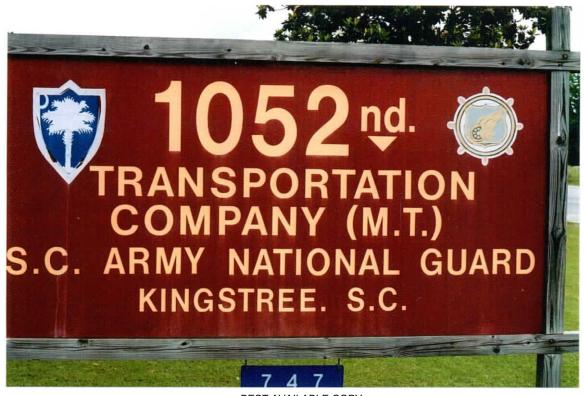


Kingstree, SC Armory





Drill Hall

Water Leak, Kitchen Faucet



May 2018

FOIA Requested Record #J-15-0085 (SC) Released by National Guard Bureau Page 642 of 964



IFR, Front View

IFR, Rear View



May 2018

Page 643 of 964



A/ C Unit, Missing Air Filter

A/C Grill





Stained Ceiling Tiles, Hall

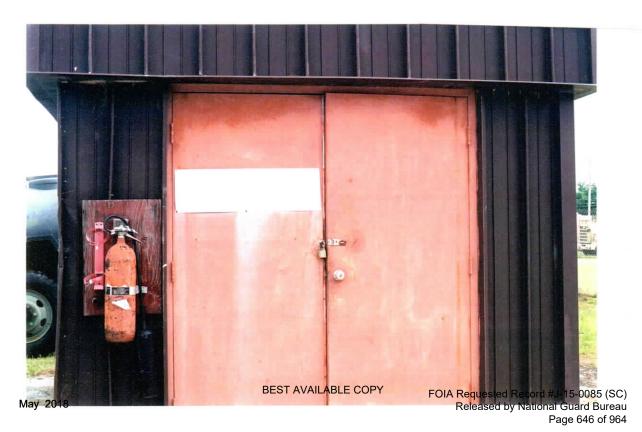
Missing Ceiling Tiles, Locker Room





Boiler

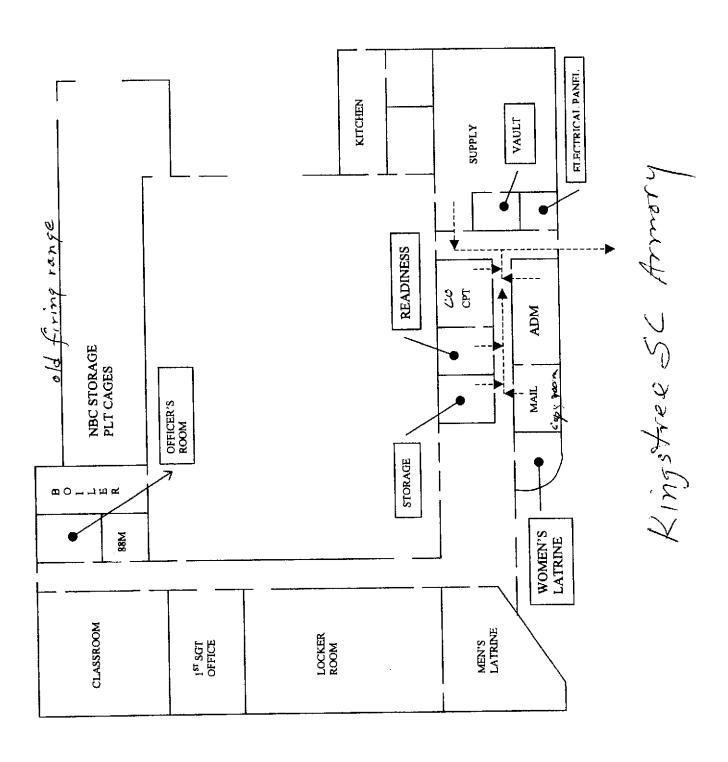
Oil House





Motor Pool





NATIONAL GUARD REGION SOUTH INDUSTRIAL HYGIENE OFFICE 510 PLAZA DRIVE, SUITE 1530 COLLEGE PARK, GA 30349

NGB-AVN-SI

5 August 2003

MEMORANDUM FOR The South Carolina Army National Guard, ATTN: Non-Responsive Armory Supervisor, Battery B 4th BN 178th FA, P.O. BOX 910, Lake City, SC 29560-0910.

SUBJECT: Industrial Hygiene Survey of the Lake City National Guard Armory, Lake City, South Carolina.

- 1. References.
 - a. Report submitted 4 August 2003, Industrial Hygiene Survey, Non-Responsive
- b. OSHA Standards 29 CFR (Code of Federal Regulations), General Industry, revised 1988.
 - c. AR 40-5, Preventive Medicine, October 1990.
 - d. AR 11-34, 15 February 1990, The Army Respiratory Protection Program.
 - e. AR 385-10, 23 May 1988, Army Safety Program.
- f. Department of the Army Pamphlet (DA PAM) 40-501, 27 August 1991, Hearing Conservation.
 - g. TB MED 530, The Army Industrial Hygiene Program.
- h. Title 29 Code of Federal regulation (CFR), 1989 rev, Part 1910.94 (c) (6) Table G-10, Ventilation.
- i. Industrial Ventilation, 21st ed, 1992, American Conference of Governmental Industrial Hygienist, Cincinnati, Ohio.
- j. IES Lighting Handbook, Application Volume, 1981, Illumination Engineering Society of North America.
- General.
- a. At the request of the South Carolina State Safety and Occupational Health Office and the Region South Industrial Hygiene Office a Service Contract was put together to conduct Health Hazard Information module (HHIM) Field surveys and IH surveys at the South Carolina National Guard Armories.
 - b. Non-Responsive conducted the survey.

- 3. Findings. All HHIM field survey forms and survey findings of the report are enclosed. (See ENCL. 1)
- 4. Recommendations.
- a. Follow all recommendations made in reference 1. a., requesting industrial hygiene (IH) services where needed to complete the recommendations.
- b. Request the Facility Maintenance Office (FMO) repair leaks and replace all water damaged items in the Armory. Ignoring this problem could lead to Indoor Air Quality and mold problems.
- c. Discuss the high lead samples taken inside of the inactive indoor firing range with the Safety and Occupational Health Office, the Facility Management Office and the Environmental Office. Request help in eliminating possible employee lead exposures. Be prepared to educate personnel on proper housekeeping procedures of the range. Follow NG PAM 385-16, Guidelines for converting indoor firing ranges to other uses and NG PAM 385-15, Policy, Responsibilities and guidelines for housekeeping, rehabilitation and/or conversion of indoor firing ranges.
 - d. Use the report to help in correcting all deficiencies noted by the contractor.
- e. Consider additional Industrial Hygiene services to monitor operations that were not looked at or surveyed during the contract visit, especially if this will help eliminate health hazards and reduce medical surveillance cost.
- f. To execute your responsibilities in correcting all deficiencies and meeting all standards coordinate with the FMO, Occupational Health Nurse and the Occupational Safety and Health Office for technical guidance.



CF: Safety and Occupational Health Office, ATTN: Guard Road, Columbia, SC 29201-4766

Non-Responsive

National

Non-Responsive

June 16, 2003

Non-Responsive

P.O. Box 910 Lake City, SC 29560-0910

RE: Baseline Industrial Hygiene Survey

FINAL REPORT

FOR

BASELINE INDUSTRIAL HYGIENE SURVEY

SOUTH CAROLINA ARMY NATIONAL GUARD

LAKE CITY ARMORY

LAKE CITY, SC

DATE:

MAY 19,2003

PREPARED BY

Non-Responsive

CONTENTS

1.0 INTRODUCTION	V
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2.0 INSTRUMENTATION

3.0 FINDINGS

4.0 REFERENCES

Attachment 1 HHIM Forms

Attachment 2 Laboratory Reports: Deactivated Indoor Firing Range, Drill Hall

Attachment 3 Laboratory Reports: Asbestos, Bulk Sample Analysis

Attachment 4 Photographs of Facility

Attachment 5 Schematic Drawing of Facility

1.0 INTRODUCTION

At the request of the National Guard Bureau South Region Industrial Hygiene Office, Non-Responsive performed a Baseline Industrial Hygiene Survey at the SC ARNG Lake City Armory. The purpose of the survey was to perform a baseline survey to evaluate health hazards, controls present in the work site, collect lead swipe samples from renovated/inactive or closed Indoor Firing Ranges and perform, illumination survey. And to make recommendations regarding health hazards associated with the work at the Lake City Armory.

The building was finished around 1958 or 59. The facility houses the Battery B 4th BN 178th Field Artillery. The armory is used by the troops of the Battery B 4th BN 178th Field Artillery for their monthly weekend drills.

The Battery B 4th BN 178th Field Artillery with 84 troops had 3 full time AGR personnel at the time of the survey. Two recruiters also use the facilities (office space). The AGR employees are assigned to perform administrative duties Monday-Friday 7:30am-5: 00pm. The facility houses administrative areas, a Drill Hall, Classroom, a Supply Room, a Weapons Vault, a deactivated indoor firing range and a kitchen. A schematic drawing of the facility can be found in Attachment 5.

The facility was visually examined and personnel consulted to assess potential hazards present. Personnel reported that there were roof leaks at the lockers room and the officer's latrine. There were missing and stained ceiling tiles in the locker room. Plaster has come off the ceiling in the officer's latrine and shower (See pictures). Bulk sample collected from broken ceiling tiles in the locker room were tested for asbestos. There were also missing and/or stained ceiling tiles at the future Administration room and the Commander's office from previous water leaks. Health Hazard Information Modules were completed. Illumination survey was performed throughout the facility.

2.0 INSTRUMENTATION/CALIBRATION

The following instrumentation was used to obtain light measurements. The instrument used has been calibrated and was operated according to the manufacturer's recommendations:

Sper Scientific Light Meter

3.0 FINDINGS

Illumination

Illumination levels were recorded in administration offices, classrooms, drill hall, and supply room. Light measurement was below IES guidelines at the future Administration Office. There were four light bulbs out in the Drill Hall and one light fixture out in the Commander Office. The other areas tested were within IES minimum standards. See Light Readings Table at the end of this section.

Administration

Personnel perform administrative duties that consist of reading, handling and generating paper work, and supply room tasks. Computer use comprises a large portion of the working day, from three to seven hours per day. This continuous use of computers can, in the long run, lead to eyestrain and hand/wrist or shoulder soreness.

Motor Pool

The motor pool is located in a fenced area in the rear of the building. The motor pool consists of two 5T trucks, four PLS vehicles, one 11/2T truck and several M-998vehicles. PMCS performed at the armory. Other repair jobs are performed at the OMS 16 in Hemingway.

Drill Hall

The Drill Hall is located in the center of the building. It is used primarily for formation and to eat meals during weekend drills. The Drill Hall is used to clean weapons about 8 times a year. Bay (roll-up) door is kept open when the weapons are cleaned. There exhaust ventilation fans in the Drill Hall are turned on. It is done in groups of 15-20 at a time. The Drill Hall is rented for wedding receptions, team dances and social club meetings about 3 times a month. Renters bring their own food.

Boiler Room

The boiler is not used anymore. The Boiler Room is kept locked. The window units are dual units for cooling and heating. There are window units in all offices supply room and classroom. Personnel stated that the units were working well as of the time of the survey.

Deactivated Indoor Firing Range

A deactivated Indoor Firing Range (IFR) was been converted into a storage area. Personnel reported that it was "sanitized" about 10 years ago. It is divided with

metal cages. They store supply room equipment and section equipment. The recruiter uses one cage for storage too. There were metal shelves and metal cabinets and tables stored outside the cages. The floor is concrete. Six samples were taken from the IFR. Three of the five samples were above the clearance level of 200ug/ft2. See table 1 for results.

Table 1

Sample Number	Sample Location	Results
1	Bullet backstop	16700ug
2	Floor in front of IFR	931ug
3	Item 1, stored in IFR	252ug
4	Item 2, stored in IFR	69ug
5	Wall next to exit door	171ug
6	Blank	BRL

Drill Hall and Kitchen Laboratory Sampling

Table 2

Sample Number	Sample Location	Results
11	Drill Hall: water fountain	BRL
12	Drill Hall: top of Pepsi machine	84ug
13	Drill Hall: Flagpole base	27ug
14	Kitchen: counter top	BRL
15	Kitchen: stove counter top	BRL

16	Blank	BRL
•••	Diguik	DKL

Asbestos Sampling

A sample for asbestos was taken from a broken ceiling tile in the locker room. The result of the analysis was negative for asbestos. See laboratory report in attachment 3.

Weapons Vaults

The Lake City Armory has a weapon storage vault located in the Supply Room. The dehumidifier works well and is always turned on. Personnel stated that accountability and issuing of weapons are performed in this area. Weapons are cleaned in the Drill Hall.

A/C Heating System

Individual window A/C units cool the administrative offices, the classroom and the Supply Room. The armory has no Central A/C unit. As stated before, the window units are dual units for A/C and heating. Personnel stated that the units were working well at the time of the survey and that units have been replaced as needed.

Material Safety Data Sheets

The MSDS Book is kept in the Supply room. The Supply Sgt. updates it quarterly. The Flammables cabinet is located also in the Supply Room. There is a Hazardous Materials Inventory List at the door of the cabinet. There is a new oil house outside the building. It did not have a Hazardous Materials Inventory List at the time of the survey. The Supply Sgt. has attended Hazardous Materials Training. The weekend drills motor Sgt. has also attended Hazardous Materials Training.

Light Readings

Post t NGB FOIA Reading Room

May, 2018

Light measurements were taken in various locations throughout the facility. The results were compared to guidelines recommended by the Illuminating Engineering Society (IES). The results of the survey are shown in Table 3

Table 3

Location	Light Reading (footcandles)	IES Recommendation (footcandles)
ADO Administration Office	28-75 (Avg. 56)	50-100
ADO Supply Room Office	34-91 (Avg. 73)	50-100
ADO Supply Room Storage	8-75 (Avg. 44)	20
ADO Future Administration Office	23-71 (Avg. 44.5)	50-100
Recruiter Office	41-150 (Avg. 85)	50-100
Classroom	48-116 (Avg. 70)	50-100
1 st Sergeant Office	50-55 (Avg. 52)	50-100
Commander Office	43-75 (Avg. 58)	50-100
Drill Hall	28-55 (Avg. 41)	30

Light measurement was below IES guidelines at the future Administration Office. There were four light bulbs out in the Drill Hall and one light fixture out in the Commander Office. The other areas tested were within IES minimum standards. Consideration should be given to replace burned out bulb in the Drill Hall and provide supplemental lighting in those areas that were below the recommended standard. ANSI RP7-1991.

4.REFERENCES

- Guide to Occupational Exposure 2000, American Conference of Governmental Industrial Hygienists (ACGIH), Cincinnati, Ohio.
- American National Standards Institute (ANSI), /Illuminating Engineering Society (IES), Industrial Lighting 1991.
- National Institute for Occupational Safety and Health (NIOSH), (76-130)
 Technical Information, Lead Exposure and Design Considerations for Indoor Firing Ranges GPO, 1975.
- Title 29, Code of Federal Regulations (CFR). 1999, revision, Part 1910.
 Occupational Safety and Health Standards
- AR 40-5, Preventative Medicine, 15 October 1990.
- AR 385-10, The Army Safety Program, 23 May 1988.

BEST AVAILABLE COPY

- National Safety Council, Fundamentals of Industrial Hygiene, 4th edition, 1996.
- AR 385-16, National Guard Pamphlet, Safety Guidelines for Converting Indoor Firing Ranges to Other uses.
- TB MED 503, The Army Industrial Hygiene Program, February 1985.
- Department of the Army Pamphlet (DA PAM) 40-501,27 August 1991, Hearing Conservation.
- Title 29 CFR, Part 1910.1200, The Hazard Communication Standard.



RECOMMENDATIONS

- Provide supplemental lighting in those areas where light measurements were below the recommended standard (as represented in Table 3). Recommend that burned out bulb in the Drill Hall are replaced.
- Recommend that when using computers for extended periods of time, personnel should take occasional breaks and change position to minimize the possibility of eyes and/or hands/wrist injury.
- Continue to ensure that weapon maintenance and cleaning is done in a wellventilated area. Continue to practice good personal hygiene by washing hands after handling and cleaning weapons and ammunition.
- Ensure that personnel and troops have knowledge of the location of the MSDS book, and is enrolled in hazardous materials safety training.
- A work request should be re-submitted to the appropriate state office for the repair of roof leaks and the subsequent replacement of the missing and stained ceiling tiles.
- Use the MSDS book to develop a Hazard Materials Inventory List to be placed in the new oil house.
- That the state Occupational Safety and Health office review the lead swipe clearance sample results of this facility to determine if the IFR will need further decontamination.

*SEE PRIVACE ANAMERICATION MODULE FIELD SURVEY *SEE PRIVACE ANAMERICATION ON REVERSE. (For use of this form, see HHIM User's Instructions.)

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* PRIVACY ACT STATEMENT

Title & U.S. Code, Section 301; Executive Order 9397 authorizes the use of your Social Security Number as a identification number. The purpose of this information is to identify and monitor data relating each DA civilian employee exposed to a hezardous workploce or operation. The use this information is to provide histories of exposure fur any given worker.

