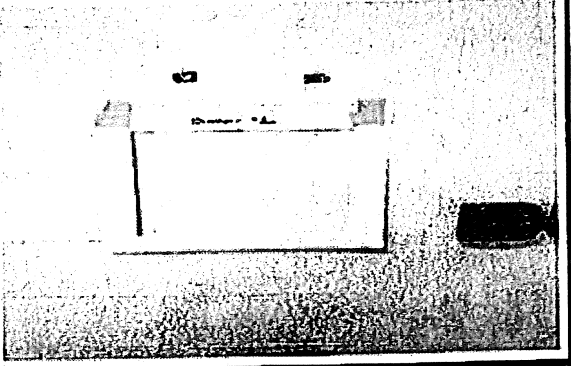
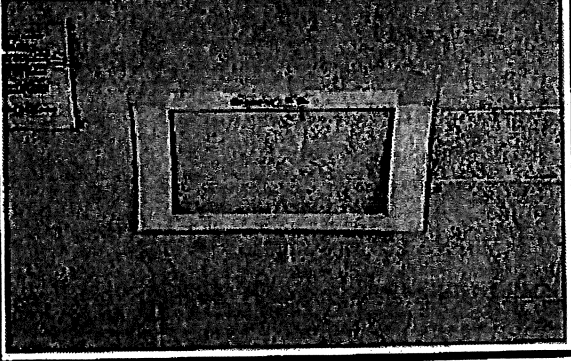
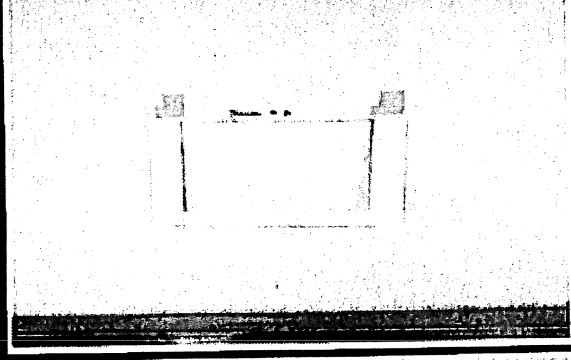
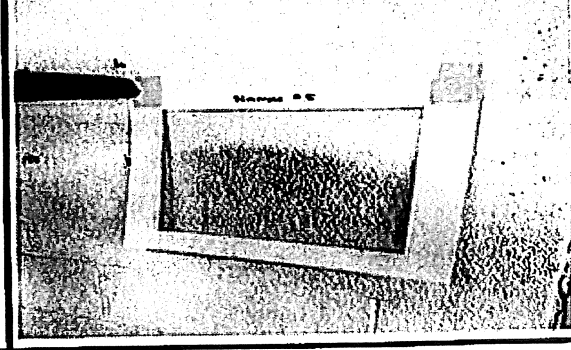
QC I.D.	Sample Description	% Recovery
120117W-11	CCV	102.0%
120117W-11	LCS	106%
120117W-11	LCSD	101%
120117W-11	MB	0.05

Samples analyzed by ELLAP Laboratory # 100420.
The Federal lead guidelines for dust clearance levels by wipe sampling: Floors (FL) - 40 ug/ft², Interior Window Sills (SL) - 250 ug/ft², Window Wells (WW) - 400 ug/ft². The Reporting Limit (RL) is 10.0 ug Total Pb. Reported results are not corrected for field blanks. Dust wipe 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. Results represent the analysis of samples submitted by the client. Sample location, description, area, etc., was provided by the client.

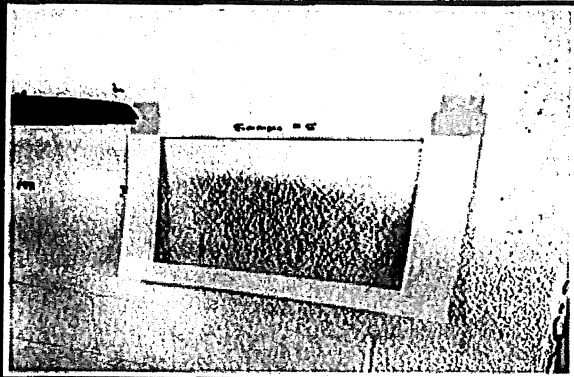
Staugmen
Reviewed By

M. Ch...
Reviewed By

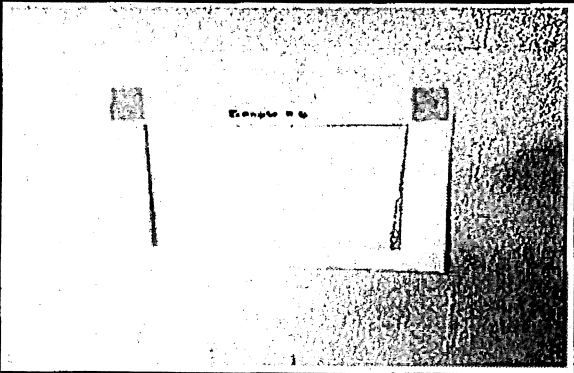
Appendix B
Photographs

<p>FA-01: South Concrete Block Wall</p>	
<p>FA-02: South Concrete Block Wall</p>	
<p>FA-03: East Concrete Block Wall</p>	
<p>FA-04: North Concrete Block Wall</p>	