Disclosure of your Social Security Number is not mendatory; however, nondisclosure may result in untimely provides of proper medical maniforms.

HEALTH HAZARD INFORMATION MODULE FIELD SURVEY

*SEE PRIVACY ACT STATEMENT ON REVERSE, (Por use of this form, see HHIM User's Instructions.)

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SECTION 5.

SAMPLING DATA

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Disclosure of your Social Security Number is not mendstory; however, nondisclosure may result in antimely provision of proper medical mornitoring.

Post t NGB FOIA Reading Room

Analytical Environmental Servs, Inc.

Date: 5/30/2003

TOTAL LEAD IN WIPE SAMPLES N7082

CLIENT:

Non-Responsive

Project:

Lake City SC Armory

Project No:

LakeCitySCArm

PO No:

Lab Order:

0305738

Date Received:

5/23/2003 12:00:

Matrix:

Wipe

Analyst:

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0305738-001A 1 16700 μg, Total 26.3 9.31 5/19/2003 0305738-002A 2 931 μg, Total 2.83 1 5/19/2003 0305738-003A 3 252 μg, Total 2.83 1 5/19/2003 0305738-004A 4 69.0 μg, Total 2.83 1 5/19/2003	Date Analyzed
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0305738-007A 11 BRI us Tatal 2.82	5/29/2003
0305738-008A 12 84.0 ug Tess 2.23	5/29/2003
0305738-009A 13 27.0 ug Total 2.82 1 guarant	5/29/2003
0305738-010A 14 BRI W7 Total 2.82	5/29/2003
0305738-011A 15 BRI ug Total 2.82	5/29/2003
0305738-012A 16 BRI ug Total 2.82	5/29/2003

Qualifiers:

MDL - Method Detection Limit

ND - Not Detected at the Reporting Limit

DF - Dilution Factor



ANALYTICAL ENVIRONMENTAL SERVICES, INC. 3785 Presidential Parkway Atlanta, GA 30340

Tel: (770) 457-8177 Fax: (770) 457-8188

AES Job Number: B14428 Page 1 of 1 Total Samples Friday, May 30, 2003



BULK SAMPLE ANALYSIS

Client Name: Project Name:

Client Sample ID: Location:

No. 17

Ceiling tile - locker room

Project Number:

AES Lab ID: 146742

Sample Description: Brown soft fibrous with paint

ASBESTOS FIBERS	NON-FIBROUS MATERIALS		
Chrysotile:	Vermiculite:		
Amosite:	Biotite:		
Crocidolite:	Mica:		
Anthophyllite:	Perlite:		
Tremolite:	Aggregates:		
Actinolite:	Styrofoam:		
NON-ASBESTOS FIBERS	OTHERS		
Synthetics:	Aluminum:		
Mineral Wool:	Bitumen:		
	Resilient Material:		
Fiberglass:	1709HCH Maleuar		
Fiberglass: Cellulose: 95 Anlmal Hair:	Glue: Binders: 5		

It is certified by the signatures below that the laboratory identified is accredited by the National Institute of Standards and Technology for Polarized Light Microscopy (PLM) analysis under the EPA Interim Asbastos Bulk Sample Quality Assurance Program, Laboratory 102082-0.

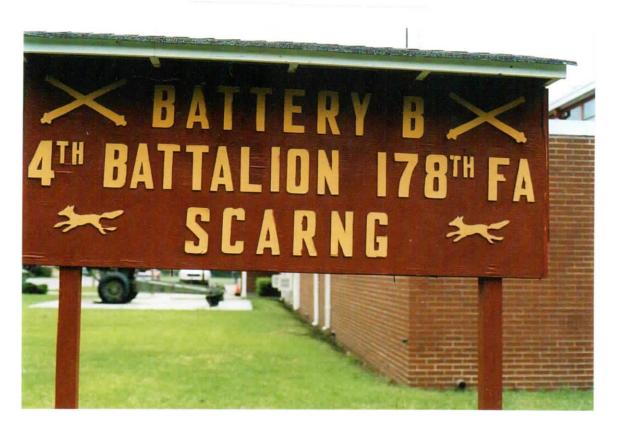
Microanalyst:

All percentages giv All percentages given by the percentages given by the EPA "Method for the Determination of Asbestos in Bulk Building Materials, EPA/600/R-93/116, July 1993." This report must not be reproduced except in full with the appropriate of Application of Asbestos in Bulk Building Materials, EPA/600/R-93/116, July 1993." This report must not be reproduced except. in full with the approval of Analytical Environmental Services, Inc. These test results apply only to the samples actually tested. The refractive index was determined by using "Rapidly and Accurately Determining Refractive Indices of Asbestos Fibers by Using Dispersion Staining Method" by Shu-Chun Su, Ph.D.

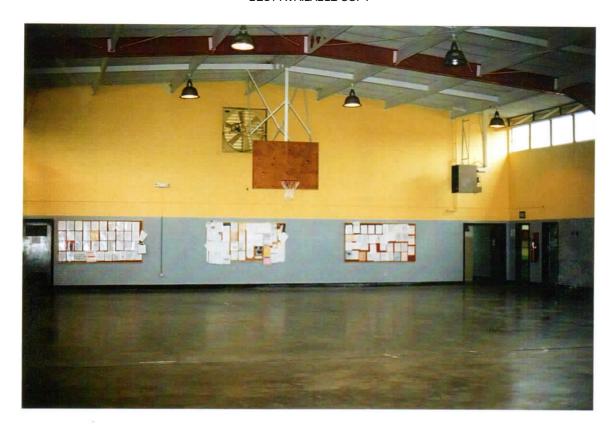
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Lake City, S C Armory



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Drill Hall



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Roof Leak, Future Adm. Room

Roof Leak, C O Office



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Roof Leak, Locker Room Area

Roof Leak, Officer's Latrine





IFR, Front View

IFR, Rear View



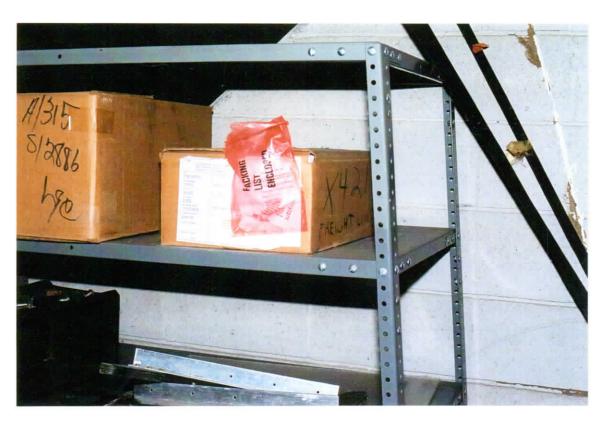
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FOIA Requested Record #J-15-0085 (SC) Released by National Guard Bureau Page 671 of 964



IFR, Sampling Areas



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IFR, Floor in front of Bullet Backstop

Motor Pool

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A/C Window Unit Office

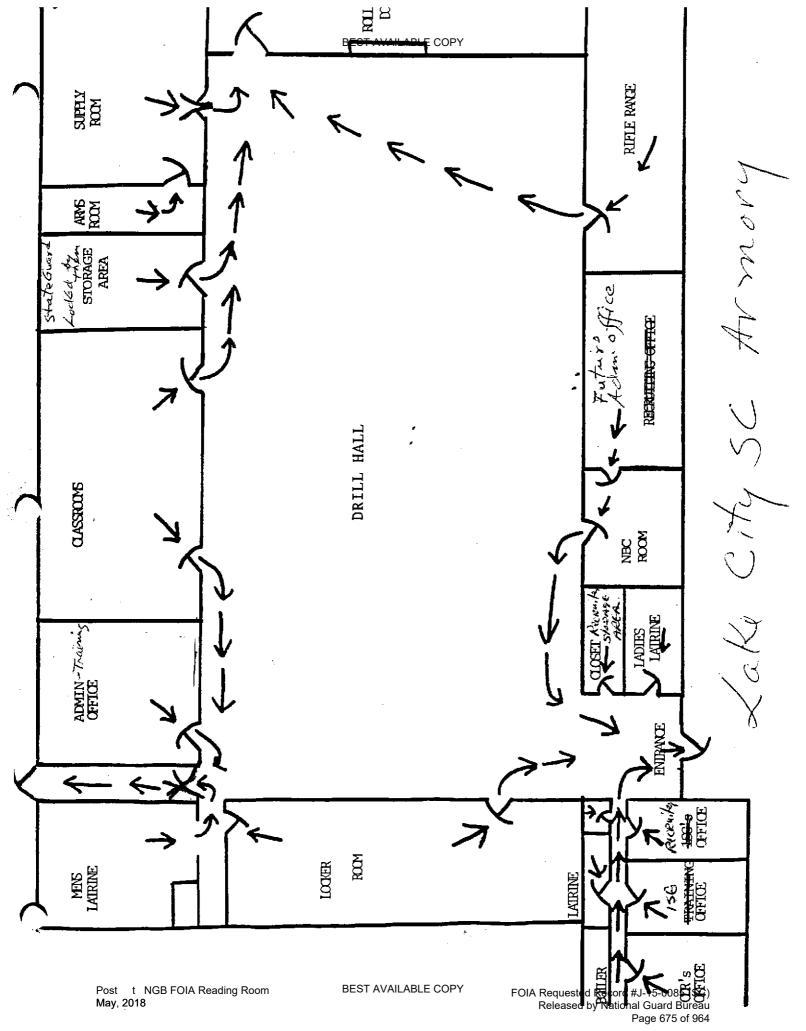
Oil House



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FOIA Requested Record #J-15-0085 (SC) Released by National Guard Bureau Page 674 of 964



NATIONAL GUARD REGION SOUTH INDUSTRIAL HYGIENE OFFICE 510 PLAZA DRIVE, SUITE 1530 COLLEGE PARK, GA 30349

NGB-AVN-SI

June 19, 2006

MEMORANDUM THRU National Guard Road, TAG-MP-MSS, Columbia, SC 29201.

TO: The South Carolina Army National Guard Laurens Armory, ATTN: Non-Responsive Commander, 4171 Torrington Road, Laurens, SC 29360.

SUBJECT: Industrial Hygiene Survey of the Laurens National Guard Armory, Laurens, South Carolina.

- 1. References.
- a. Report submitted May 2006, Industrial Hygiene Survey, Technical Solutions International, Inc (TSI).
- b. OSHA Standards 29 CFR (Code of Federal Regulations), General Industry, revised 2004.
 - c. AR 40-5, Preventive Medicine, October 1990.
 - d. AR 11-34, 15 February 1990, the Army Respiratory Protection Program.
 - e. AR 385-10, 29 February 2000, Army Safety Program.
- f. Department of the Army Pamphlet (DA PAM) 40-501, 10 December 1998, Hearing Conservation.
 - g. TB MED 530, the Army Industrial Hygiene Program.
- h. Title 29 Code of Federal regulation (CFR), 2004 rev, Part 1910.94 (c) (6) Table G-10, Ventilation.
- i. Industrial Ventilation, 25th ed, 2004, American Conference of Governmental Industrial Hygienist, Cincinnati, Ohio.
- j. IES Lighting Handbook, Application Volume, 1981, Illumination Engineering Society of North America.
- 2. General.
- a. At the request of the South Carolina State Safety and Occupational Health Office and the Region South Industrial Hygiene Office a Service Contract was put together to

conduct Health Hazard Information module (HHIM) Field surveys and IH surveys at the South Carolina National Guard Armories.

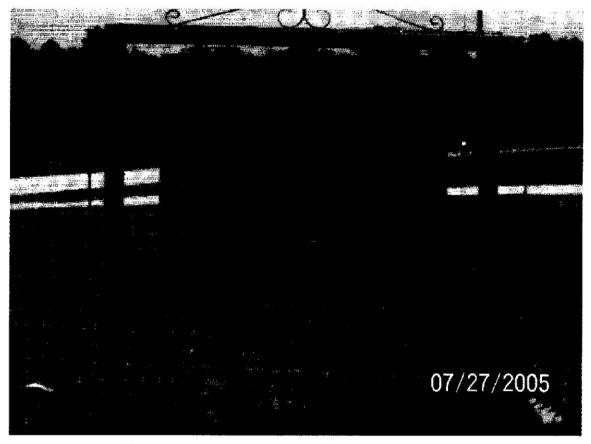
- TSI conducted the survey.
- 3. Findings. All HHIM field survey forms and survey findings of the report are enclosed. (See ENCL, 1)
- Recommendations.
- a. Follow all recommendations made in reference 1. a., attachment 1 requesting industrial hygiene (IH) services where needed to complete the recommendations.
- b. Discuss the high lead samples taken inside of this previously cleaned inactive indoor firing range with the Safety and Occupational Health Office, the Facility Management Office and the Environmental Office. Request help in eliminating possible employee lead exposures. Be prepared to educate personnel on proper housekeeping procedures of the range. Follow NG PAM 385-16, Guidelines for converting indoor firing ranges to other uses and NG PAM 385-15, Policy, Responsibilities and guidelines for housekeeping, rehabilitation and/or conversion of indoor firing ranges.
 - c. Use the report to help in correcting all deficiencies noted by the contractor.
- d. Consider additional Industrial Hygiene services to monitor operations that were not looked at or surveyed during the contract visit, especially if this will help eliminate health hazards and reduce medical surveillance cost.
- e. To execute your responsibilities in correcting all deficiencies and meeting all standards coordinate with the FMO, the Environmental Office the Occupational Health Nurse and the Occupational Safety and Health Office for technical guidance.
- f. Ensure that the FMO and the Environmental Offices receive a copy of this report.
- 4. Please accept the apologies of the Regional Industrial Hygiene Office for getting these reports out so late. This is not our normal practice. We strive to have reports of surveys back to you within 30-45 days of walk thru.



CF: Safety and Occupational Health Office, ATTN: Guard Road, Columbia, SC 29201-4766

Non-Responsive 1 National

Army National Guard Industrial Hygiene Survey



Laurens Armory

4171 Torrington Rd. Laurens, SC 29360

Non-Responsive

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220 Jaysee Court Fayetteville, GA 30215 Phone: (678) 522-1138 FAX: (877) 631-9226 E-mail: info@tsi-cg.com Web: www.tsi-cg.com

And the state of t

17 September 2005

MEMORANDUM FOR: South Carolina Army National Guard, ATTN: Non-Responsive
Commander, Co. A 151 Signal BN, 4171 Torrington Rd., Laurens, SC
29360

SUBJECT: Industrial Hygiene Survey of Laurens Armory Army National Guard, Laurens, South Carolina

BACKGROUND

Introduction:

At the request of Non-Responsive

Bureau Regional Industrial Hygiene South Office, Atlanta, GA, an initial baseline industrial hygiene survey was conducted at the Laurens Armory, Laurens, South Carolina, on 27 Jul 05 as part of the South Carolina Army National Guard Occupational Health Program to identify potential hazards in the workplace. The point of contact for this facility was Non-Responsive

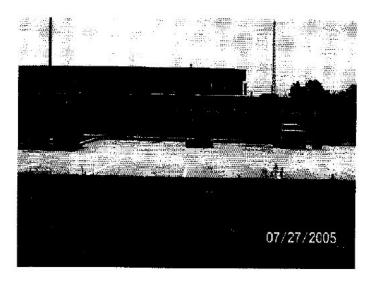
Scope of Work:

The survey consisted of collecting lead wipe samples, bulk asbestos samples (as needed), conducting noise and illumination survey, as well as evaluating the condition of the building, including the airflow of the Heating Ventilation and Air Conditioning (HVAC) System as it relates to indoor air quality. A review of several industrial hygiene programs, such as hazard communication, radiation protection, and personal protective equipment was also performed. A field survey form is completed on all industrial operations at the facility, and the data is contained in this report.

INSTRUMENTATION

The following survey instrumentation was provided by or for the contractor, and was used to obtain lead wipe dust, illumination, ventilation, and noise sample measurements. All noise dosimeter instrumentation was calibrated before and after sampling. All other instrumentation was operated according to manufacture recommendations.

Instrument	Serial Number	Calibration
Extech Heavy Duty Light Meter	2009392	14 July 2005
Bruel & Kjaer Sound Level Meter	HSB090013	14 July 2005
Bruel & Kjaer 4231 Acoustic calibrator	QIB100244	14 July 2005
Alnor-Thermo Anamometer (CompuFlow)	2800	07 June 2005
Ghost Wipe Lead Dust Wipes		



The armory was built in 1974. Vehicles stored at this facility include dozers, graders, rollers, haulers, HEMMETS, 916 tractor trailer beds, and cranes.

1. Co. A 151 Signal BN, Non-Responsive Commander

This unit has seven fulltime personnel providing readiness and other personnel support as follows:



BUILDING CONDITION:

There was water damage to several areas of the ceiling through out the building, which are evidence of roof leaks. Some areas have been repaired, but some are still in need of repair. Standing water around electrical breaker boxes is a potential hazard.