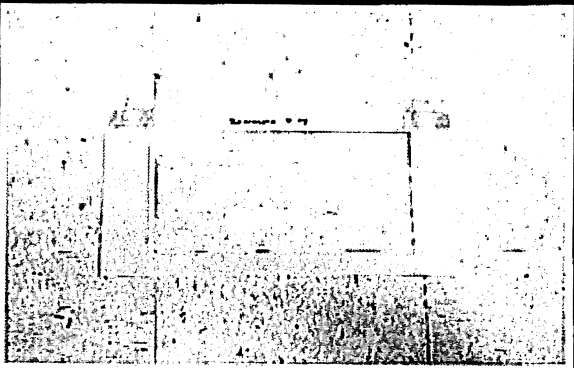
FA-05: North Concrete Block Wall



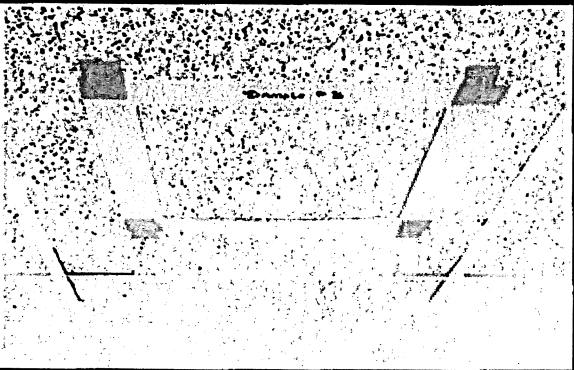
FA-06: West Concrete Block Wall



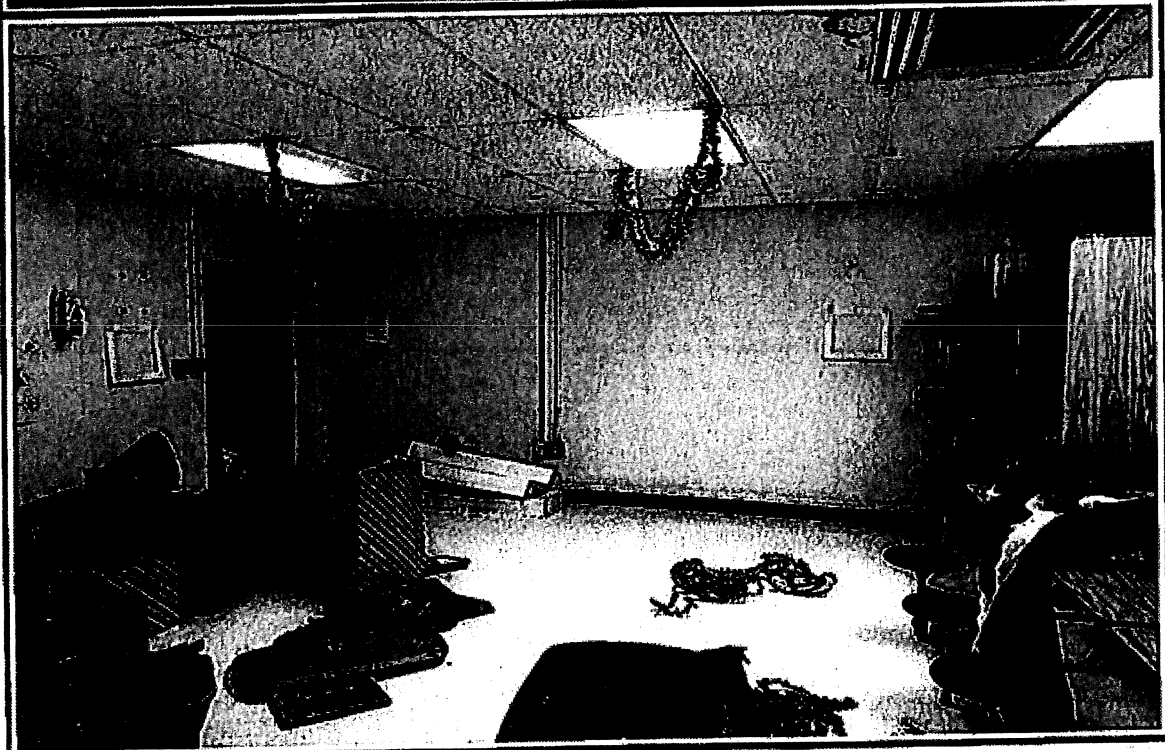
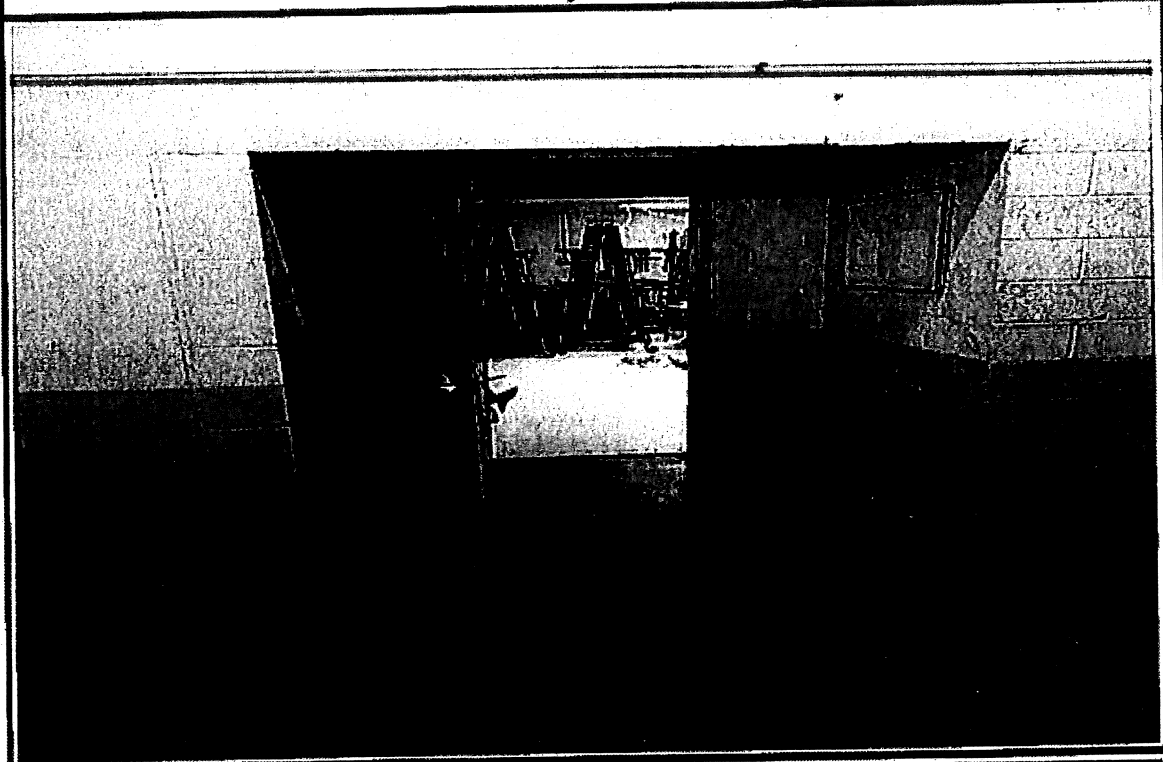
FA-07: Floor Tile



FA-08: Ceiling Tile

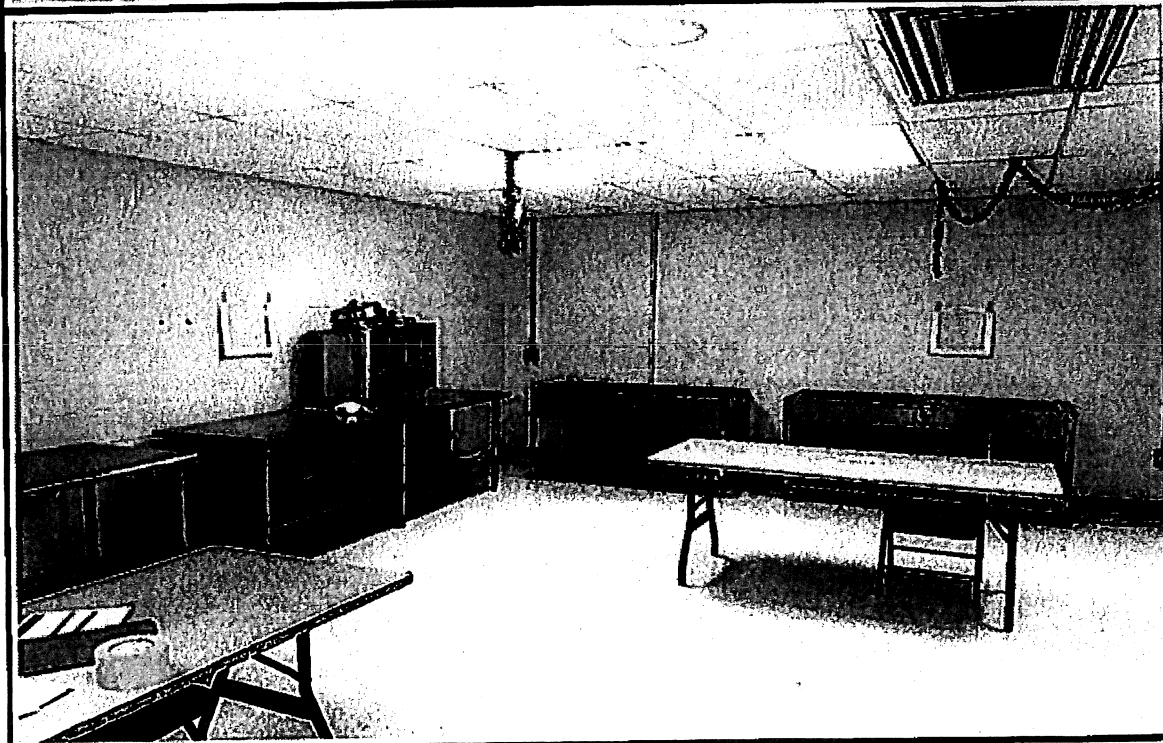


Entry Point



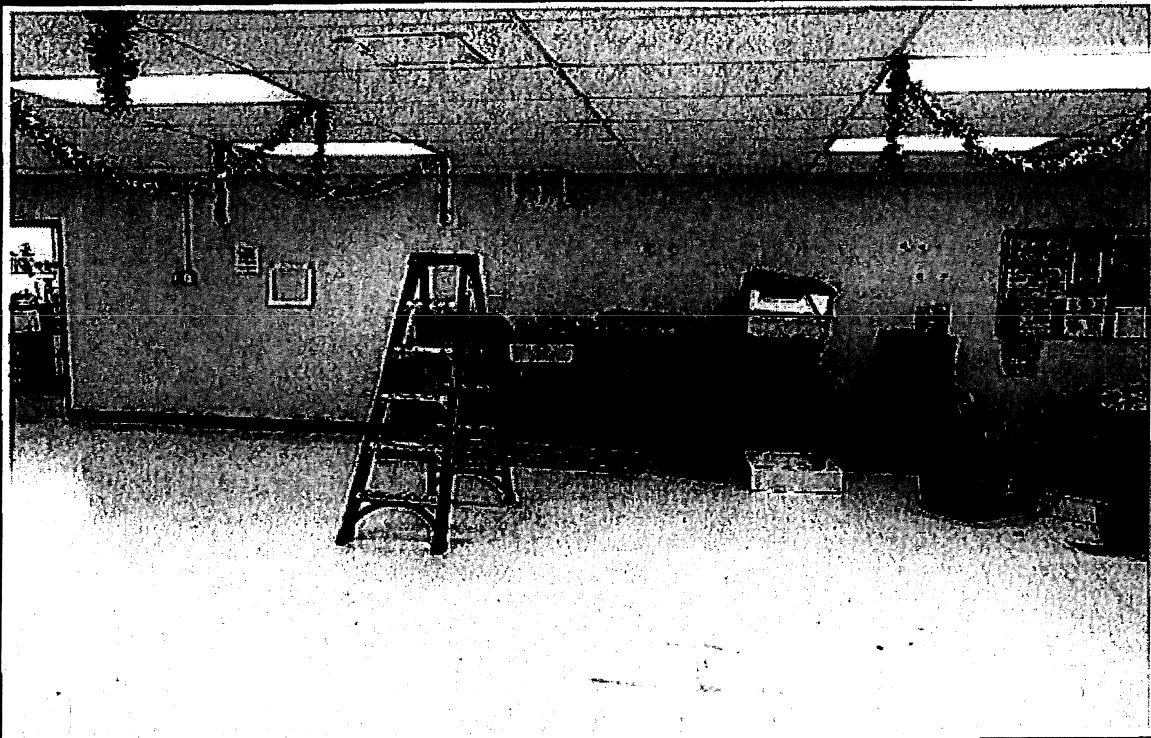
Samples 1 & 6

Sample 2



Samples 3 & 4

Sample 5

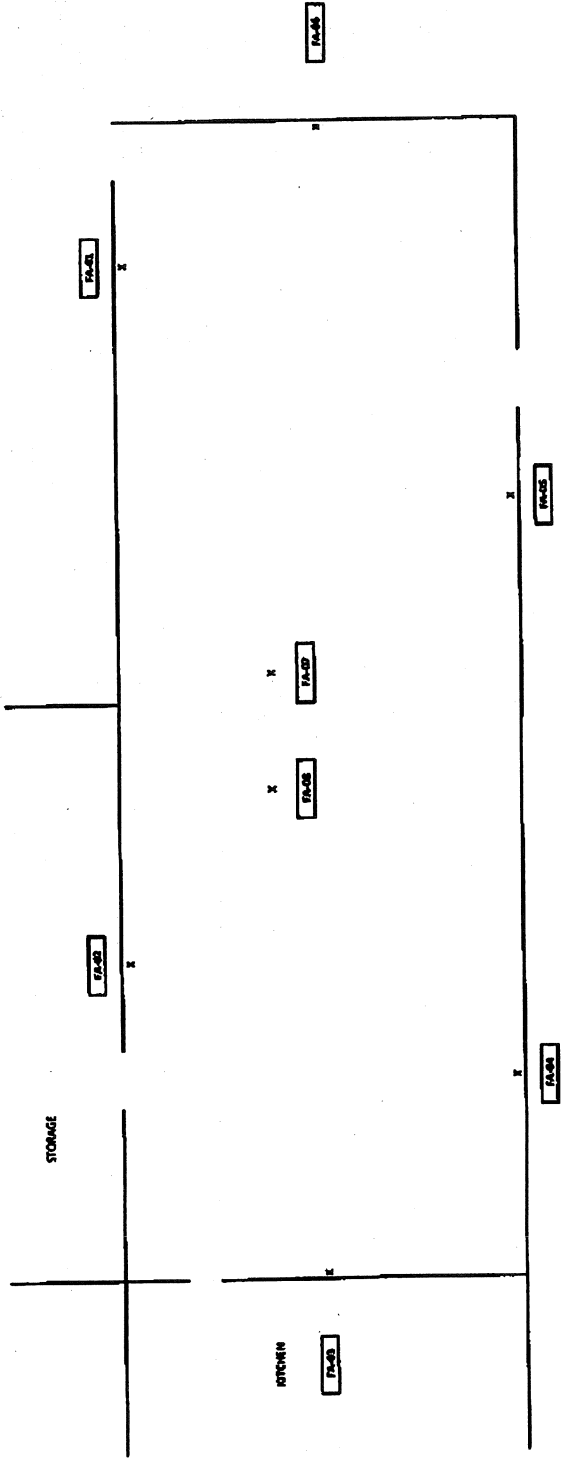


Samples 2, 7, & 8

Appendix C

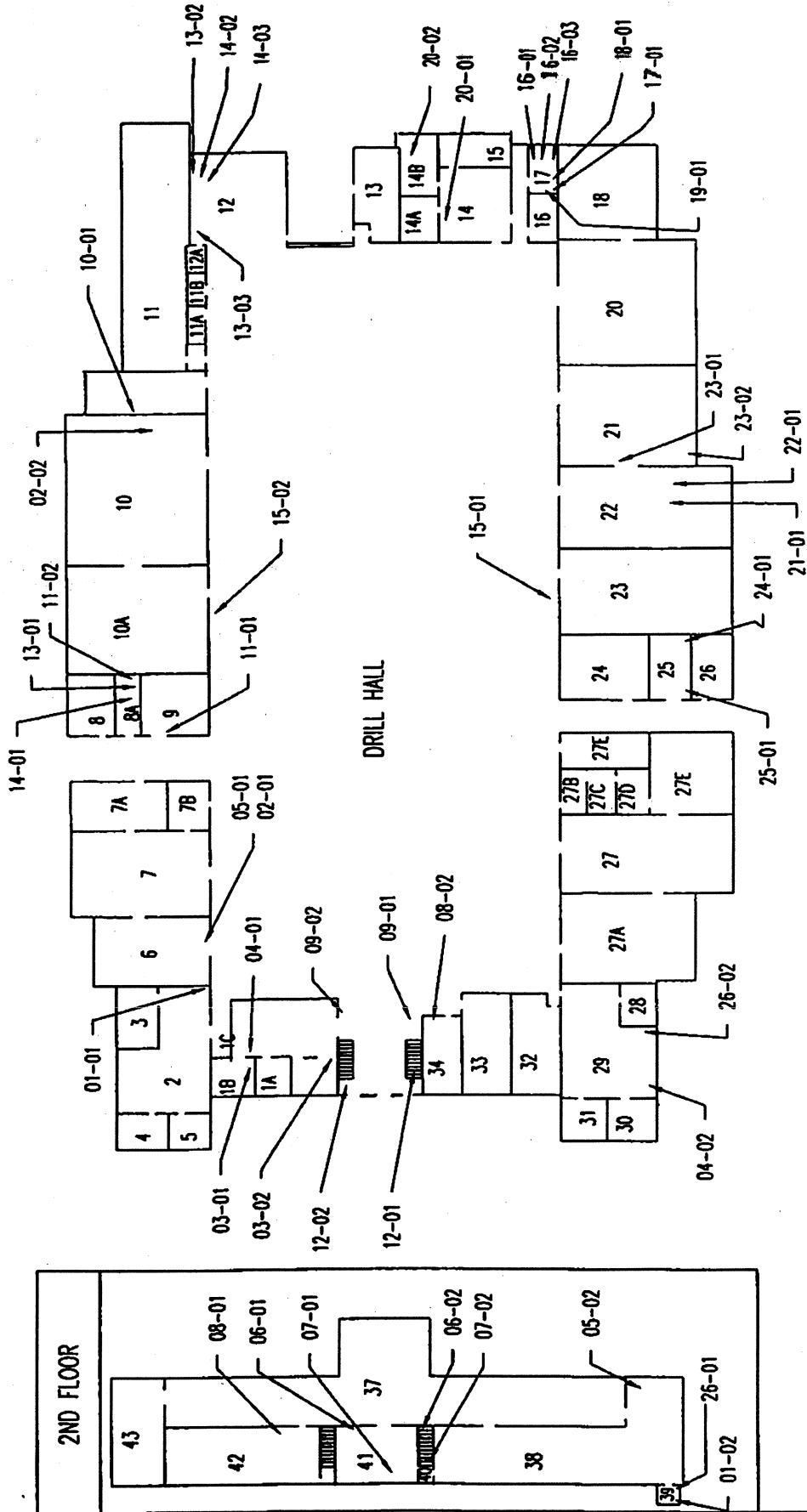
Site Diagram