LEAD DUST WIPE SAMPLES:

Thirteen lead dust wipe samples were taken, using 12 inch templates. Two IFR samples were significantly above the Army National Guard standard of 200 µg/ft² for surface contamination in and around indoor firing ranges (Army National Guard All States Log Number P01-0075, Policies and Responsibilities for Inspection, Evaluation, and Operation of ARNG Indoor Firing Range (IFR) and Guidelines for IFR Rehabilitation, Conversion, and Cleaning). Pictures of the lead sample wipes were taken (see pictures Laurens-01 to Laurens-29). The following table notes where the samples were taken, the sample number and the lead results:

Sample Location	Sample No.	
Supply Room: Outside Vault Door	1	BRL
Supply Room: Blank	2	BRL
Supply Room Office Desk	3	BRL
Drill Hall: Admin Main Entrance	4	BRL
Drill Hall: Secondary Entrance	5	BRL
Drill Hall: Center Floor	6	BRL
Kitchen Prep Table	7	BRL
Kitchen Stovetop	8	BRL
IFR Backstop	10	27400
Motor Pool Bay 1	11	21
IFR Sidewall	12	1920
Commander's office	13	BRL

Note 1: IFR refers to Indoor Firing Range

Note 2: µg/ft² refers to micrograms or one millionth of a gram per square foot

ADMINISTRATIVE OFFICES

There are several administrative offices in this facility, where personnel use computer systems, file, read, write and perform other administrative tasks as necessary. Computer use occurs throughout the day. Illumination levels range from 7.4 to 76.7 Foot Candles (FC's).

AIRFLOW / VENTILATION

This facility was not equipped with a central HVAC unit, therefore no air flow samples were not taken during the survey.

SUPPLY ROOM(S) AND VATULATES LABLE COPY

This facility has one supply room, with several storage areas. The supply officers use the computer an average of eight hours per day. An inventory of all chemicals is maintained by the safety officers. A Material Safety Data Sheet book is maintained by the Supply and Maintenance SGT and includes a table of contents, and/or is cross-referenced to the chemical inventory sheet for easy accessibility by all personnel in case of emergency. The facilities manager separated the chemicals by POL storage shed, flammable storage locker, and utility room. All employees must be initially trained in the Federal Hazardous Communication Program IAW 1910.1200. Heavy lifting is performed with the aid of hand jacks, lifts, and other personnel.

KITCHEN / MESS HALL

The kitchen facility is currently used for cooking by personnel during drill weekend, as well as caterers during drill hall events sponsored by the general public. The illumination levels range from 20.8 to 47.0 FC's.

DRILL HALL

Personnel officially use the drill hall two to three days per month. It is rented out for community events an average of three times a month. Weapons cleaning take place by units during drill weekends. Ceiling lamps were in good working order. Illumination levels ranged from 18.3 to 31.1 FC's.

Noise levels in the drill hall area were below the threshold required for hearing protection due to sound muffled exhaust fans. There is no requirement for a Hearing Conservation Program for full-time personnel.

INDOOR FIRING RANGE (IFR)

This former IFR is now used as a storage facility. The date of the last retrofit and clearance for this former IFR was in 1985.

The Army National Guard All States Log Number P01-0075, Policies and Responsibilities for Inspection, Evaluation, and Operation of ARNG Indoor Firing Range (IFR) and Guidelines for IFR Rehabilitation, Conversion, and Cleaning requires a limit of 200 micrograms per square foot for surface contamination in and around indoor firing ranges. The lead wipe sample readings for the IFR ranged from 1920 µg/ft² to 27400 µg/ft²:

MOTOR POOL

The motor pool building is approximately thirty-two years old, is used on a daily basis as well as during drill weekend drill. Armory personnel may complete any unfinished work that is left from the two days. One fire extinguisher was found in the area. The annual certification was due on August 2002 and the monthly inspection was last logged for August 2001.

Though portable eyewash was available it did not appear to be functional. No log is available to record periodic flushing of the system to ensure water purity. No log is available to record periodic flushing of the system to ensure water purity. A petroleum, oil, and lubricant (POL) storage building is available, but was not equipped with a fire suppression system.

The bay area s not equipped with functional exhaust fans. Maintenance personnel usually work outside, but open the bay doors and work inside during rainy or cold days.

No carbon monoxide units are available to alarm in case of dangerous levels when doors are closed, or when vehicles are left idle close to the building. The following is the airflow sample taken in the Motor Pool office:

EGETIONE	Sample Reading (EPM)	Area of grid 🚐
Motor pool office	221	6"x3'

Hearing Conservation Program

A noise survey was performed in the maintenance area while running a 2.5 ton vehicle. Noise levels measured 79.2 dBA, five feet in front of the source. The area is not marked as noise hazardous and a noise survey has not been completed on maintenance equipment.

TECHNICAL ASSISTANCE:



APPENDIX A - ADDITIONAL DATA

FACILITY DIAGRAM:

WALK THROUGHLOBSERVATIONS

No.	Location	Description	Petire#
1	Admin Hallway	Signs of water leak	Photo 1
2	Drill Hall	Possibly repaired signs of water leak,	Photos 2 & 3
3	Kitchen storage room	Signs of possible water leak	Photo 4
4	Weight room / Dorm	Signs of water leak	Photos 5 & 6
5	Janitorial hallway	Signs of water leak	Photo 7
6	Dorm bathroom	Signs of water leak, possible mildew	Photo 8
7	Classroom	Signs of water leak, possible mildew	Photos 9, 10, & 11
8	Motor pool shelf	Vehicle batteries are not stored in a secure area	Photo 12
9	Motor pool perimeter	POL storage building did not have flammable signs	
10	Motor pool storage trailer	Chemical (anti-freeze) drum leak in the building; lack of sufficient ventilation	Photo 13
11	Commander office	Signs of water leak	Photo 15
12	Admin office	Signs of water leak	Photo 16
13	Commander office	Water drip from the A/C unit near an electrical breaker	
14		Several outdated fire extinguishers without inspection information throughout the building	Photo 14 & 25
15	Conference room	Signs of water leaks	Photo 24

PAINT CHIP LEAD SAMPLE RESULTS

'Sample Location -		Results (ug/ft²)	Remarks
Ladies bathroom (paint chips)	9	BRL	

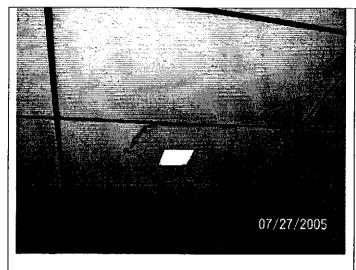
APPENDIX B - Recommendations:

- a. Develop a maintenance schedule for ensuring that filters in the individual air condition wall units are properly changed, any leaks or standing water are identified, repaired, and prevented, and supply and exhaust grilles are appropriately cleaned. Failure to do so may lead to further indoor air quality issues. The plan should include monitoring, inspecting and cleaning A/C unit components such as outside air intakes, outside air dampers, air filters, drain pans, heating and cooling coils, the interior of air handling units, fan motors and belts, air humidification, controls and cooling towers. Consult manufacturers' instructions for appropriate maintenance schedules.
- b. Non-porous (e.g., metals, glass, and hard plastics) and semi-porous (e.g., wood, and concrete) materials that are structurally sound and are visibly moldy can be cleaned and reused. Cleaning should be done using a detergent solution. Porous materials such as ceiling tiles and insulation, and wallboards with more than a small area of contamination should be removed and discarded. Porous materials (e.g., wallboard, and fabrics) that can be cleaned, can be reused, but should be discarded if possible. A professional restoration consultant should be contacted when restoring porous materials with more than a small area of fungal contamination. All materials to be reused should be dry and visibly free from mold. Routine inspections should be conducted to confirm the effectiveness of remediation work.
- c. Any initial water infiltration should be stopped and cleaned immediately. An immediate response (within 24 to 48 hours) and thorough clean up, drying, and/or removal of water damaged materials will prevent or limit mold growth. If the source of water is elevated humidity, relative humidity should be maintained at levels below 60% to inhibit mold growth. Emphasis should be on ensuring proper repairs of the building infrastructure, so that water damage and moisture buildup does not recur.
- d. Contaminated materials that cannot be cleaned should be removed from the building in a sealed plastic bag. There are no special requirements for the disposal of moldy materials.
- e. Upgrade lighting measurements as required. Replacing blown or broken lights, painting the walls a light color, cleaning existing light fixtures, rearranging furniture to make better use of available light, and supplemental or task lighting are considerations in increasing available light levels.
- f. An ergonomics survey should be completed for all supply and administrative personnel as a preventative measure to address and document any ergonomic concerns or problems. An emphasis on maintaining neutral postures and proper lifting techniques should be covered.
- g. Material Safety Data Sheets (MSDS) are required to be kept at the primary workplace facility and to be easily accessible in case of emergency. Personnel responsible for these items should receive annual training in the requirements of the Hazardous Communication Program and the appropriate keeping and storage of MSDSs.
- h. Personnel should be prohibited from drinking, eating, smoking chewing tobacco and gum, or applying makeup in supply and maintenance areas. Hands should be cleaned with soap and water before eating drinking, eating, smoking, chewing tobacco and gun, or applying makeup. Remove all refrigerators, cups, and other utensils from supply and maintenance areas.
- i. Equipment should not be stored in the area, since stored items can become contaminated with lead dust All stored items should be removed as soon as possible and thoroughly decontaminated before their removal. Consult The Army National Guard All States Log Number POI-0075, Policies and Responsibilities for Inspection, Evaluation, and Operation of ARNG Indoor Firing Ranges (IFR) and Guidelines for IFR Rehabilitation, Conversion, and Cleaning.
- j. Dry sweeping of indoor firing ranges is strictly prohibited.
- k. Fire extinguisher should be visually inspected on a monthly basis and recorded on service tag.
- I. Perform noise survey on maintenance equipment. Ensure that all noise hazardous machinery and noise hazardous areas are appropriately marked.

- m. Perform noise dosimetry on maintenance personnel during drill weekend, in order to document noise exposure. BEST AVAILABLE COPY
- Install Carbon Monoxide monitors specifically designed for industrial use in motor pool.
- Do not disturb damaged floor tiles, utilize damp mop to clean said areas.

May, 2018

APPENDIX C - Pictures



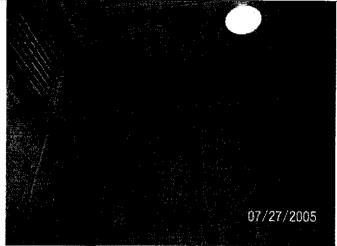


Photo # 1 Admin hallway water leak

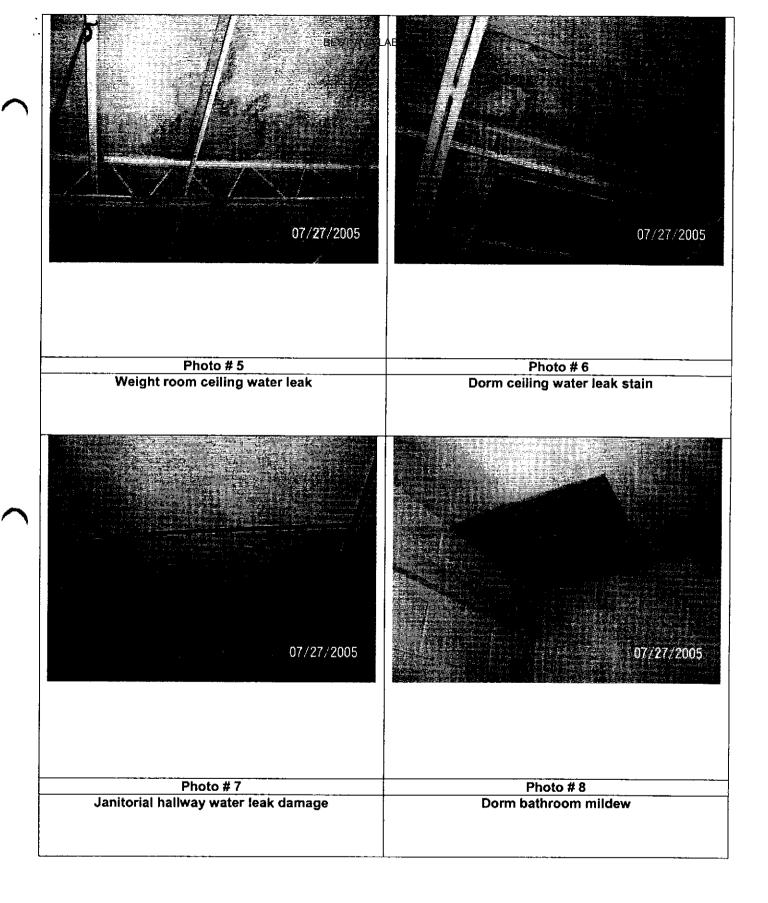
Photo # 2
Drill hall corner roof water leak stain

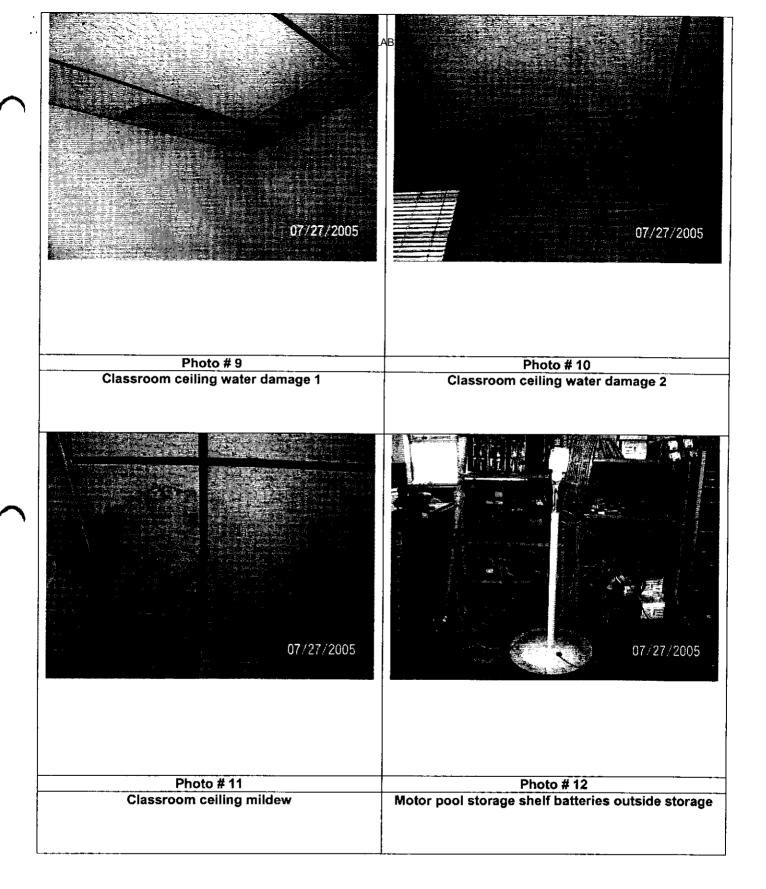


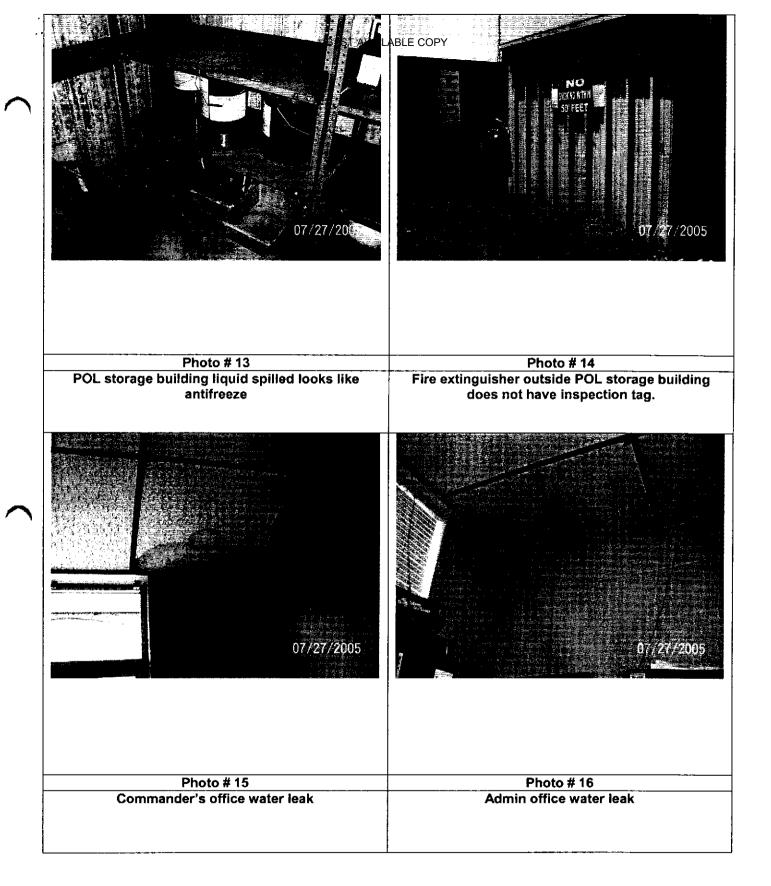


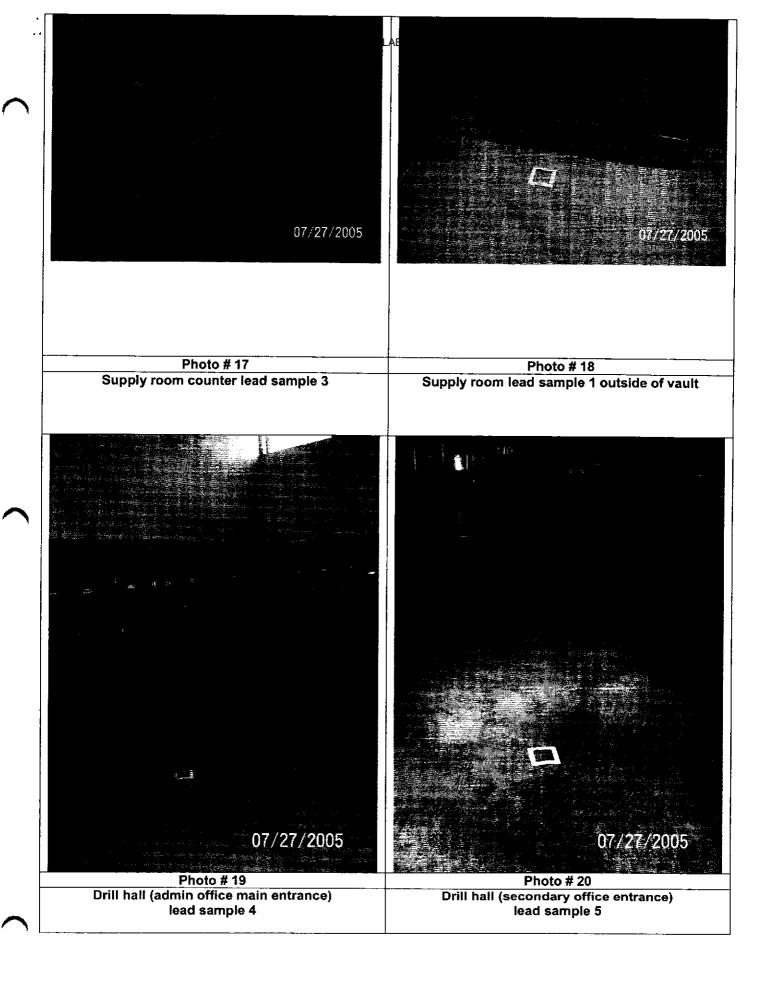
	Photo # 3	
Drill	hall center ceiling water lea	k stain