FISHER NATIONAL GUARD ARMORY - 2600 N. POPLAR STREET - NORTH LITTLE ROCK, AR - LEAD WIPE SAMPLING LOCATIONS



ASBESTOS-CONTAINING MATERIAL LOCATIONS

ASBESTOS SAMPLE LOCATIONS



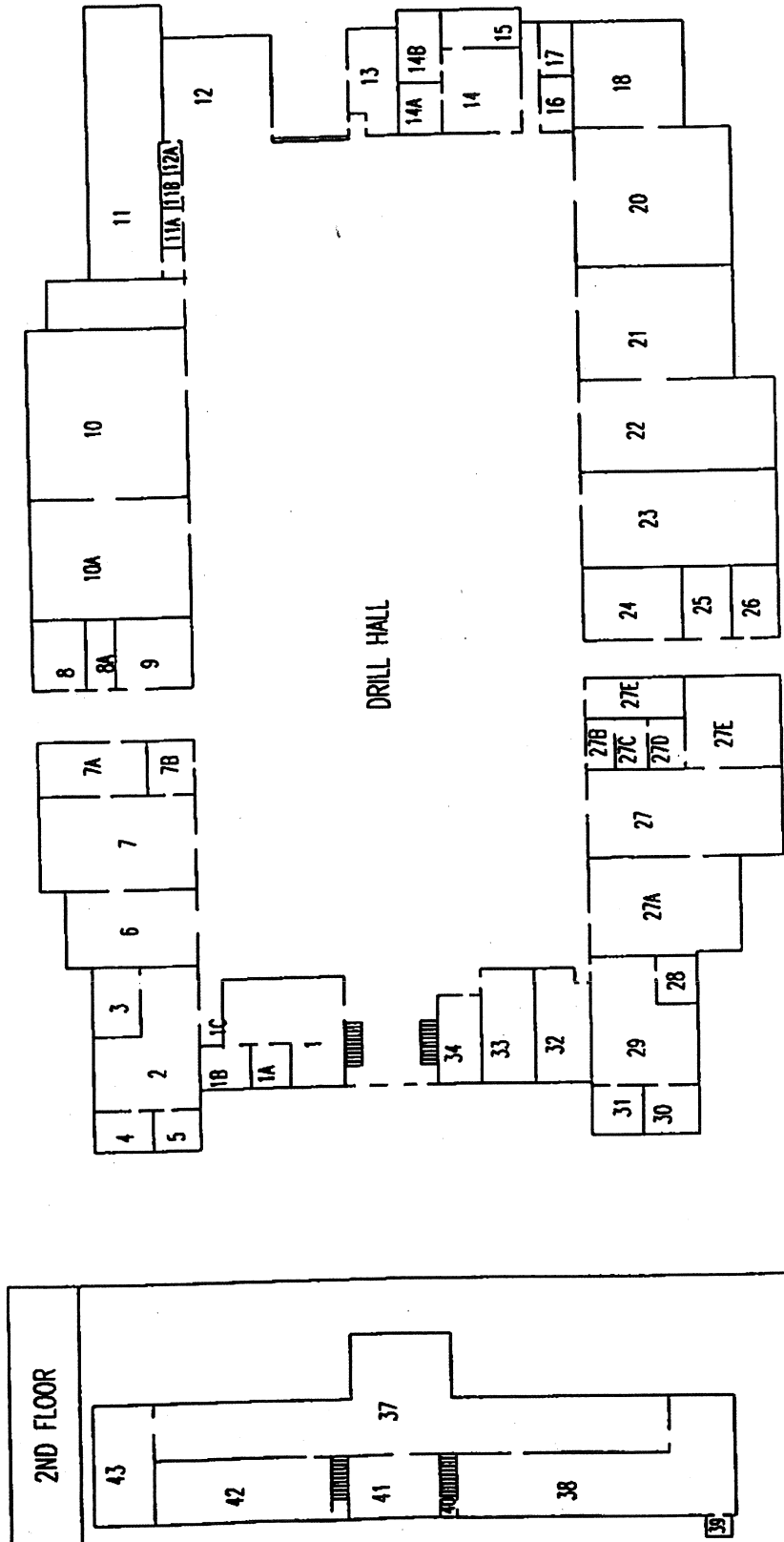
DRAWN BY: SHANE JOHNSON
 PROJECT #: 98-132
 DATE: 12/17/98
 DRAWING #: 98-132-02

ECOLOGIC, INC.
 124 WEST CAPITAL, SUITE 1890
 LITTLE ROCK, AR
 PHONE: 501-399-9375

ASBESTOS-CONTAINING MATERIAL SURVEY
 FISHER ARMORY
 2600 POPLAR STREET, NORTH LITTLE ROCK, AR 72114

SAMPLE LOCATIONS

SITE PLAN



DRAWN BY: SHANE JOHNSTON
 PROJECT #: 98-132
 DATE: 12/17/98
 DRAWING #: 98-132-01

ECOLOGIC, INC.
 124 WEST CAPITAL, SUITE 1890
 LITTLE ROCK, AR
 PHONE: 501-399-9375

ASBESTOS-CONTAINING MATERIAL SURVEY
 FISHER ARMORY
 2600 POPLAR STREET, NORTH LITTLE ROCK, AR 72114

SITE PLAN

APPENDIX

LIMITATIONS

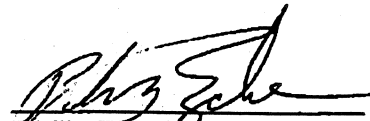
Ecologic, Inc. performed service in a manner consistent with the level of care and expertise exercised by members of the environmental auditing/risk assessment profession. Ecologic, Inc. does not imply or guarantee that every material on the property, or in the property building, which may potentially have asbestos as a component has been identified and/or sampled. Ecologic, Inc. only samples texture and flooring materials in designated units. Over 3,000 materials/products in or imported into the United States have been identified in which asbestos has historically been a component. The sampling program is intended to identify accessible materials most likely to contain asbestos in quantities subject to regulation. A guarantee that all asbestos materials have been identified and/or samples would require cost-prohibitive and destructive sampling protocols.

All conclusions and recommendations regarding this property represent the professional opinions of the Ecologic, Inc. personnel involved with the project, and the results of this report should not be considered a legal interpretation of existing environmental regulations. Ecologic, Inc. assumes no responsibility or liability of for errors in data utilized from sources outside of Ecologic, Inc. or developments resulting from situations outside the scope of this project.

Prepared by:


Shane Johnston
Project Manager

Reviewed by:


Philip Zabel
Senior Project Manager

Recommendations and Cost Estimates Continued

Sample #s	Material Description	Location	Quantity	Unit Price	Total Removal Cost
17-01a	3" Pipe Insulation	Room 17	~ 10 linear feet	\$150/ glove- bag	\$1,500
17-01b	3" Pipe Insulation Wrapping	Room 17	~ 10 linear feet	**	**
18-01a	3" Pipe Joint Mud	Room 17	~2 joints	\$150/ glove- bag	\$300
18-01b	3" Pipe Joint Mud Wrapping	Room 17	~2 joints	**	**
20-01b	12"x12" Off-white Floor Tile Adhesive	Rooms 14,14a,14b	~ 861 square feet	\$1.75	\$1,507
21-01a	Black Linoleum	Room 22	~ 150 square feet	\$2.00	\$300
22-01a	12"x12" Off-white Speckled Floor Tile	Room 22,27a	~ 631 square feet	\$1.75	\$1,105
24-01a	2" Dark Pipe Insulation	Room 25	~ 10 linear feet	\$150/ glove- bag	\$1,500
24-01b	2" Dark Pipe Insulation Wrapping	Room 25	~ 10 linear feet	**	**

- * Cost estimate includes removal of floor tile and floor tile adhesive.
- ** Cost estimate includes removal of pipe insulation, wrapping and mud.

Note: These cost estimates are based on "stand-alone" sums. Significant cost savings can be gained if an abatement contractor can mobilize to remove all of the materials under one contract. Environmental consulting, project manager's fee is not added to the total cost. The cost for consulting fees such as abatement project design, project management or air monitoring is dependent upon the amount of project oversight and air sampling to be performed. Because of the recent change in the Arkansas Asbestos Abatement Regulations, daily area air monitoring is not mandated. Clearance air sampling is required for abatement projects requiring containment or enclosure procedures. Some abatement contractors have insurance policies which prohibit the collection of air samples by the contractor's employees - they require a third-party consultant.

Sample #s	Material Description	Location	Quantity	Unit Price	Total Removal Cost
06-01a	9"x9" Light Green Floor Tile	Room 41	~ 200 square feet	\$1.75	\$350
06-01b	9x9 Light Green Floor Tile Adhesive	Room 41	~ 200 square feet	*	*
08-01a	9"x9" Green Floor Tile	Rooms 12,32,33,42,43,	~ 1,815 square feet	\$1.75	\$3,177
08-01b	9"x9" Green Floor Tile Black Adhesive	Rooms 12,32,33,42,43,	~ 1,815 square feet	*	*
10-01	Transite Panels	Room 11	~ 1,848 square feet	\$1.50	\$2,772
11-01a	9"x9" Dark Red Floor Tile	Room 9	~ 253 square feet	\$1.75	\$443
11-01b	9"x9" Dark Red Floor Tile Adhesive	Room 9	~ 253 square feet	*	*
13-01a	2" Pipe Insulation	Rooms 8,8a,9,10, 11a,11b,12,12a,14, 14b,17,18,20,21,22, 23,25,26,27,27a, 27e,28,29,32,33,34	~ 458 linear feet	\$18	\$8,244
13-01b	2" Pipe Insulation Wrapping	Rooms 8,8a,9,10, 11a,11b,12,12a,14, 14b,17,18,20,21,22, 23,25,26,27,27a, 27e,28,29,32,33,34	~ 458 linear feet	**	**
14-01	2" Pipe Joint Mud	Rooms 8,8a,9,18, 27a,29	~ 10 joints	\$150/ glove- bag	\$1,500

SUMMARY

The inspection of the Fisher Armory identified twenty-six suspect asbestos-containing materials. Samples were collected and analyzed to determine the asbestos content. Some of the suspect materials were found to contain >1% asbestos, meeting the state and federal regulatory agencies' definition of an "asbestos-containing material". If these materials are not removed, a management-in-place program or O&M Program is recommended to ensure the materials remain in good condition and disturbance of asbestos fibers is avoided. Please refer to the Recommendations and Cost Estimates Table below for asbestos-containing material descriptions and locations.