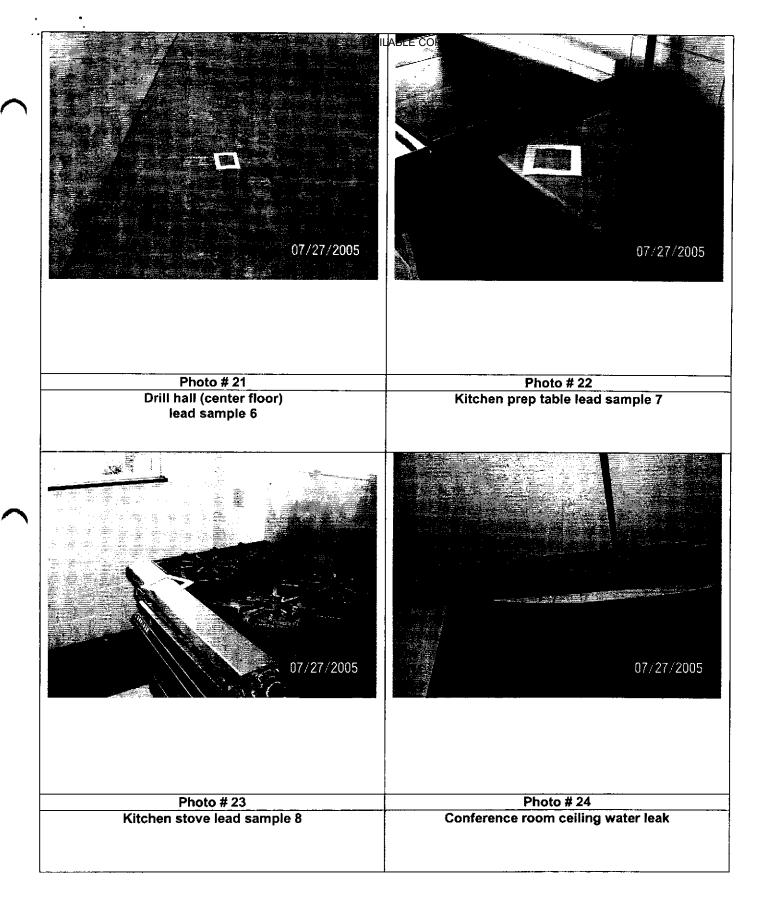
Photo # 4
Kitchen storage room water leak stain

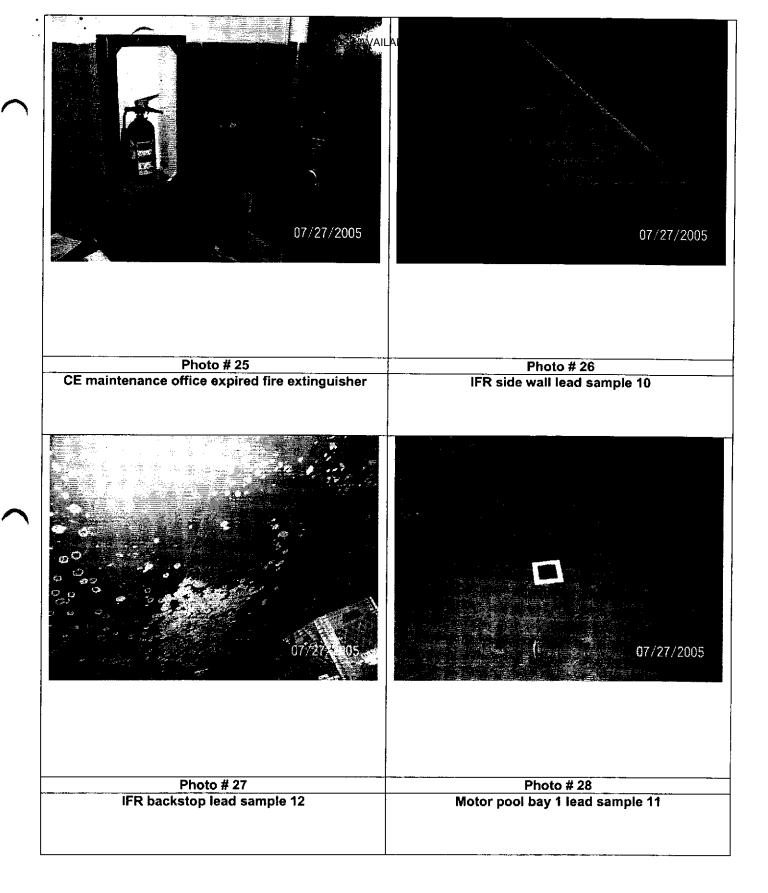


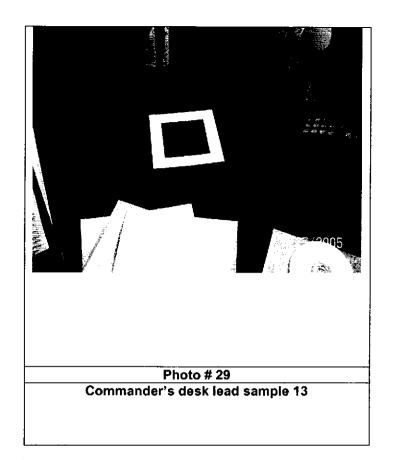












APPENDIX D.— Eab Report

Analytical Environmental Services, Inc.

Date: 8/10/2005

TOTAL LEAD IN WIPE SAMPLES N7082

CLIENT:

Technical Solutions International

Lab Order:

0508165

Project:

Laurens Armory

Date Received: 8/3/2005 12:30 PM

Delivery Order:

Matrix:

Wipe

PO No: W90PJM42015001-0001

Laboratory	Client Sample	Results	Units	Report	DF	Date	Date	Analyst
ID	H)			Limit.		Collected	Analyzed	
0508165-001A	LAURENS 1	BRL	ug. Iolai	20	Ť	7/27/2605	#/5/2005	VA
0508165-002A	LAURENS 2	arl	gg Tolal	20	į	7/27/2005	8/5/2005	VA
9598165-993 A	LAURENS 3	BRL	ag, Tobl	20	š	7/27/2005	8/5/2005	VA
9598165-004A	LAURENS 4	BRE.	ay, Total	29	ŧ	7/27/2005	8/5/2005	VA
650\$165×005A	LAURENS 5	BRI.	ріц, Телаі	20	ì	7/27/2005	8/5/2005	VA
0508165-006A	LAURENS 6	BRL	gg, Total	26	ł	7/27/2005	8/5/2005	VA
6598165-007A	LAURENS 7	BRE.	ру, Tolal	26	E	7/27/2005	\$ 5/2005	VA
0508165-008A	LAURENS 8	BRL	µg, `िलाश्री	279	\$	7/27/2005	8/5/2005	VA
0508165-010A	LAURENS 10	27400	µg. Lotal	547	27.36	7/27/2005	8/5/2005	VA
0508165-011A	LAURENS 11	21	µg, Tomi	20	Ł	7/27/2005	8/5/2004	VA
0508165-012A	LAURENS 12	1920	pg. Total	29	ŧ	7/27/2005	8/5/2005	VA
0508165-013A	LAURENS 13	BRL	րը, քում	26	1	7/27/2005	8/5/2005	VA

Analytical Environmental Services, Inc.

Date: 8/10/2005

TOTAL LEAD IN PAINT **PAINT**

CLIENT:

Technical Solutions International

Lab Order:

0508165

Project:

Laurens Armeny

Date Received: 8/3/2005 12:00 PM

Delivery Order:

W90P#M42(215@%+0001

Matrix:

PO 310:	AR ACID DEALMOND DOMESTS	riribia \$						
Laboratory	Client Sample	Results	Units	Report	DF	Date	Date	Analysi
m	ĦD			Limit.		Collected	Analyzed	
0508165-009A	LAURENS 9	HRI.	W1%	0.00856	i i	7:27/2005	\$/5/2005	VA

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APPENDIX E - THIM Sheets - -

Section 1. Demographics Data

a. ARLOC <u>45000</u>		t	b. Installation			c. BLD	c. BLDG / RM Number				
d. Location / Cod	de		e. Operation Code				f. Description				
g. MACOM/COD	E		ı. SUBi	MACOM/CODE		i. S	Supervise	Or			
j. Telephone / Al	JTOVO	ON Number				I. Frequency (hrs. per day)					
m. NO CIV(S)		n. NO MIL		o. NO Contracto	or(s) _	p. NO L	DC(S)	q. NO Other			
Section 2. II	Staf	fing data	<u> </u>		<u></u>			<u> </u>			
		_	easers	.	c. Mair	ntenance Bays		d. Spray Booths			
e. Open Surfac	e Tan	ks		f. Ventila	tion Ur	nits					
Section 3. Su			<u></u>		***************************************						
a. Survey Date					o. Evalua	ator (initials)					
c. Controls	Presen	t d. Evaluat	ion	e. Unit C	ode	f. Controls	Require	g. Status			
			-		, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,						
h. Persona	l Prot	ective Equipment (R - R	equired; A -	Availa	able)					
1. Respirator				- Manufa	cturer			OSHEYENO - SHR	Ā		
Disposable		maket :	· · · · · · · · · · · · · · · · · · ·		Martin Articulus				d deluce		
½ Face Air Pu				<u></u>							
½ Face Air Pu								/			
Full Face Air								/			
Powered Air	Purify	ring				· · · · · · · · · · · · · · · · · · ·					
Airline Self-Containe	.đ							/			
Abrasive Blas		hood									
7101031VC Dias	ing i	1000						/			
2. Gloves	R/A	3. Eye / Face		4. Hearing	R/A	5. Body	R/A	6. Head/Foot	R		
Acid	-		/	Muffs	17	Aprons	1	Hard Hats	+-		
ricia	′	Splash	′	IVIUIIS	'	Aprons	'	Haiu Hais			
Oil	7	Safety / Impact	/	Earplugs	/	Coveralls	/	Impermeable Boots	T		
Solvents	/	Chemical /	/	Canal	/	Full Body	/	Safety Conduct Shoes			
Hot Surfaces	/	Safety Full Face Shield	7	Caps Helmets	1	Suit Safety Belt /	/	Safety Non-	╀		
Cold	 -	Welding Helmet	/			Harness Heat Reflect	+ 7	Conductive Shoes	+		
Surfaces						Vest / Suit			L		
NBC Agents	<u> </u>		<u> </u>			BDU's	/				
Section 4.	izard	Inventory Data									
								d. Medical Surveilla	nce		
a. CAS Code	•	b. H	lazard	Description		c. PA	C or EP	C Recommended (Yes or	r No		
	+										
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May, 201	10						≺eleased	by National Guard Bureau Page 700 of 964			

Section 5. Personnel Data a. Last Name e. SSN (Last 4 digits) f. Category Section 6. Comments (add blank sheet of paper, if necessary)

Health Hazard Information Module (HHIM) Field Survey

Facility Name:	Laurens National Guard Armory	Date:	7/27/05	
Storage Area:				
Trade Name:				
Nomenclature:			Container:	
		···		
				.,
			1-1-1-1	
			Address .	
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Health Hazard Information Module (HHIM) Field Survey

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NATIONAL GUARD REGION SOUTH INDUSTRIAL HYGIENE OFFICE 510 PLAZA DRIVE, SUITE 1530 COLLEGE PARK, GA 30349

NGB-AVN-SI

13 June 2005

MEMORANDUM FOR the South Carolina Army National Guard, ATTN: Non-Responsive mory Supervisor, Co A 1/263rd Armor, 800 Green Street, Marion, SC 29571.

SUBJECT: Industrial Hygiene Survey of the Marion National Guard Armory, Marion, South Carolina.

- 1. References.
- a. Report submitted 19 May 2005. Industrial Hygiene Survey, Environmental Management Solutions
- b. OSHA Standards 29 CFR (Code of Federal Regulations), General Industry, revised 1988.
 - c. AR 40-5, Preventive Medicine, October 1990.
 - d. AR 11-34, 15 February 1990, the Army Respiratory Protection Program.
 - e. AR 385-10, 23 May 1988, Army Safety Program.
- f. Department of the Army Pamphlet (DA PAM) 40-501, 27 August 1991, Hearing Conservation.
 - g. TB MED 530, the Army Industrial Hygiene Program.
- h. Title 29 Code of Federal regulation (CFR), 1989 rev, Part 1910.94 (c) (6) Table G-10, Ventilation.
- i. Industrial Ventilation, 21st ed, 1992, American Conference of Governmental Industrial Hygienist, Cincinnati, Ohio.
- j. IES Lighting Handbook, Application Volume, 1981, Illumination Engineering Society of North America.
- 2. General.
- a. At the request of the South Carolina State Safety and Occupational Health Office and the Region South Industrial Hygiene Office a Service Contract was put together to conduct Health Hazard Information module (HHIM) Field surveys and IH surveys at the South Carolina National Guard Armories.

- b. Non-Responsive conducted the survey.
- 3. Findings. All HHIM field survey forms and survey findings of the report are enclosed. (See ENCL. 1)
- 4. Recommendations.
- a. Follow all recommendations made in reference 1. a., requesting industrial hygiene (IH) services where needed to complete the recommendations except for installing Carbon Monoxide Monitors in the motor pool area.
- b. Request help in eliminating possible employee lead exposures. Be prepared to educate personnel on proper housekeeping procedures of the range. Follow NG PAM 385-16, Guidelines for converting indoor firing ranges to other uses and NG PAM 385-15, Policy, Responsibilities and guidelines for housekeeping, rehabilitation and/or conversion of indoor firing ranges.
 - c. Use the report to help in correcting all deficiencies noted by the contractor.
- d. Consider additional Industrial Hygiene services to monitor operations that were not looked at or surveyed during the contract visit, especially if this will help eliminate health hazards and reduce medical surveillance cost.
- e. To execute your responsibilities in correcting all deficiencies and meeting all standards coordinate with the FMO, the Environmental Office the Occupational Health Nurse and the Occupational Safety and Health Office for technical guidance.
- f. Ensure that the FMO and the Environmental Offices receive a copy of this report.



CF: Safety and Occupational Health Office, ATTN: Non-Responsive 1 National Guard Road, Columbia, SC 29201-4766

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ENVIRONMENTAL MANAGEMENT SOLUTIONS INDUSTRIAL HYGIENE CONSULTING

SOUTH CAROLINA ARMY NATIONAL GUARD

MARION ARMORY
MARION, SOUTH CAROLINA

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Marion Armory Survey Date: 2 May 2005

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Environmental Management Solutions

EXECUTIVE SUMMARY

An initial baseline industrial hygiene survey was conducted at the Marion Armory on 2 May 2005 as part of the South Carolina Army National Guard Occupational Health Program to identify potential health hazards in the workplace. The survey consisted of collecting lead wipe samples and bulk asbestos samples as needed, conducting a noise and illumination survey and an evaluation of the condition of the building as it related to indoor air quality. A review of the Hazard communication program, ergonomics, and personal protective equipment was also performed.

The following table summarizes the survey findings and recommendations for each topic surveyed.