The cost for total abatement of the asbestos-containing materials could be cost prohibitive. The U.S. EPA encourages building owners to leave asbestos in place when it is in good condition. The agency only requires removal of asbestos when it must be disturbed through renovation or other activities.

RECOMMENDATIONS:

Recommendations and Cost Estimates

Sample #s	Material Description	Location	Quantity	Unit Price	Total Removal Cost
03-01a	9"x9" Gray Floor Tile	Rooms 1, 1A, 1B	~ 936 square feet	\$1.75	\$1,638
04-01a	9"x9" Light Brown Floor Tile	Rooms 1, 1A, 1B	~ 1,772 square feet	\$1.75	\$3,101
04-01b	9"x9" Light Brown Floor Tile Black Adhesive	entrance(bottom layer), Rooms 1C, 28, 29,30,31,35, 37	~ 1,772 square feet	*	*
05-01a	9"x9" Dark Green Floor Tile	Room 38; under 12"x12" Brown Floor Tile (02) in Rooms 6 and 10	~ 1,910 square feet	\$1.75	\$3,343
05-01b	9"x9" Dark Green Floor Tile Black Adhesive	Room 38; under 12"x12" Brown Floor Tile (02) in Rooms 6 and 10	~ 1,910 square feet	*	*

- Class II-** The removal of ACM which is not TSI or surfacing. This includes but is not limited to wallboard, floor tile, ceiling tile, siding, roofing and other miscellaneous materials. This class of job requires: a regulated area with critical barriers, OSHA warning signs, HVAC isolation and full worker protection. An OSHA competent person must supervise this job.
- Class III-** Repair and maintenance operations where asbestos-containing materials are likely to be disturbed. (Job cannot exceed one glovebag or 60 inches in length or width.) A regulated area shall be established, wet methods must be used, respirators required if the permissible exposure limit may be exceeded. **The maintenance or other personnel performing these tasks must have completed a 16 hour Course.**
- Class IV-** Custodial and housekeeping activities during which employees have minimal contact with asbestos-containing materials. Examples include dusting surfaces, vacuuming carpets, mopping floors, where there are indications that surfaces could be contaminated with ACM. **Custodians and housekeepers must have 2-hour awareness training.**

- **U.S. Environmental Protection Agency:**

In a notice dated August 1, 1994, the U.S. EPA recommended that entities which have PLM laboratory results indicating floor tiles to be nonasbestos-containing (asbestos present in less than or equal to 1 percent) reconsider whether these materials may have thin asbestos fibers not identified by the PLM method. The notice also stated that it may be prudent to assume floor tiles and multi-layered materials with previously negative results to be asbestos-containing or resample and analyze them by the 1993 EPA Test Method, via Transmission Electron Microscopy (TEM), to avoid potential violation of the asbestos NESHAP. Building owners/operators are responsible for knowing whether asbestos is contained in any building product prior to its disturbance. If any of the identified asbestos-containing materials are to be disturbed during renovation work, then these materials must be removed prior to their disturbance. The abatement project specifications must be designed by an EPA-accredited project designer and the asbestos materials must be removed by a licensed asbestos abatement contractor.

Summary of Non-asbestos Containing Materials Continued

Material Description and Sample #'s	Material Location
2" Dark Pipe Joint Mud 25-01	Room 25
2'x2' White Ceiling Tile 26-01,26-02	Rooms 28,29,30,31,39(stored)

CONSULTANT OBSERVATIONS AND REGULATIONS

The following regulations have been given to illustrate the many state and federal regulations which govern the handling and management of asbestos in buildings. These regulations have been highlighted due to their direct impact on the cost of building maintenance and management. It is not to be implied that these are the only regulations with which the building owner must comply.

- Current state (Arkansas Asbestos Abatement Regulations of July 15, 1997) and federal (U.S. EPA 40 CFR Part 61 National Emissions Standard for Hazardous Air Pollutants, NESHAP) regulations require building owners to abate asbestos materials prior to demolition, renovation or maintenance activities which may disturb the materials and release airborne asbestos fibers.
- OSHA: Recently revised OSHA regulations which became effective in October of 1995 require:

Building owners will presume that all Thermal System Insulation, Surfacing Materials (sprayed or troweled-on) and resilient flooring material contains asbestos until sampled and proven otherwise.

Building owners will report and transfer information to employers and employees regarding the location and amount of asbestos-containing materials (ACM).

OSHA has now mandated work practices based on the following four job classifications rather than the amount of ACM or length of the job.

- Class I- The removal of thermal system insulation (TSI) or surfacing materials (sprayed or troweled-on) which are asbestos-containing. This class of job requires: a regulated area with negative enclosure, decontamination unit, formation of critical barriers, OSHA warning signs, HVAC isolation and full worker protection. An OSHA competent person must supervise this job

Summary of Asbestos-Containing Materials Continued

Sample #s	Material Description	Location	Quantity	Hazard Ranking	Asbestos
20-01b	12"x12" Off-white Floor Tile Adhesive	Rooms 14,14a,14b	~ 861 square feet	1	5% chrysotile
21-01a	Black Linoleum	Room 22 (over 22-01a)	~ 150 square feet	1	5% chrysotile
22-01a	12"x12" Off-white Speckled Floor Tile	Room 22 (under 21-01a),27a	~ 631 square feet	1	2% chrysotile
24-01a	2" Dark Pipe Insulation	Room 25	~ 10 linear feet	1	10% chrysotile
24-01b	2" Dark Pipe Insulation Wrapping	Room 25	~ 10 linear feet	1	20% chrysotile

Summary of Non-Asbestos Containing Materials

Material Description and Sample #s	Material Location
2'x4' White Speckled Ceiling Tile 01-01,01-02	Throughout
12"x12" Brown Floor Tile and Adhesive 02-01,02-02	Rooms 2,3,4,5,6,10,20
2'x4' White Ceiling Tile 07-01,07-02	Rooms 34,39,40,41
12"x12" White Floor Tile and Adhesive 09-01,09-02	Armory Entrance
12"x12" White Floor Tile and Adhesive 12-01,12-02	Armory Entrance
Ceiling Insulation 15-01,15-02,	Drill Hall
4" Pipe Insulation 16-01,16-02	Rooms 12,14,14b,17,18
Black Pipe Mastic 19-01,19-02	Room 17
12"x12" Red Floor Tile and Adhesive 23-01,23-02	Room 21