TOPIC	SUMMARY OF FINDINGS	RECOMMENDATIONS
Lead Wipe Samples	0 to 410 micrograms. Lead results in the converted Indoor firing range area are above requirements. Maintenance and drill hall areas also show higher than recommended levels of lead contamination.	Clean surfaces in the maintenance and drill hall areas, decontaminate all contaminated items, and follow good hygiene and housekeeping practices. Continued monitoring of the indoor firing range area should be conducted annually and in accordance with Army National Guard All States Log Number P01-0075, Policies and Responsibilities for Inspection, Evaluation, and Operation of ARNG Indoor Firing Ranges (IFR) and Guidelines for IFR Rehabilitation, Conversion, and Cleaning
Asbestos Bulk Samples	No findings	No action
Noise Survey	Under 85 dBA	A noise survey should be performed on equipment used and maintained in the maintenance area.
Illumination Survey	0.5 to 131 foot-candles	Upgrade lighting to appropriate levels.
Building Condition	Building in poor condition. Water damage was observed on ceiling and floor tiles and there was a visible problem with pests	Develop a housekeeping schedule to identify, repair, and prevent any leaks or standing water. Immediately address any items that have gotten wet by cleaning or discarding.
Hazard Communication	Material Safety Data Sheets were not available. Supply sergeant was not present to provide information or access to supply areas.	Material Safety Data Shects should be updated and easily available in case of emergency.
Ergonomics	Poor workstations design in some offices	Complete ergonomics survey on all personnel and offer ergonomic training or awareness to employees who spend the majority of their

Marion Armory Survey Date: 2 May 2005

		time working on a computer terminal
Personal Protective Equipment	PPE is needed for personnel during training periods. No PPE was observed in the maintenance area.	provided by unit commander

Environmental Management Solutions Report Date: 18 May 2005

MEMORANDUM FOR

South Carolina Army National Guard



Marion, South Carolina 29571

SUBJECT

Initial Baseline Industrial Hygiene Survey of the Marion Armory performed 2 May 2005 in Marion, South Carolina.

BACKGROUND

INTRODUCTION

At the request of Non-Responsive of the National Guard Bureau Region South Industrial Hygiene Office, an initial baseline industrial hygiene survey was performed at the Marion Armory in Marion, South Carolina. Environmental Management Solutions conducted the survey on 2 May 2005. Non-Responsive Industrial Hygiene technician NGB, assisted with the survey. The purpose of the survey was to perform an initial baseline industrial hygiene survey to evaluate potential health hazards present at the armory.

SITE DESCRIPTION

The facility houses Co A 1/263rd. The single story building contains several administrative offices, a classroom, a drill hall, and a kitchen. A converted indoor firing range is present and is being used as storage space. The range was closed several years ago. Refer to Building layout in Appendix C. Soldiers perform weapons cleaning quarterly in the drill hall area. The atmory is rented out to the city for private functions approximately one to two times per month.

SCOPE OF WORK

The work included collecting wipe samples for lead, bulk samples for suspect asbestos containing building material, noise readings, illumination levels, and an evaluation of the ventilation system as it pertains to indoor air quality. A list of occupational health programs and procedures were verbally covered with the armory personnel where applicable.

Environmental Management Solutions Report Date: 18 May 2005

Marion Armory Survey Date: 2 May 2005

METHODOLOGY

Lead wipe samples were collected from surfaces that showed signs of lead contamination in armories that have a renovated, inactive, or closed indoor firing range (IFR), kitchen or mess hall storage areas, indoor drill halls, and storage rooms with weapons vaults. The samples were collected in accordance to instructions published by Region South National Guard Bureau, which required the use of unscented baby wipes to wipe one square foot of surface. Samples were then placed in a sealed plastic bag and sent to an American Industrial Hygiene Associations (AIHA) accredited laboratory for analysis. Asbestos bulk samples and lead paint chips were collected from suspect friable and damaged building material when indicated. Each bulk sample was placed in a sealed bag and sent to an AIHA laboratory for analysis. All instruments used for assessment were factory calibrated and calibrated prior to the survey as applicable. Illumination readings were taken on work surfaces and approximately four feet from the floor.

Environmental Management Solutions Report Date: 18 May 2005

FINDINGS AND DISCUSSION

LEAD WIPE SAMPLES

Eight wipe samples were collected from areas of the kitchen, supply, drill hall, and converted indoor firing range areas as listed in the table below.

SAMPLE NUMBER	SAMPLE LOCATION	MICROGRAMS OF LEAD (μg) PER SQUARE FOOT
MR-01	Drill Hall, Floor Left side of roll up door	BRL
MR-02	Maintenance Storage Floor	410
MR-03	Drill Hall Floor Near Boiler Room	45
MR-04	Kitchen Area Floor in rear on right	BRI.
MR-05	Kitchen sink area middle of floor	BRL
MR-06	Storage Area (Firing range) top of unused solvent tank	188
MR-07	Storage Area (Firing range) floor near roll up door	126
MR-08	Storage Area (Firing range) near bullet trap	166

Items listed in bold are above regulated limit.

Environmental Management Solutions Report Date: 18 May 2005

The Army National Guard All States Log Number P01-0075, Policies and Responsibilities for Inspection, Evaluation, and Operation of ARNG Indoor Firing Ranges (IFR) and Guidelines for IFR Rehabilitation, Conversion, and Cleaning requires a limit of 200 micrograms per square foot for surface contamination in and around indoor firing ranges closed or converted for other uses. Lead results in these areas are elevated but not over the required limit.

The Environmental Protection Agency standards (40 CFR 745) indicate lead in dust levels above 40 micrograms per square foot on bare and carpeted floors is considered dangerous for common areas. Lead results in the maintenance and drill hall areas were above regulated standards.

ASBESTOS SUSPECT BUILDING MATERIAL

Sampling for asbestos was limited to damaged material or material that could pose an exposure risk. No friable suspect material was found.

NOISE SURVEY

Area noise levels are well within the Army National Guard limit of 85 dBA and the Occupational Safety and Health Administration (OSHA) regulated limit of 90 dBA over an eight-hour period. A noise survey should be performed on equipment used and maintained in the maintenance area.

ILLUMINATION SURVEY

Lighting levels throughout the armory ranged between 0.5 foot-candles to 131 foot-candles. Specific readings are listed in the table below.

ARΕΛ	AVERAGE FOOT- CANDLES	RECOMMENDED FOOTCANDLES	MEETS STANDARD?
Drill hall	74.4	10-15	Y
Office Common Area	45.5	50-75	N
Commander Office	32.2	50-75	N
Office #3	55.4	50-75	Y
Conference Room	47.9	50-75	N

Environmental Management Solutions

Report Date: 18 May 2005

Marion Armory Survey Date: 2 May 2005

- 11				
Library	61.4	50-75	Y	
HVAC Room	3.5	10-15	N	-
Classroom	131.0	50-75	Y	
Maintenance Storage	28.5	20-30	Y	
Large Boiler Room	0.5	10-15	N	
Oil House	57.1	10-15	Y	
IFR	13.0	20-30	N	-
Kitchen	37.6	50-75	N	
Kitchen Sink Area	51.8	50-75	Y	
Kitchen Storage	39	20-30	Y	
Female Restroom	29	10-15	Y	
Male Restroom	25.4	10-15	Y	
Locker room	20.8	10-15	Y	
Locker Room Shower	60.0	10-15	Y	,
Small Boiler Room	3.3	10-15	N	

Environmental Management Solutions Report Date: 18 May 2005

Readings in bold-faced type do not meet the American National Standard Institute/Industrial Engineering Society (ANSI/IES) minimum illumination requirements. See recommendations for appropriate action.

BUILDING CONDITION

The building was constructed in 1978. The building is in poor condition due to water damage to ceiling and floor tiles, bulging ceiling tiles, missing ceiling tiles, cobwebs, spiders, and dust that could be seen in several areas of the building. Floor tiles were cracked and could be felt coming apart from the mastic beneath them. Housekeeping was poor due to improperly stored items in the oil house and mechanical rooms. No leaks or standing water was observed, however personnel indicate that the roof leaks in the drill hall area near the windows. The roof leaking is a recurring problem. Personnel did not have specific complaints about the indoor air quality.

The boiler is in the process of being converted to natural gas. The offices are heated and cooled with separate systems. Additionally, the building was struck by lightning some time ago and since lighting has been a problem in the armory. Several lights were not working in several areas throughout the armory. Extension cords are used to power appliances. In the HVAC room, storage could be seen underneath the electrical panel. Improper storage was observed in all of the HVAC and boiler rooms.

The converted indoor firing range/storage area had several chemicals used by maintenance and weekend personnel. The supply sergeant in charge of the area was unavailable at the time of the survey. No ventilation system was present, and personal protective equipment was not observed. No eyewashes or showers were present. Several unmarked bottles were seen in the area.

HAZARD COMMUNICATION

The supply sergeant in charge of Material Safety Data Sheets was not available for the survey. Personnel could not find Material Safety Data Sheet or Hazardous Materials information.

RADIATION PROTECTION PROGRAM

Supply sergeant was unavailable for questioning regarding radioactive inventory

ERGONOMICS

The full time employees in the supply or office areas did not express any ergonomic concerns. However, many workstations were not set up to provide neutral postures and appropriate ergonomically correct positions. Consideration should be given to providing all full time employees that spend the majority of their working time at a computer terminal ergonomic training or awareness. Such awareness should emphasize the importance of proper posture and set-up of the workstation to fit the user.

Environmental Management Solutions Report Date: 18 May 2005

Marion Armory Survey Date: 2 May 2005

PERSONAL PROTECTIVE EQUIPMENT

Normal duties of full time employees at the armory do not require the use of personal protective equipment (PPE). However, personnel working in maintenance training areas should be provided the appropriate PPE.

Environmental Management Solutions Report Date: 18 May 2005

RECOMMENDATIONS

- 1) All items that are contaminated with lead should be thoroughly decontaminated with a detergent and water solution. Care should be taken to wipe down tables where weapons are issued and cleaned. Kitchen areas should be thoroughly cleaned on a regular basis and especially before serving personnel.
- 2) Personnel should be prohibited from eating, drinking, smoking, chewing tobacco or gum, or applying cosmetics in supply areas and should be instructed to clean hands with soap and water before doing any of these. Remove all refrigerators, cups, and other eating utensils from supply areas.
- 3) Annual monitoring of the converted indoor firing range should be performed to ensure that lead levels remain below 200 micrograms per square foot. Consult the Army National Guard All States Log Number P01-0075, Policies and Responsibilities for inspection, Evaluation, and Operation of ARNG Indoor Firing Ranges (IFR) and Guidelines for IFR Rehabilitation, Conversion, and Cleaning on guidelines for monitoring, cleaning and converting Indoor Firing Range.
- 4) Upgrade lighting measurements as required. Lighting can be upgraded in the following ways:
 - Replace blown or broken lighting
 - Paint walls and floors white or similar light color
 - Clean existing light fixtures
 - Rearrange furniture to make better used of available light
 - Provide supplemental or task lighting
- 5) Develop a housekeeping schedule to **immediately** identify, repair, and prevent any leaks or standing water. Proper and immediate repairs and maintenance of the building infrastructure and interior surfaces can prevent water damage and moisture buildup which may lead to further indoor air quality issues.
- 6) Fix all leaks and water-damaged areas that allow water to get into the ventilation system or building surfaces, and materials. Prevent buildup of moisture in occupied spaces and in HVAC components. Remove stagnant water and slime from mechanical equipment.
- 7) Find and discard microbial-damaged furnishings and equipment. Ceiling tiles should be discarded and replaced. Floor should be cleaned and sealed.

Environmental Management Solutions Report Date: 18 May 2005

Clean and disinfect all contaminated surfaces such as the supply diffusers with a 10 percent CloroxTM solution during off hours.

8) When water damage occurs:

- Inventory all water damaged areas, building materials, and furnishings.
- Remove and dispose of all wet ceiling tiles within 24-48 hours of water damage.
 Spray the back of the water damaged tile with a dilute bleach solution. Place tile in garbage bag. If the ceiling tile has become wet due to a small stream leak and the shape of the tile has not been altered, the ceiling tile can be air-dried and reused.
- Upholstered furniture that has become wet due to floods; roof leaks sewage backup and ground water infiltration should be disposed.
- Hardwood furniture or laminate furniture whole laminate is intact should be air dried and cleaned with a solution of 1/4 to 1/2 cup bleach per gallon of water.
- Laminate furniture whole laminate has become delaminated should be disposed of as pressed wood under the laminate absorbs water readily and is hard to dry.
- Furniture made of particleboard or pressed wafer board should be discarded after water damage.

9) If carpet is wet for less than 48 hours:

- Remove all materials such as furniture, file cabinets, paperwork form the carpet.
- Use a wet vacuum to remove as much water from the carpet as possible
- Shampoo the carpet with a dilute surfactant.
- Soak with a ¼ to ½ cup bleach/water solution. The maximum concentration should not exceed 1 part bleach to 10 parts water.
- Rinse and extract the carpet with clean water to remove detergent/bleach residues.
- Commercial steam cleaning can be used in place of bleach as long as the water used to steam the carpet is heated above the boiling point.
- Dry the carpet within 12-24 hours of treatment. After work is completed, increase
 the room temperature, and use commercial dehumidifiers, floor and or exhaust fans
 to aid in drying the carpet.

Environmental Management Solutions Report Date: 18 May 2005

Marion Armory Survey Date: 2 May 2005

- If carpet is wet for more than 45 hours during the wintertime, the above protocol can be used to manage the carpet and salvage it, provided it became wet with relatively clean water.
- If carpet is wet for more than 48 hours during the summertime, disposal of waterdamaged carpets especially in humid environments is often the best option.
- 10) Bricks and concrete material, specifically at building entrances should be cleaned with a bleach and water solution. DO NOT follow with a clear water rinse in order to allow the bleach to remain and thoroughly decontaminate the surface.
- 11) Obtain all specifications and drawings of the HVAC system and have the system properly balanced. Remove all storage from HVA rooms and within three feet of electrical panels.
- 12) Improve air filtration by using efficient filters to remove spores, pollen, dirt, and other particles, which may be distributed through the HVAC system. High efficiency style filters should be included in the HVAC filter section. It is essential that all supply air pass through a pre-filter and a high efficiency final filter. Use filters with at least a 50-70 percent collection efficiency rating. Ensure that filters are the appropriate size for the HVAC system. Develop a maintenance schedule for ensuring that filters are properly changed, any leaks or standing water are identified, repaired, and prevented. Provide pigeon screens on intakes and exhausts.
- 13) Provide preventative maintenance of HVAC systems. Institute a comprehensive and practical preventative maintenance plan to check, clean, and/or repair, HVAC system components, lined ductwork, and ceiling plenums at least quarterly.
- 14) Maintain relative humidity between 30 to 60%
- 15) Consult State Environmental Office for approval of an appropriate pesticide to prevent rodent and insect infiltration.
- 16) Material Safety Data Sheets (MSDS) are required to be kept at the primary workplace facility and to be easily accessible in case of emergency. Material Safety Data Sheets for cleaning materials should be kept by the facility. Personnel responsible for these items should receive annual training in the requirements of the Hazardous Communication Program and the appropriate keeping and storage of all MSDS.
- 17) Ensure that all chemicals not in their original containers are appropriately marked as to their contents.
- 18) Storage in oil house should be on pallets. Bottles and boxes that are bent or collapsed should be replaced with items in suitable containers. Ensure that

Environmental Management Solutions Report Date: 18 May 2005

flammable items are stored with similar items and the entrance door is appropriately marked.

- 19) Complete noise dosimetry and a noise survey on all maintenance equipment and mark equipment and areas as noise hazardous, where appropriate.
- 20) Install a carbon monoxide monitor in the motor pool area to warn personnel about dangerous levels of carbon monoxide from vehicles idling in or around the area. The maintenance bay door should be left open while vehicles or running or left idling in order to provide adequate ventilation during these times.
- 21) An eyewash and shower should be acquired for the motor pool area, due to the types of chemicals commonly used in this area. An eye lavage should be made accessible within 10 seconds traveling distance of a possible eye hazard. Use portable eyewashes only if a plumbed eyewash cannot be installed.
- 22) Personal protective equipment should be provided, used, and maintained in a sanitary and reliable condition. Ensure that unit commanders provide appropriate personal protective equipment during maintenance procedures. If damaged or defective, PPE should be replaced immediately.
- 23) An ergonomics survey should be completed for all supply and administrative personnel as a preventative measure to document and address any and all ergonomic concerns or problems. Provide ergonomics training and awareness to all employees who spend the majority of their time working at a computer terminal.

TECHNICAL ASSISTANCE

For technical assistance reparding information found in this report or the performed survey please contact Non-Responsive Regional Industrial Hygienist at the National Guard Bureau Region South Industrial Hygiene Office at Non-Responsive



Environmental Management Solutions Report Date: 18 May 2005

Marion Armory Survey Date: 2 May 2005

Environmental Management Solutions

Environmental Management Solutions Report Date: 18 May 2005

APPENDICES



APPENDIX A	

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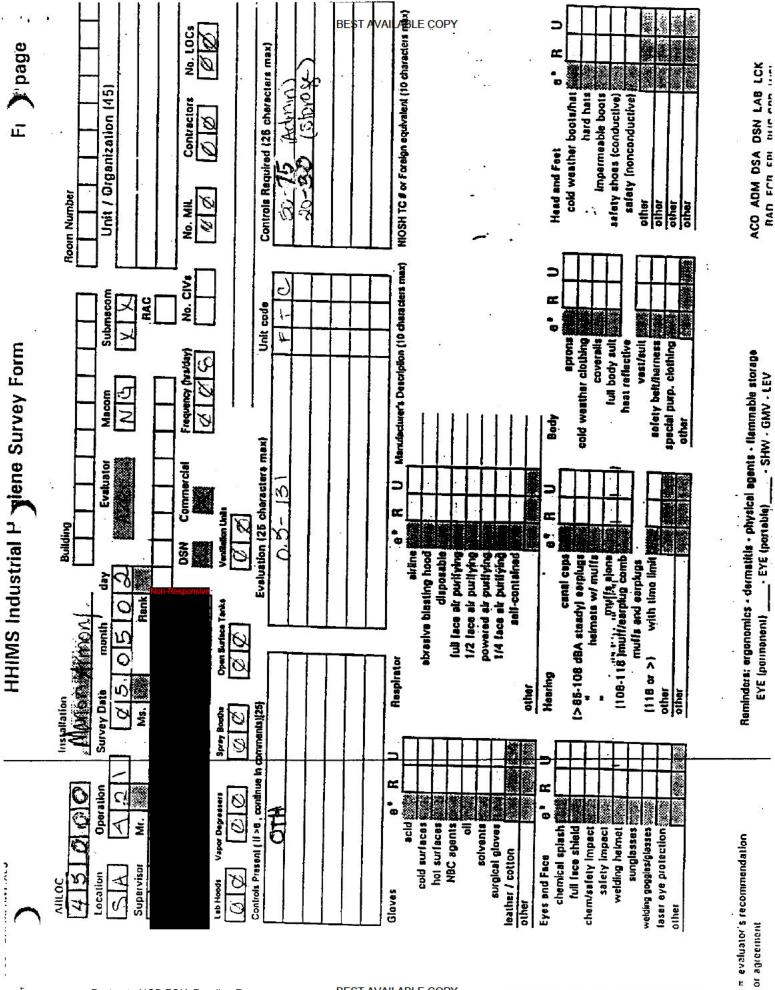
- American conference of Governmental Industrial Hygieist (ACGIH), Industrial Ventilation, A Manual of Recommended Practice, 23rd Edition, 1998. American National Standards Institute (ANSI), /Illuminating Engineering Society (IES), Industrial Lighting, 1991.
- Army Regulation (AR) 11-34, The Army Respiratory Protection Program, 1990.
- Army Regulation (AR) 40-5, Preventative Medicine, 15 October 1990.
- Army Regulation (AR) 385-10, The Army Safety Program, 29 Feb 2000.
- □ NGR 385-10, Army National Guard Safety and Occupational Health Program, 7 October 1988.
- TB MED 503, The Army Industrial Hygiene Program, February 1985.
- □ Title 29, Code of Federal Regulations (CFR), 1999, revision, Part 1910, Occupational Safety and Health Standards.
- □ TG 022, US Army Environmental Hygiene Agency (YSAEHA), Industrial Hygiene Evaluation Guide, October 1975.
- ☐ TG 141, US Army for Health Promotion and Preventative Medicine (USACHPPM) Industrial Hygiene Air Sampling Guide, November 1997.

APP	ENI) IX I	3	

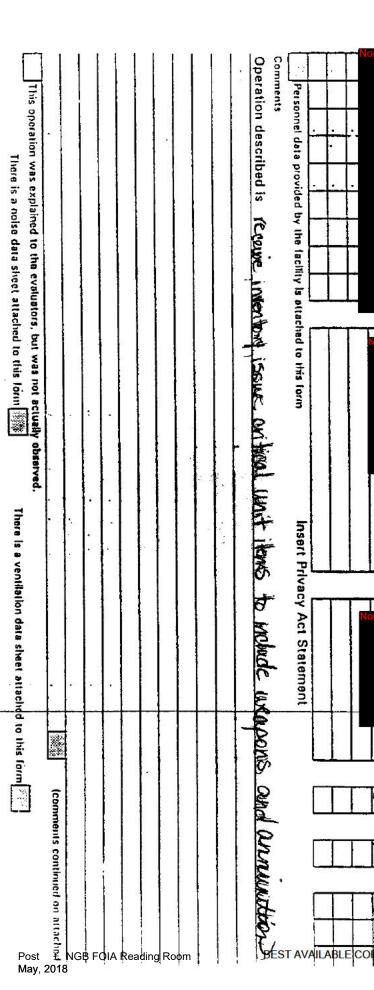
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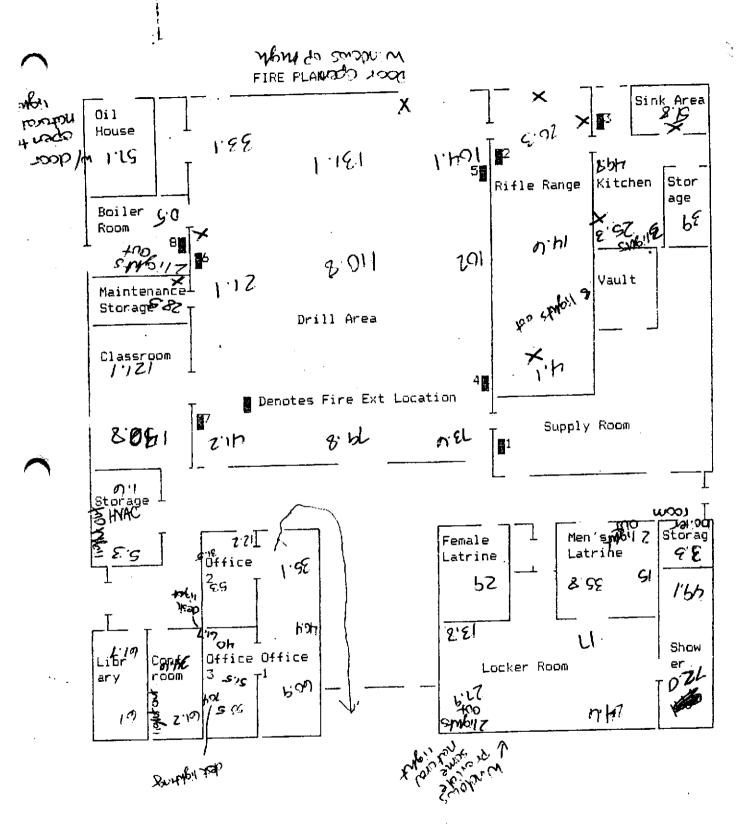


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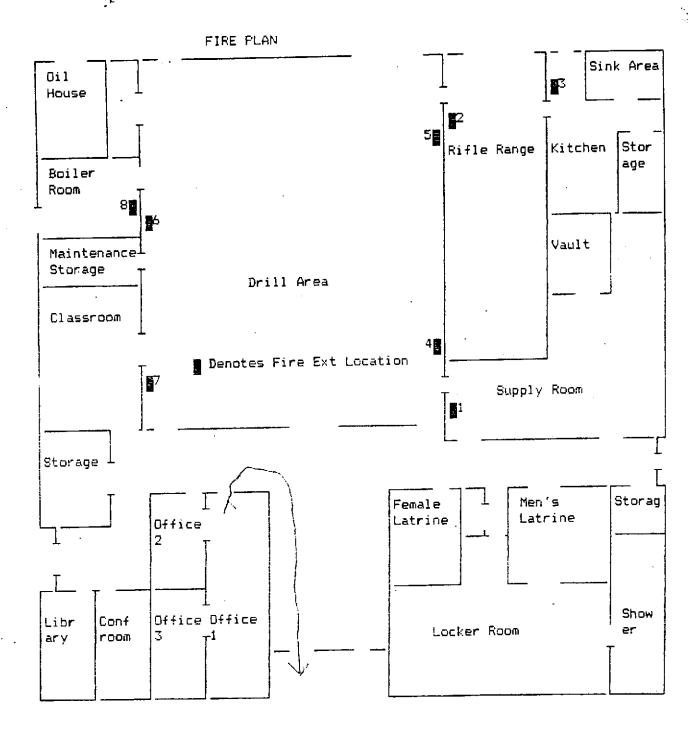


NGB FOIA Reading Room

Released by National Guard Bureau Page 729 of 964









APPENDIX C	



Marion Armory

Administrative Area





Cracked floor tiles







Water damage, bulging tiles

Administrative area, missing ceiling



HVAC Room



Post t NGB FOIA Reading Room May, 2018

majority of roof leaks are from this Drill Hall, Personnel indicate a

area



Spiders, cobwebs, mold



Stove, kitchen area



Missing ceiling tiles

Water damage on side wall from roof



leak

Kitchen, missing ceiling tiles



Kitchen storage area. Storage near electrical items.



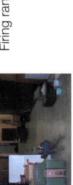
Drill Hall





Firing range converted to storage





Unmarked bottles with industrial









Firing range converted to storage

Oil house, ventilation fan





Solvent tank







Oil house storage







Boiler room



Oil house, explosion proof lighting



Oil house storage



Boiler room



Boiler room



APPENDIX D



Page: 2/3

Date: 5/11/2005 4:19:28 PM

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Analytical Environmental Services, Inc.

Date: 5/11/2005

TOTAL LEAD IN WIPE SAMPLES N7082

CLIENT:

National Guard Bureau Region-South IH

Project:

PO No:

Scarng Manon Armory

Delivery Order:

Lab Order:

0505379

Date Received:

5/5/2005 8:00:00

Matrix:

Wipe

Laboratory	Client Sample	Results	Units	Report	DF	Date	Date	Analyst
Ю	ID			Limit.		Collected	Analyzed	
0505379-001A	MR-01	BRL	μg, Total	20	1	5/2/2005	5/10/2005	EM
0505379-002A	MR-02	410	μg, Total	20	1	5/2/2005	5/10/2005	EM
0505379-003A	MR-03	45	μg, Total	20	1	5/2/2005	5/10/2005	EM
0505379-004A	MR-04	BRL	μg, Total	20	1	5/2/2005	5/10/2005	EM
0505379-005A	MR-05	BRL	μg, Total	20	1	5/2/2005	5/10/2005	EM
0505379-006A	MR-06	188	μg, Total	20	1	5/2/2005	5/10/2005	EM
0505379-007A	MR-07	126	μg, Total	20	1	5/2/2005	5/10/2005	EM
0505379-008A	MR-08	166	μg, Total	20	1	5/2/2005	5/10/2005	EM

Qualiflers:

BRL - Not Detected at the Reporting Limit

DF - Dilution Factor

NATIONAL GUARD REGION SOUTH INDUSTRIAL HYGIENE OFFICE 510 PLAZA DRIVE, SUITE 1530 COLLEGE PARK, GA 30349

NGB-AVN-SI

6 October 2005

MEMORANDUM FOR the South Carolina Army National Guard, ATTN: Armory Supervisor, 715 Bradley Street, McCormick, SC 29006.



SUBJECT: Industrial Hygiene Survey of the McCormick National Guard Armory, McCormick, South Carolina.

- 1. References.
- a. Report submitted 5 October 2005, Industrial Hygiene Survey,



- b. OSHA Standards 29 CFR (Code of Federal Regulations), General Industry, revised 1988.
 - c. AR 40-5, Preventive Medicine, October 1990.
 - d. AR 11-34, 15 February 1990, the Army Respiratory Protection Program.
 - e. AR 385-10, 23 May 1988, Army Safety Program.
- f. Department of the Army Pamphlet (DA PAM) 40-501, 27 August 1991, Hearing Conservation.
 - g. TB MED 530, the Army Industrial Hygiene Program.
- h. Title 29 Code of Federal regulation (CFR), 1989 rev, Part 1910.94 (c) (6) Table G-10, Ventilation.
- Industrial Ventilation, 21st ed, 1992, American Conference of Governmental Industrial Hygienist, Cincinnati, Ohio.
- j. IES Lighting Handbook, Application Volume, 1981, Illumination Engineering Society of North America.
- General.
- a. At the request of the South Carolina State Safety and Occupational Health Office and the Region South Industrial Hygiene Office a Service Contract was put together to conduct Health Hazard Information module (HHIM) Field surveys and IH surveys at the South Carolina National Guard Armories.
 - pons conducted the survey.

- 3. Findings. All HHIM field survey forms and survey findings of the report are enclosed. (See ENCL. 1)
- 4. Recommendations.
- a. Follow all recommendations made in reference 1. a., requesting industrial hygiene (IH) services where needed to complete the recommendations.
- b. Use the report to help in correcting all deficiencies noted by the contractor.
- c. Take extra care when cleaning the Weapons Vault and the Weapon Vault Racks.
- d. Consider additional Industrial Hygiene services to monitor operations that were not looked at or surveyed during the contract visit, especially if this will help eliminate health hazards and reduce medical surveillance cost.
- e To execute your responsibilities in correcting all deficiencies and meeting all standards coordinate with the FMO, the Environmental Office the Occupational Health Nurse and the Occupational Safety and Health Office for technical guidance.



CF: Safety and Occupational Health Office, ATTN: No Guard Road, Columbia, SC 29201-4766

Non-Responsive

1 National



715 Bradley St. McCormick, SC 29006

RE: Baseline Industrial Hygiene Survey

FINAL REPORT

FOR

BASELINE INDUSTRIAL HYGIENE SURVEY

SOUTH CAROLINA ARMY NATIONAL GUARD

McCORMICK ARMORY

McCORMICK, SC

DATE:

SEPTEMBER 7, 2005

PREPARED BY



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Attachment 2 Laboratory Reports: Deactivated Indoor Firing Range

Weapons Vault Racks

Attachment 3 Laboratory Reports: Kitchen and Drill Hall

Attachment 4 Photographs of the Facility

Attachment 5 Schematic Drawing of Facility

1.0 INTRODUCTION

At the request of the National Guard Bureau South Region Industrial Hygiene Office, Non-Responsive performed a Baseline Industrial Hygiene Survey at the SC ARNG McCormick Armory. The purpose of the survey was to perform a baseline survey to evaluate health hazards, controls present in the work site, collect lead swipe samples from renovated/inactive or closed Indoor Firing Ranges, Weapons Vault racks, A/C-Heating System, illumination survey and to make recommendations regarding health hazards associated with the work at the McCormick Armory.

Personnel do not know for sure when the building was finished. It was probably built either in the 50s or 60s. The facility houses the Company A-Det. 1, 122nd ENGR BN. The armory is used by the troops of the Company A-Det. 1,122nd ENGR BN for their monthly weekend drills.

The Company A-Det. 1,122nd ENGR BN with about 70 troops had two full time AGR personnel at the time of the survey. The AGR employees are assigned to perform administrative duties, Monday-Friday 7:30am-5: 00pm with every other Monday off. The facility houses administrative areas, a drill hall, classrooms, supply room, a weapons vault, a kitchen, and a deactivated Indoor Firing Range which was converted to storage area and conference room. The kitchen is used to cook for troops on weekend drills. The kitchen was clean the day of the survey. Wipe samples were taken from the kitchen. The facility has only wall or window A/C units. Personnel reported that leaks have been fixed in the drill hall. Small areas have paint peeling from the old leak and will need repainting. A schematic drawing of the facility can be found in Attachment 5.

The facility was visually examined and personnel consulted to assess potential hazards present. Health Hazard Information Modules were completed. Illumination survey was performed throughout the facility. There is generalized poor lighting through out the facility.

2.0 INSTRUMENTATION/CALIBRATION

The following instrumentation was used to obtain light measurements. The instrument used has been calibrated and was operated according to the manufacturer's recommendations:

EXTECH Light Meter

3.0 **FINDINGS**

Illumination

Illumination levels were recorded in administration offices and the supply room. Light measurements were below IES guidelines at the Ops-Readiness NCO office (The room has only two four bulbs light fixtures and both have two bulbs out) and the R&R room (It has only one four 92" light fixture). The training room had two fixtures, out of four, with two bulbs out. Bulbs were also out in the commander office. The other areas tested were within IES guidelines. Consideration should be given to provide supplemental lighting at the locations that were below the recommended standard and to replace burned out bulbs as listed above. See Light Readings Table at the end of this section.

Administration

Personnel perform administrative duties that consist of reading, handling and generating paper work. Computer use comprises a large portion of the working day, four to six hours per day. This continuous use of computers can in the long run lead to eyestrain and hand/wrist soreness. No health problems reported by personnel at the time of the survey.

Motor Pool

The motor pool is located in a fenced and locked area behind the building. PMCS maintenance is performed at the motor pool on weekend drills. The operator level maintenance is mostly performed in the maintenance building located behind the armory. When major and other repairs for the vehicles are needed, they are performed at the OMS facility in Edgefield.

Drill Hall

The Drill Hall is located in the center of the building. It is used primarily for formation, and sometimes for training if it is raining on weekend drills. The Drill Hall is not regularly used to clean weapons. It is normally done in the maintenance building. If it is done here, Rags with CLP are used to clean the weapons on tables set up on the Drill Hall floor. The used rags are collected and placed in a container. An independent contractor comes to the armory to pick-up the container for its disposal. Weapons are distributed from the vault in the Supply Room. The Bay door should be opened, weather permitting, when the weapons are cleaned. There are two air exhaust ventilators located one at each end of the Drill Hall, and close to the roof. Both were working well at the time of the survey. They are turned on when it is hot in the Drill Hall. The Drill Hall is rented out about five or six times a year mostly for wedding receptions. The renters bring their own food using catering services. The kitchen is not used by renters.