Summary of Asbestos-Containing Materials Continued

Sample #s	Material Description	Location	Quantity	Hazard Ranking	% Asbestos
08-01b	9"x9" Green Floor Tile Black Adhesive	Rooms 12,32,33,42,43,	~ 1,815 square feet	1	3% chrysotile
10-01	Transite	Room 11	~ 1,848 square feet	1	35% chrysotile
11-01a	9"x9" Dark Red Floor Tile	Room 9	~ 253 square feet	1	5% chrysotile
11-01b	9"x9" Dark Red Floor Tile Adhesive	Room 9	~ 253 square feet	1	5% chrysotile
13-01a	2" Pipe Insulation	Rooms 8,8a,9,10, 11a,11b,12,12a,14, 14b,17,18,20,21,22 ,23,25,26,27,27a, 27e,28,29,32,33,34	~ 458 linear feet	1	10% chrysotile
13-01b	2" Pipe Insulation Wrapping	Rooms 8,8a,9,10, 11a,11b,12,12a,14, 14b,17,18,20,21,22 ,23,25,26,27,27a, 27e,28,29,32,33,34	~ 458 linear feet	1	30% chrysotile
14-01	2" Pipe Joint Mud	Rooms 8,8a,9,10, 11a,11b,12,12a,14, 14b,17,18,20,21,22 ,23,25,26,27,27a, 27e,28,29,32,33,34	~ 458 linear feet	4	3% chrysotile
17-01a	3" Pipe Insulation	Room 17	~ 10 linear feet	1	15% chrysotile
17-01b	3" Pipe Insulation Wrapping	Room 17	~ 10 linear feet	1	10% chrysotile
18-01a	3" Pipe Joint Mud	Room 17	~ 10 linear feet	1	5% chrysotile
18-01b	3" Pipe Joint Mud Wrapping	Room 17	~ 10 linear feet	1	3% chrysotile

FINDINGS

Suspect materials for the buildings were found in miscellaneous materials (ceiling tile, ceiling insulation, transite, linoleum, and floor tile & adhesive); and thermal systems insulation (pipe joint insulation, pipe joint mud, and pipe insulation).

Please refer to the Appendix for copies of the laboratory reports.

A summary of those materials found to contain asbestos is provided in the following table.

Summary of Asbestos-Containing Materials

Sample #s	Material Description	Location	Quantity	Hazard Ranking	% Asbestos
03-01a	9"x9" Gray Floor Tile	Rooms 1, 1A, 1B	~ 936 square feet	1	3% chrysotile
04-01a	9"x9" Light Brown Floor Tile	Entrance(bottom layer), Rooms 1C, 28, 29,30,31,35, 37	~ 1,772 square feet	1	5% chrysotile
04-01b	9"x9" Light Brown Floor Tile Black Adhesive	Entrance(bottom layer), Rooms 1C, 28, 29,30,31,35, 37	~ 1,772 square feet	1	10% chrysotile
05-01a	9"x9" Dark Green Floor Tile	Room 38; under 12"x12" Brown Floor Tile (02) in Rooms 6 and 10	~ 1,910 square feet	5	15% chrysotile
05-01b	9"x9" Dark Green Floor Tile Black Adhesive	Room 38; under 12"x12" Brown Floor Tile (02) in Rooms 6 and 10	~ 1,910square feet	5	5% chrysotile
06-01a	9"x9" Light Green Floor Tile	Room 41	~ 200 square feet	1	12% chrysotile
06-01b	9"x9" Light Green Floor Tile Adhesive	Room 41	~ 200 square feet	1	5% chrysotile
08-01a	9"x9" Green Floor Tile	Rooms 12,32,33,42,43,	~ 1,815 square feet	1	15% chrysotile

a high potential for future disturbance "potential for significant damage". Hazardous rankings 1-3 are reserved for ACM currently in good condition, but with a range in the likelihood for future disturbance.

Hazardous Rankings	AHERA Hazardous Categories (Refer to Definitions listed Above)
1	ACM in good condition and low potential for disturbance.
2	Potential for Damage
3	Potential for significant Damage
4	Damaged
5	Damaged and Potential for Damage
6	Damaged and Potential for Significant Damage
7	Significantly Damaged

Based on the hazard assessment of ACM, there are generally five categories of *recommended response actions*: to manage the materials in place in an Operations and Maintenance (O&M) program, repair, encapsulation, enclosure and removal.

Operations and Maintenance: A program of training, work practices, and periodic surveillance to maintain ACM in good condition, ensure cleanup of asbestos fibers previously released and prevent further release by minimizing and controlling ACM disturbance or damage.

Repair: Returning damaged ACM to an undamaged condition or to an intact state so as to contain fiber release.

Encapsulation: Encapsulation refers to the spraying or coating of ACM with a sealant to prevent release of fibers, and to provide resistance to damage.

Enclosure: An air tight barrier is installed between the friable asbestos and the building environment.

Removal: Taking out or stripping of part or all of the ACM from a damaged area. Asbestos materials are separated from the underlying surface, collected, and placed in containers for burial in an approved disposal site. Removal will likely require temporary interruption of some building activities.

The interpretation and evaluation of the condition assessment and the potential for future disturbance is described as hazard assessment.

The *current condition* of asbestos containing building materials is classified by a damage rating. The condition of ACM is classified as *good*, *damaged* and *significant damaged*.

Good: The material shows no indications of damage, deterioration, or delamination.

Damaged: Damaged ACM can be characterized by stains, scrapes, gouges, mars, flaking, blistering, or other signs of deterioration covering less than 25% of the homogeneous area if evenly distributed or 10% if the damage is localized.

Significant Damage: The loss of structural integrity or covering in whole or in part, is crushed, missing large pieces, or not intact.

The *disturbance potential* is determined by the reasonable likelihood that the material or its covering will become damaged, deteriorated, or delaminated due to factors such as changes in building use, occupancy, maintenance practices or failure of a related building systems. The likelihood of the disturbance occurring is measure as high, moderate or low.

High Disturbance Potential: Condition of ACM is damaged to the point that fibers will be or have been already released. This area will usually be recommended for accelerated response action and probably should be abated.

Moderate Disturbance Potential: Condition of an ACM will show a localized damage which effects a set area of contamination or a minor level of damage. The release of fibers could be contained if appropriate action is taken, i.e. repair, selective removal, etc.

Low Disturbance Potential: Condition of an ACM is either good or minor damage exists, and the potential for further damage is minimal. The recommendation will generally include stabilization and incorporation into an active management program for as long as it remains in the facility.

Rankings of Hazardous Assessments:

The rankings for potential hazard range from 7 (most hazardous), to 1 (least hazardous). The highest is reserved for ACM which is "significantly damaged". Hazardous rankings 4-6 reflect ACM which is "damaged". Hazard ranking 5 indicates a moderate potential for future disturbance or "potential for damage". Ranking 6 indicates

METHODOLOGY

Inspection procedures were followed in accordance to the US EPA Asbestos Hazard and Emergency Response Act (AHERA) or 40 CFR Part 763. Suspect materials were categorized by material category (surfacing, thermal system insulation and miscellaneous materials), identified by homogeneous areas and sampled according to AHERA sampling protocol. Homogeneous materials are those building materials that, by visual and manual inspection, are similar in texture, color, composition and use in the building, and are deemed to be the same material.

If all samples collected from a homogeneous material, subsequent to analysis by a NVLAP accredited laboratory, result in less than 1% or "no asbestos" being detected, the material is deemed to be asbestos free for the purpose of EPA, OSHA and state regulations.

Any materials analyzed as containing asbestos in percentages equal to or less than 1% are described as containing "trace" amounts of asbestos.

Asbestos samples were sent to the EMSL Analytical laboratory in Houston, Texas: NVLAP #102106-0. EMSL participates in National Institute for Standards and Testing National Voluntary Laboratory Accreditation Program proficiency testing program as well as inter- and intra-laboratory exchange programs. Samples were analyzed via Polarized Light Microscopy (PLM) with dispersion staining. All percentages reported for composition are based on visual estimation or gravimetric determinations.