May, 2018

Boiler Room

There is a boiler room that has an old metal boiler that is not used anymore. It has been locked for a while with the door located outside the building. The pipe wrapping in the room is not broken. The facility now uses two on demand water heating units. They are attached to the wall in a utility room next to the male latrine. Personnel reported that this system works well and are supposed to save money. See pictures.

Deactivated Indoor Firing Range

There is a deactivated Indoor Firing Range (IFR) at the facility. Personnel reported that it was "cleaned" about five years ago by a crew from an outside contractor. The backstop and the sand were removed for disposal. The space where the sand was located was filled with concrete. The room was divided by a wall in two areas; the front is used as storage with among others things, many boxes, ladders, new shovels and a few old A/C window units. The other side was converted to a conference room with tables and chairs. It has a window A/C unit. Six wipe samples were taken from the IFR. None of the six samples was above the clearance level of 200ug/ft2. See table 1 for results.

Table 1

Sample Number	Sample Location	Results
26	Bullet backstop area, Where it was located: right	BRL
27	Bullet backstop area, Where it was located: left	BRL
28	Floor in front of where backstop was Located, concrete floor	B R L
29	Item 1 stored in IFR, top of wood box	BRL
30	Item 2 stored in IFR, top of desk	BRL
31	Wall next to entrance/exit door	25ug
34	Blank	B RL

Weapons Vault

The McCormick Armory has a weapon storage vault located in the Supply Room. Personnel stated that accountability and issuing of weapons are performed in this area, at the door of the Supply Room. Weapons are cleaned at the maintenance building. There is a parts-weapons cleaning machine that is used to clean the weapons in the maintenance area. The weapons are cleaned using rags with CLP. The used rags are placed in a container and are picked up by a contractor for disposal. The dehumidifier in the weapons vault was working the day of the survey. Personnel reported it on all the time and the draining receptacle is checked and drained often. Five wipe samples were taken from the weapons vault racks. Three of the samples were above the clearance level of 200ug/ft2. See table 2 for results. Table two also includes wipe sampling taken from the kitchen and the Drill Hall.

Table 2

Sample Number	Sample Location	Results
21	Weapons Vault Racks (A)	230ug
22	Weapons Vault Racks (B)	176ug
23	Weapons Vault Racks (C)	61ug
24	Weapons Vault Racks (D)	247ug
25	Weapons Vault Racks (E)	369
32	Kitchen, Top of counter next to sink	BRL
33	Kitchen, Top of wood shelf	BRL
35	Drill Hall, Top of Water Fountain	BRL
36	Drill Hall, Top of Table	BRL
34	Blank	BRL

A/C-Heating System

Individual A/C window/wall units are used to cool the administration offices throughout the facility. The classroom, the kitchen, the conference room and the supply room also have A/C window units. These units were working well at the time of the survey. Some of them are only two years old. It was also reported that the heating system work well to keep the armory warm during the winter months.

Material Safety Data Sheets

The MSDS book was located in the supply room the day of the survey. There were two books. Could not find our when they were updated last. There is a POL shed (small building) behind the armory. There is a still visible, but beginning to fade no smoking sign at the door. Stored inside are penetrating oil, starting fluid, one quart size paint containers, spray paint cans, gallon paint cans and methanol. There was no Hazardous Materials Inventory List in the POL shed.

Light Readings

Light measurements were taken in various locations throughout the facility. The results were compared to guidelines recommended by the Illuminating Engineering Society (IES). The results of the survey are shown in Table 3.

Table 3

Location	Light Reading (footcandles)	IES Recommendation (footcandles)
ADO ReadinessNCO Office	39-45 (Avg. 42)	50-100
ADO Training RoomOffice	36-65 (Avg. 50)	50-100
ADO Supply Room Storage	16-66 (Avg. 40)	20
Conference Room	50-75 (Avg. 62)	50-100
Classroom 1	58-79 (Avg. 72)	50-100
Classroom 2	51-82 (Avg. 68)	50-100
Classroom 3	57-98 (Avg. 71)	50-100
Commander Office	46-72 (Avg. 54)	50-100
1SG Office	54-100 (Avg. 74)	50-100
R & R Room	33-46 (Avg. 38)	50-100

Drill Hall	57-195 (Avg. 122)	30
		20

Light measurements were below IES guidelines at the Ops-Readiness NCO office (The room has only two four bulbs light fixtures and both have two bulbs out) and the R&R room (It has only one four 92" light fixture). With the window blinds up the average measurement increased to 69FC. The training room had two fixtures, out of four, with two bulbs out. Bulbs were also out in the commander office. The other areas tested were within IES guidelines. Consideration should be given to provide supplemental lighting at the locations that were below the recommended standard and to replace burned out bulbs as listed above. ANSI RP7-1991.

4.REFERENCES

- Guide to Occupational Exposure 2000, American Conference of Governmental Industrial Hygienists (ACGIH), Cincinnati, Ohio.
- American National Standards Institute (ANSI), /Illuminating Engineering Society (IES), Industrial Lighting 1991.
- National Institute for Occupational Safety and Health (NIOSH), (76-130)
 Technical Information, Lead Exposure and Design Considerations for Indoor Firing Ranges GPO, 1975.
- Title 29, Code of Federal Regulations (CFR). 1999, revision, Part 1910.
 Occupational Safety and Health Standards
- AR 40-5, Preventative Medicine, 15 October 1990.
- AR 385-10, The Army Safety Program, 23 May 1988.
- National Safety Council, Fundamentals of Industrial Hygiene, 4th edition, 1996.
- AR 385-16, National Guard Pamphlet, Safety Guidelines for Converting Indoor Firing Ranges to Other uses.
- TB MED 503, The Army Industrial Hygiene Program, February 1985.
- Department of the Army Pamphlet (DA PAM) 40-501,27 August 1991, Hearing Conservation.
- Title 29 CFR, Part 1910.1200, The Hazard Communication Standard
 Non-Responsive

RECOMMENDATIONS

- Consideration should be given to provide supplemental lighting at locations that were below the recommended standard, and to replace burned out bulbs. (See Light Readings section).
- Recommend that when using computers for extended periods of time, personnel should take occasional breaks and change position to minimize the possibility of eyes and/or hands/wrist injury.
- Continue to ensure that weapon maintenance and cleaning is done in a wellventilated area. Continue to practice good personal hygiene by washing hands after handling and cleaning weapons and ammunition. Ensure that the weapons racks are well cleaned before placing them back in the vault.
- A request should be made to the appropriate state agency to evaluate the
 possibility of repainting the small areas in the drill hall where the paint has
 peeled off.
- Recommend that the MSDS book should be updated periodically as new materials come.
- A Hazards Materials Inventory List should be made from the MSDS forms and placed in the POL shed.
- Ensure that personnel and troops have knowledge of the location of the MSDS book. And is enrolled hazardous materials safety training.

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SECTION 5. SAMPLING DATA **BEST AVAILABLE COPY** SAMPLE . HAZARD C RESULTS d. REMARKS .7. SECTION 6. PERSONNEL DATA SECTION 7.

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· PRIVACY ACT STATEMENT

Title & U.S. Code. Section 301: Executive Order 9397 authorizes the use of your Social Security Number as a identification number. The purpose of this information is to identify and monitor data relating each DA civilian employee exposed to a hazardous workplace of operation. The use of this information is to provide histories of exposure for any given worker.

Disclosure of your Social Security Number is not mandatory; however, nondisclosure may result in untimely provision of proper medical monitories.

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SECTION 5. SAMPLING DATA **BEST AVAILABLE COPY** SAMPLE . HAZARD A RESULTS d. REMARKS .7. SECTION 6. PERSONNEL DATA COMMENTS tadd blank sheet of paper if necessary; conjutar for by peurs & time · PRIVACY ACT STATEMENT Title & U.S. Code, Section 201: Executive Order 9397 authorizes the use of your Social Security Number as a identification number. The purpose of this information is to identify and monitor data regaling each DA civilian employee exposed to a hexardrus workplace or operation. The use this information is to provide histories of exposure forany sizen worker. Disclosure of your Social Security Rumber is not mendatory; however, nondisclusure may result in antimety provision of proper medicul monitoring.

Signature

Analytical Environmental Services, Inc.

Date: 9/15/2005

TOTAL LEAD IN WIPE SAMPLES

N7082

CLIENT:

Non-Responsive

Lab Order:

0509503

Project:

ect:

Date Received:

9/12/2005 11:00 AM

Delivery Order:

Matrix:

Wipe

PO No:

						A D _ D D D D D		
Laboratory ID	Client Sample ID	Results	Units	Report Limit.	DF	Date Collected	Date Analyzed	Analyst
0509503-001A	21	230	μg, Total	20	1	9/7/2005	9/14/2005	VA
0509503-002A	22	176	μg, Total	20	1	9/7/2005	9/14/2005	VA
0509503-003A	23	61	μg, Total	20	1	9/7/2005	9/14/2005	VA
0509503-004A	24	247	μg, Total	20	1	9/7/2005	9/14/2005	VA
0509503-005A	25	369	μg, Total	20	1	9/7/2005	9/14/2005	VA
0509503-006A	26	BRL	μg, Total	20	1	9/7/2005	9/14/2005	VA
0509503-007A	27	BRL	μg, Total	20	1	9/7/2005	9/14/2005	VA
0509503-008A	28	BRL	μg, Total	20	1	9/7/2005	9/14/2005	VA
0509503-009A	29	BRL	μg, Total	20	l	9/7/2005	9/14/2005	VA
0509503-010A	30	BRL	μg, Total	20	1	9/7/2005	9/14/2005	VA
0509503-011A	31	25	μg, Total	20	1	9/7/2005	9/14/2005	VA
0509503-012A	32	BRL	μg, Total	20	1	9/7/2005	9/14/2005	VA
0509503-013A	33	BRL	μg, Total	20	1	9/7/2005	9/14/2005	VA
0509503-014A	34	BRL	μg, Total	20	1	9/7/2005	9/14/2005	VA
0509503-015A	35	BRL	μg, Total	20	1	9/7/2005	9/14/2005	VA
0509503-016A	36	BRL	μg, Total	20	1	9/7/2005	9/14/2005	VA

Qualifiers:

BRL - Not Detected at the Reporting Limit

DF - Dilution Factor



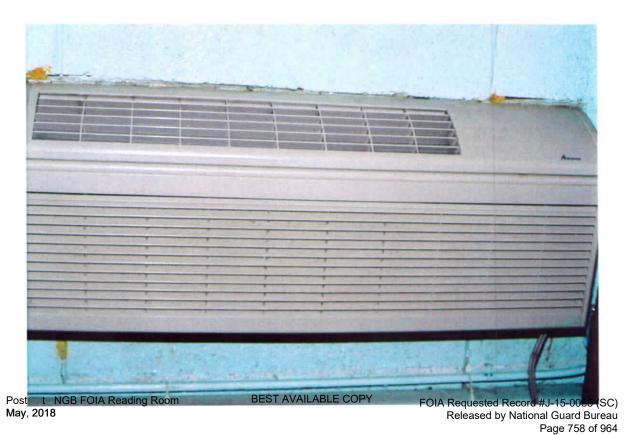
McCORMICK, SC ARMORY





DRILL HALL

A/C-HEATING WALL UNIT, OFFICES

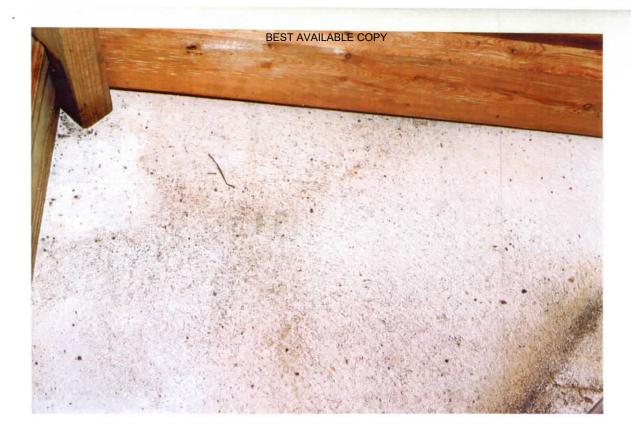




IFR, FRONT VIEW

IFR, REAR VIEW





IFR, WHERE BACKSTOP WAS

IFR, IN FROT OF WHERE **BACKSTOP WAS**



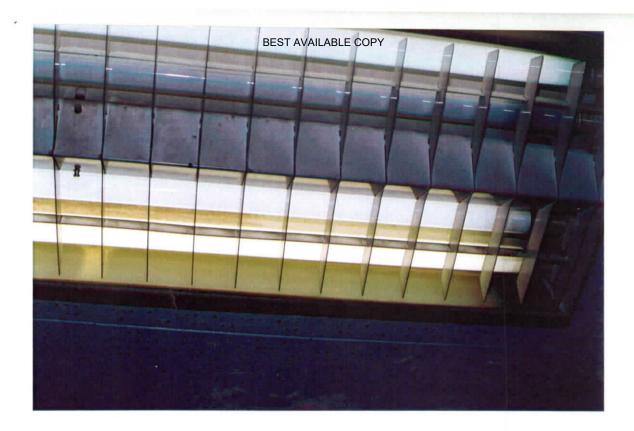
FOIA Requested Record #J-15-0085 (SC) Released by National Guard Bureau Page 760 of 964



OLD BOILER

WATER HEATERS

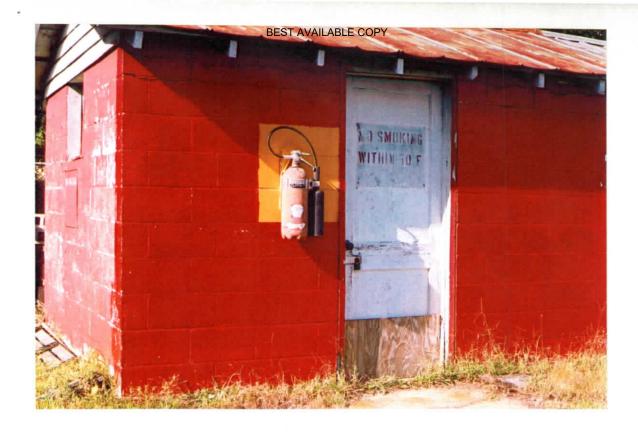




LIGHT BULBS OUT, COMMANDER OFFICE

MSDS BOOKS



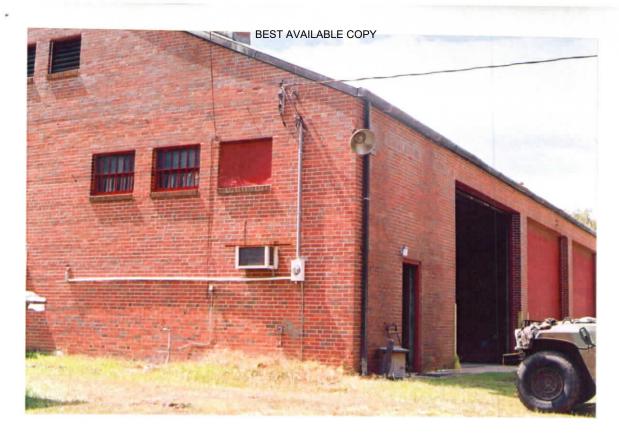


POL SHED

MOTOR POOL



FOIA Requested Record #J-15-0085 (SC) Released by National Guard Bureau Page 763 of 964



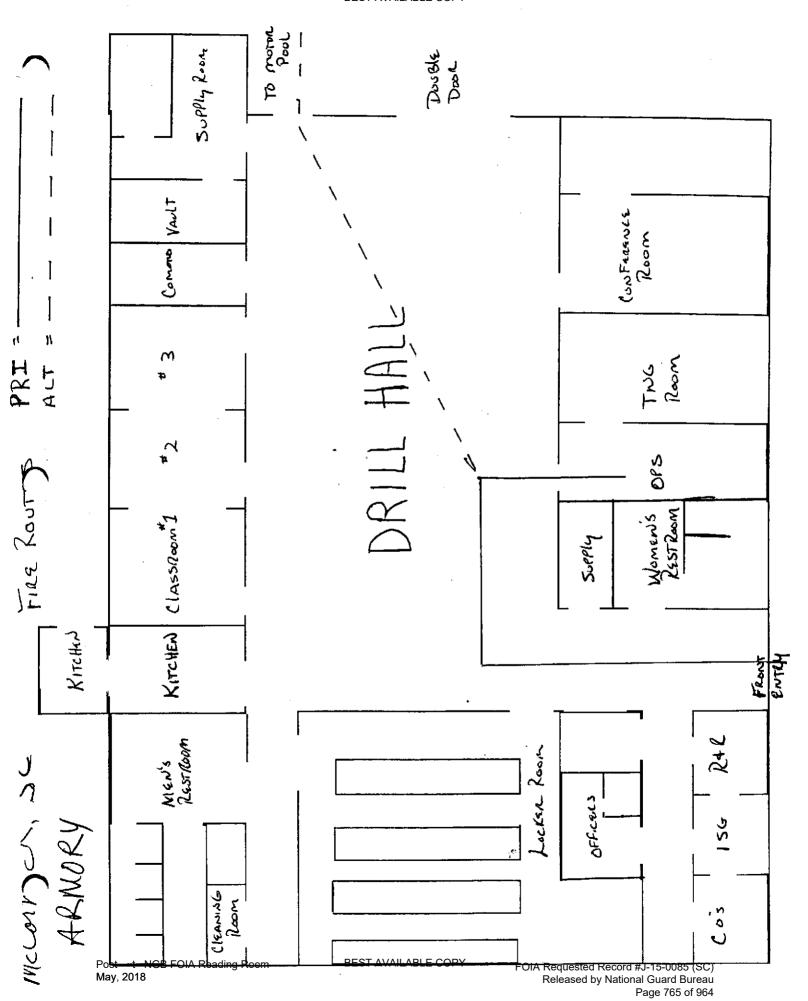
MAINTENANCE BUILDING

WEAPONS CLEANING MACHINE



May, 2018

Requested Record #3-15-0085 (SC) Released by National Guard Bureau Page 764 of 964



NATIONAL GUARD REGION SOUTH INDUSTRIAL HYGIENE OFFICE 510 PLAZA DRIVE, SUITE 1530 COLLEGE PARK, GA 30349

NGB-ARS-SEIH

28 February 2007

MEMORANDUM FOR: The South Carolina Army National Guard, ATTN: Non-Responsive Facility Supervisor, Detachment 1 Bravo Company 642nd Battalion, 453 South Carolina Road, East over, South Carolina 29044.