Following the detection of asbestos within a homogeneous sampling group, laboratory analysis was not performed for the additional samples within that homogeneous material. In other words, analysis was halted after asbestos was contained within a homogeneous material's samples.

PHYSICAL AND HAZARD ASSESSMENTS

The fundamental principle of the physical assessment methodology is that the tendency for ACM to release fibers is directly related to the degree that the material has been or will be disturbed. First, the physical assessment considers the current condition of the ACM. ACM in poor condition reflects past and perhaps ongoing disturbance or deterioration.

Secondly, the potential for future disturbance is evaluated. The likelihood of future disturbance can be gauged by the location of the material with respect to: (1) workers and other building occupants (the frequency of potential contact), (2) sources of vibration, and (3) sources of air erosion.

**Fisher Armory
North Little Rock, Arkansas
Asbestos Survey Report**

INTRODUCTION

Any facility may contain a variety of Asbestos-Containing Material (ACM). Materials which are suspect for containing asbestos include over 3,600 different products. Examples of suspect material include thermal system insulation such as boiler, chiller, pipe and pipe joint insulation; surfacing materials such as spray-applied or troweled-on fireproofing, textured paint and acoustical spray ceilings; and miscellaneous materials like floor tile, floor tile adhesive, ceiling tile, transite or cement panels and roofing materials.

PURPOSE OF STUDY

Ecologic, Inc. was retained to perform an inspection for accessible asbestos-containing building materials (ACBM) in the Fisher Armory located at 2600 Poplar Street in North Little Rock, Arkansas. The Armory is a brick building which consists of a concrete slab foundation with interior concrete block and sheetrock walls.

The purpose of the inspection was to confirm or deny the presence of asbestos in the suspect building materials, to identify the location and condition of the ACM and to provide response action recommendations (if any) and associated costs to facilitate the building operations. Sampling of suspect asbestos-containing roofing materials was not in the scope of work.

Philip Zabel and Shane Johnston of Ecologic, Inc. performed the on-site study to 1) identify suspect asbestos-containing building materials, 2) collect bulk samples of suspect materials for analysis, and 3) quantify suspect asbestos-containing building materials. Mr. Zabel and Mr. Johnston are Arkansas Department of Pollution Control & Ecology certified asbestos inspectors (See the "Asbestos Inspector Certification" section in the appendix). The inspection was conducted on December 9, 1998 and December 14, 1998.

DEFINITION OF ASBESTOS-CONTAINING MATERIAL

Federal and state regulatory agencies define an asbestos-containing material as any building material which contains greater than 1% asbestos. The percentage of asbestos and the determination if a material contains asbestos can only be determined by laboratory analysis.

Summary of Asbestos-Containing Materials Continued

Sample #s	Material Description	Location	Quantity	Hazard Ranking	% Asbestos
21-01a	Black Linoleum	Room 22 (over 22-01a)	~ 150 square feet	1	5% chrysotile
22-01a	12"x12" Off-white Speckled Floor Tile	Room 22 (under 21-01a),27a	~ 631 square feet	1	2% chrysotile
24-01a	2" Dark Pipe Insulation	Room 25	~ 10 linear feet	1	10% chrysotile
24-01b	2" Dark Pipe Insulation Wrapping	Room 25	~ 10 linear feet	1	20% chrysotile

Summary of Asbestos-Containing Materials Continued

Sample #s	Material Description	Location	Quantity	Hazard Ranking	Asbestos
08-01b	9"x9" Green Floor Tile Black Adhesive	Rooms 12,32,33,42,43,	~ 1,815 square feet	1	3% chrysotile
10-01	Transite	Room 11	~ 1,848 square feet	1	35% chrysotile
11-01a	9"x9" Dark Red Floor Tile	Room 9	~ 253 square feet	1	5% chrysotile
11-01b	9"x9" Dark Red Floor Tile Adhesive	Room 9	~ 253 square feet	1	5% chrysotile
13-01a	2" Pipe Insulation	Rooms 8,8a,9,10, 11a,11b,12,12a,14, 14b,17,18,20,21,22 ,23,25,26,27,27a, 27e,28,29,32,33,34	~ 458 linear feet	1	10% chrysotile
13-01b	2" Pipe Insulation Wrapping	Rooms 8,8a,9,10, 11a,11b,12,12a,14, 14b,17,18,20,21,22 ,23,25,26,27,27a, 27e,28,29,32,33,34	~ 458 linear feet	1	30% chrysotile
14-01	2" Pipe Joint Mud	Rooms 8,8a,9,10, 11a,11b,12,12a,14, 14b,17,18,20,21,22 ,23,25,26,27,27a, 27e,28,29,32,33,34	~ 458 linear feet	4	3% chrysotile
17-01a	3" Pipe Insulation	Room 17	~ 10 linear feet	1	15% chrysotile
17-01b	3" Pipe Insulation Wrapping	Room 17	~ 10 linear feet	1	10% chrysotile
18-01a	3" Pipe Joint Mud	Room 17	~ 10 linear feet	1	5% chrysotile
18-01b	3" Pipe Joint Mud Wrapping	Room 17	~ 10 linear feet	1	3% chrysotile
20-01b	12"x12" Off-white Floor Tile Adhesive	Rooms 14,14a,14b	~ 861 square feet	1	5% chrysotile

EXECUTIVE SUMMARY

Ecologic, Inc. was retained by the Military Department of Arkansas, for the purpose of performing a survey of the Fisher Armory located at 2600 Poplar Street in North Little Rock, Arkansas. The survey scope of work required the identification and sampling of visible, accessible suspect asbestos-containing material in the specified buildings. Sampling of suspect asbestos-containing roofing materials was not in the scope of work.

The intent of this contract is to determine if asbestos-containing building material (ACBM) is present which may present an environmental risk during renovation or demolition activities.

Ecologic, Inc. performed an asbestos survey on December 9, 1998 and December 14, 1998. Twenty-four (24) homogeneous asbestos-containing materials were identified at the site as a result of the survey.

During the on-site survey, accessible suspect asbestos-containing building materials were identified by the Ecologic, Inc. inspector. Samples of the suspect materials were collected and analyzed. Results of the analysis are presented in the following report. A summary of the asbestos-containing building materials is provided in the table below.

Summary of Asbestos-Containing Materials

Sample #s	Material Description	Location	Quantity	Hazard Ranking	% Asbestos
03-01a	9"x9" Gray Floor Tile	Rooms 1, 1A, 1B	~ 936 square feet	1	3% chrysotile
04-01a	9"x9" Light Brown Floor Tile	Entrance(bottom layer), Rooms 1C, 28, 29,30,31,35, 37	~ 1,772 square feet	1	5% chrysotile
04-01b	9"x9" Light Brown Floor Tile Black Adhesive	Entrance(bottom layer), Rooms 1C, 28, 29,30,31,35, 37	~ 1,772 square feet	1	10% chrysotile
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**Fisher Armory
located at
2600 Poplar Street
North Little Rock, Arkansas 72114**

Asbestos Survey and Assessment

Report date: February 23, 1999

**Prepared for: MILITARY DEPARTMENT OF ARKANSAS
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