THRU Non-Responsive Deputy State Surgeon, South Carolina Army National Guard, 1 National Guard Road, TAG-MP-MSS, Columbia, SC 29201.

SUBJECT: Industrial Hygiene Survey of the Mc Entire Armory.

- 1. References.
- a. Report submitted 28 January 2007, Industrial Hygiene Survey, OSHEA II Consulting.
- b. OSHA Standards 29 CFR (Code of Federal Regulations), General Industry, revised 1988.
 - c. AR 40-5, Preventive Medicine, October 1990.
 - d. AR 11-34, 15 February 1990, The Army Respiratory Protection Program.
 - e. AR 385-10, 23 May 1988, Army Safety Program.
- f. Department of the Army Pamphlet (DA PAM) 40-501, 27 August 1991, Hearing Conservation.
 - g. TB MED 530, The Army Industrial Hygiene Program.
- h. Title 29 Code of Federal regulation (CFR), 1989 rev, Part 1910.94 (c) (6) Table G-10, Ventilation.
- i. Industrial Ventilation, 21st ed, 1992, American Conference of Governmental Industrial Hygienist, Cincinnati, Ohio.
- j. IES Lighting Handbook, Application Volume, 1981, Illumination Engineering Society of North America.
- 2. General.
- a. At the request of the South Carolina State Safety and Occupational Health Office and the Region South Industrial Hygiene Office a Service Contract was put together to conduct Health Hazard Information module (HHIM) Field surveys and IH surveys at South Carolina National Guard Facilities.

- b. Non-Responsive of OSHEA II Consulting conducted the survey.
- 3. Findings. All HHIM field survey forms and survey findings of the report are enclosed. (See ENCL. 1)
- 4. Recommendations. Discuss the low presence of lead (27-162 micrograms) inside of the vault on the weapons and the weapons rack with the Safety and Occupational Health Office, the Facility Management Office and the Environmental Office. Request help in eliminating possible employee lead exposures. Be prepared to educate personnel on proper housekeeping procedures of the range. Follow NG PAM 420-15, Guidelines for converting indoor firing ranges to other uses and NG REG 385-15, Policy, Responsibilities and guidelines for housekeeping, rehabilitation and/or conversion of indoor firing ranges. (RAC 1)



CF: State Safety and Occupational Health Office ATTN: TAG-AV-SS



OSHEA II IH CONSULTING

South Carolina Army National Guard McEntire ANG Armory



OSHEA II IH CONSULTING PO BOX 35669 FAYETTEVILLE, NC 28303

MEMORANDUM FOR: South Carolina Army National Guard: Non-Responsive Supervisor, Detachment 1 Bravo Company 642nd 4th Battalion, Eastover, South Carolina 29044

SUBJECT: Baseline Industrial Hygiene Health Hazard Information Module (HHIM) Survey of Detachment 1 Bravo Company 642nd 4th Battalion, 453 South Carolina Road, Eastover, South Carolina 29044

January 30, 2006

REFERENCES

- a. Title 29 Code of Federal Regulations (CFR) part 1910, Occupational Safety and Health Administration (OSHA).
 - b. Army Regulation 385-10, The Army Safety Program.
- c. Army Regulation 11-34, February 1990, The Army Respiratory Protection Program
- d. Technical Bulletin (TB MED) 503, 1 February 1985, The Army Industrial Hygiene Program
- e. Industrial Ventilation, 22nd Edition, The American Conference of Governmental Industrial Hygienist (ACGIH), Cincinnati, Ohio.
- f. National Guard Regulation 385-10, 20 December 1989, Army National Guard Safety and Occupational Health Program.
- g. IES Lighting Handbook, Application Volume 2000, Illumination and Engineering Society of North America.
- h. Department of the Army Pamphlet (DA PAM) 40-501, 27 August 1991, Hearing Conservation Program.
- i. Technical Bulletin (TB MED) 503, 1 February 1985, The Army Industrial Hygiene Program.
 - j. Army Regulation (AR) 40-5, 15 October 1990, Preventive Medicine.

Oshea II Industrial Hygiene Consulting IH Survey, SC ARNG January 2007

- 2. **General:** At the request of Non-Responsive Regional Industrial Hygienist, National Guard Bureau South at Atlanta, Georgia, a Health Hazard Information Module Baseline Survey was performed at Detachment 1 Bravo Company 642nd 4th Battalion, Eastover, South Carolina.
- 3. **Background**: The purpose of this survey was to evaluate health hazards, existing controls in the work site to perform a baseline survey in accordance with references 1a through 1j and collect bulk samples.

4. Findings:

Site Description: Detachment 1 Bravo Company 642nd 4th Battalion is located on McEntire Air National Guard (ANG) station. The construction of this facility was completed in 2004. It is approximately 7913 square feet. The facility contains five offices, a class/conference/break, supply room and a weapons vault. The facility was clean. The floors were tiled with no signs of friability. Three full time people perform administrative duties. The facility was undergoing a conversion to an ANG site.

Upon arriving the engines of 5-ton trucks, 2.5- ton trucks, flatbed trucks, HUMMWV's and blazers were running. A safety briefing was in process for all convoy drivers. Vehicles were pulling off to be convoyed to Sumter, South Carolina. The unit down sized and is now an aviation detachment. The vehicles will not return to this site. Therefore a sound level survey was not performed.

There was equipment, desk, locks, a file cabinet, helmets, cement, and sealing compound wall lockers, and a treadmill the storage area. The compound had not been open. The contents stated petroleum distillates as one of its components. SFC chambers stated that the wall lockers and much of the items stored were being moved out. This will allow the entire area for drill assembly and for PT testing.

Wipe sampling was performed in armory weapons vault. Wipe samples were taken on the weapons and weapons rack. For security weapons no photographs could be taken in the vault, however, Non-Responsive observed the entire wipe sampling process and is aware of where every sample was obtained. Weapon racks were assigned numbers and samples associated with each rack. There was not a solvent bath tank noted during the survey.

Oshea II Industrial Hygiene Consulting IH Survey, SC ARNG January 2007 The following photographs depict the layout of the facility.



office hallway.



Supervisor's office



office (above)

storage and workout area (below)





Storage

a. Seven samples were obtained from the weapons vault and sent to the laboratory for lead analysis. Four samples revealed the presence of lead.

Sample No.

Sample No.			
0701	0702	0703	
0704	0705	0706	
0707			

Sample Numbers 0701 through 0704 indicated a lead presence. SFC Chambers that the weapons were due for a second cleaning at the next drill.

Oshea II Industrial Hygiene Consulting IH Survey, SC ARNG January 2007

- b. **Hearing Conservation Program:** All employees are enrolled in the state Hearing Conservation Program and receive annual audiograms.
- c. HAZCOM: It was stated that training had been performed.
- d. **Illumination**: Illumination levels were recorded in all administrative areas. See chart below for specific location of measurements.

Location	Illumination level (FTC)	IES Standard (FTC)
Non-Responsive office	72.882.3	50100
Class Room	58.060.2	50100
Hallways	38.850.3	50100
Supply	20.921.0	1020
Office 1	55.673.4	50100
Office 2	59.479.2	50100
Office 4	78.980.1	50100
Office 5	53.757.9	50100

The majority of readings are at the IES lighting standard for foot candles for each area.



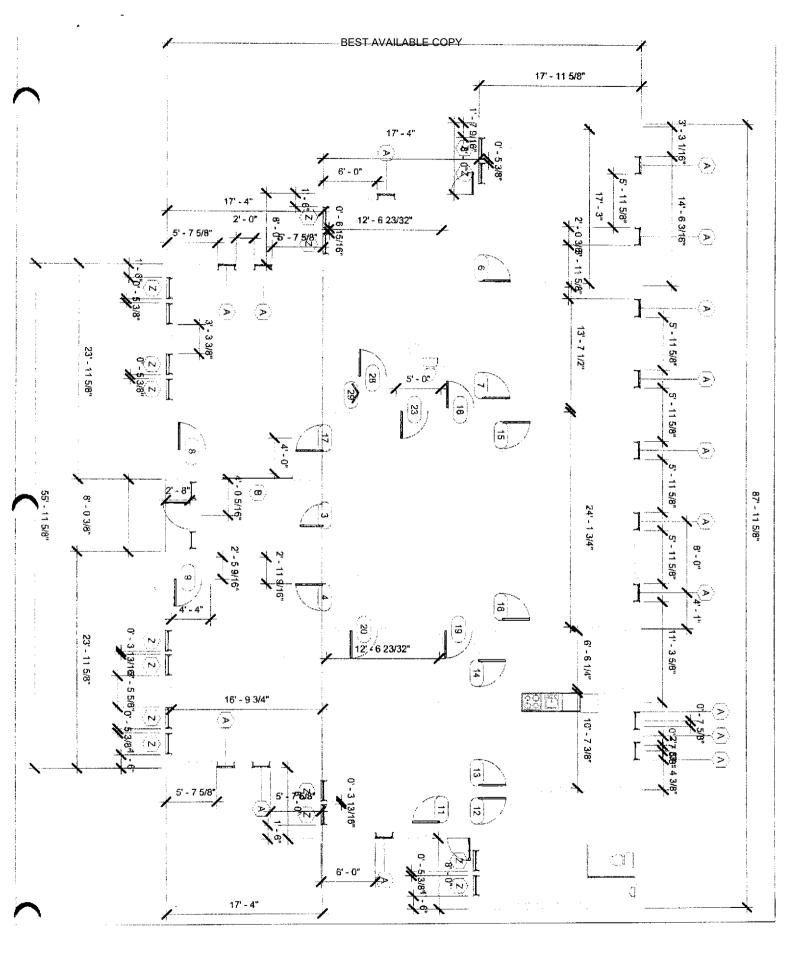


METHODOLOGY/INSTRUMENTATION:

The following survey instrumentation was utilized to obtain illumination measurements. All equipment was used according to manufacturer/manual recommendations. All equipment was calibrated prior to and after use.

Nomenclature	Serial No.
Extech Light Meter	L595339

Facility layout



Hazardous Material inventory

Floor wax stripper Floor cleaner Roach, ant & wasp cleaner Hand soap Glass cleaner

Full time Personnel



		MAC
п	ПI	MS

INDUSTRIAL HYGIENE SURVEY FORM

ARLOC_45000	INSTALLATION_A	ARNG	BLDG	_ ROC	DM
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118 OR> MUFF/PLO	G/ VES	T/SUIT	/ OTHE	R	
W/ TIME LIMIT	SAFETY	BELT/ HARNESS	_/ OTHE	₹	/
SPECIAL PURPOSE	CLO /	OTHÉR_BDU_	xx		
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POFOOTHAZ	POstress	3	0	Mental / physi	
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POLIFTING					1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1
POSHARPOBJE					500 A.VVAV
POELSHOCK					
DESCRIBED ODERATION					

Administrative duties are performed six to eight hours a day and consists of answering phones, using computers, generating paper work and running errands.

PERSONNEL LIST ATTACHED

NATIONAL GUARD REGION SOUTH INDUSTRIAL HYGIENE OFFICE 510 PLAZA DRIVE, SUITE 1530 COLLEGE PARK, GA 30349

NGB-AVN-SI

13 June 2005

MEMORANDUM FOR the South Carolina Army National Guard, ATTN: Non-Responsive Armory Supervisor, HHC/1-263rd Armor, 1018 Gilchrist Road, Mullins, SC 29574-9317.

SUBJECT: Industrial Hygiene Survey of the Mullins National Guard Armory, Mullins, South Carolina.

- 1. References.
- a. Report submitted 19 May 2005, Industrial Hygiene Survey, Environmental Management Solutions, Aisha Boyd.
- b. OSHA Standards 29 CFR (Code of Federal Regulations), General Industry, revised 1988.
 - c. AR 40-5, Preventive Medicine, October 1990.
 - d. AR 11-34, 15 February 1990, the Army Respiratory Protection Program.
 - e. AR 385-10, 23 May 1988, Army Safety Program.
- f. Department of the Army Pamphlet (DA PAM) 40-501, 27 August 1991, Hearing Conservation.
 - g. TB MED 530, the Army Industrial Hygiene Program.
- h. Title 29 Code of Federal regulation (CFR), 1989 rev, Part 1910.94 (c) (6) Table G-10, Ventilation.
- Industrial Ventilation, 21st ed, 1992, American Conference of Governmental Industrial Hygienist, Cincinnati, Ohio.
- j. IES Lighting Handbook, Application Volume, 1981, Illumination Engineering Society of North America.
- General.
- a. At the request of the South Carolina State Safety and Occupational Health Office and the Region South Industrial Hygiene Office a Service Contract was put together to conduct Health Hazard Information module (HHIM) Field surveys and IH surveys at the South Carolina National Guard Armories.

- b. Non-Responsive conducted the survey.
- 3. Findings. All HHIM field survey forms and survey findings of the report are enclosed. (See ENCL. 1)
- Recommendations.
- a. Follow all recommendations made in reference 1. a., requesting industrial hygiene (IH) services where needed to complete the recommendations except for installing Carbon Monoxide Monitors in the motor pool area.
- b. Discuss the high lead samples taken inside of the inactive indoor firing range and the motor pool with the Safety and Occupational Health Office, the Facility Management Office and the Environmental Office. Request help in eliminating possible employee lead exposures. Be prepared to educate personnel on proper housekeeping procedures of the range. Follow NG PAM 385-16, Guidelines for converting indoor firing ranges to other uses and NG PAM 385-15, Policy, Responsibilities and guidelines for housekeeping, rehabilitation and/or conversion of indoor firing ranges.
 - c. Use the report to help in correcting all deficiencies noted by the contractor.
- d. Consider additional Industrial Hygiene services to monitor operations that were not looked at or surveyed during the contract visit, especially if this will help eliminate health hazards and reduce medical surveillance cost.
- e. To execute your responsibilities in correcting all deficiencies and meeting all standards coordinate with the FMO, the Environmental Office the Occupational Health Nurse and the Occupational Safety and Health Office for technical guidance.
- f. Ensure that the FMO and the Environmental Offices receive a copy of this report.



CF: Safety and Occupational Health Office, ATTN: Non-Responsive National Guard Road, Columbia, SC 29201-4766

BEST AVAILABLE COPY

ENVIRONMENTAL MANAGEMENT SOLUTIONS INDUSTRIAL HYGIENE CONSULTING

SOUTH CAROLINA ARMY NATIONAL GUARD

MULLINS ARMORY
MULLINS, SOUTH CAROLINA

247 MARY LANE, DALLAS, GEORGIA 30157 PHONE: 404.425.3103 • FAX: 770.234.6297

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Mullins Armory Survey Date: 3 May 2005

EXECUTIVE SUMMARY	
SUBJECT	3
BACKGROUND	
INTRODUCTION	3
SITE DESCRIPTION	
SCOPE OF WORK	
METHODOLOGY	
FINDINGS AND DISCUSSION	5
LEAD WIPE SAMPLES	
ASBESTOS SUSPECT BUILDING MATERIAL	6
Noise Survey	6
ILLUMINATION SURVEY	6
BUILDING CONDITION	8
HAZARD COMMUNICATION	
RADIATION PROTECTION PROGRAM	8
ERGONOMICS	0
PERSONAL PROTECTIVE EQUIPMENT	9
RECOMMENDATIONS	10
TECHNICAL ASSISTANCE	

Environmental Management Solutions

EXECUTIVE SUMMARY

An initial baseline industrial hygiene survey was conducted at the Mullins Armory on 3 May 2005 as part of the South Carolina Army National Guard Occupational Health Program to identify potential health hazards in the workplace. The survey consisted of collecting lead wipe samples and bulk asbestos samples as needed, conducting a noise and illumination survey and an evaluation of the condition of the building as it related to indoor air quality. A review of the Hazard communication program, ergonomics, and personal protective equipment was also performed.

The following table summarizes the survey findings and recommendations for each topic surveyed.

TOPIC	SUMMARY OF FINDINGS	RECOMMENDATIONS
Lead Wipe Samples	0 to 1600 micrograms. Lead results in the drill hall, kitchen, and maintenance areas show higher than recommended levels of lead contamination.	Clean surfaces in the drill hall, kitchen, and maintenance areas, decontaminate all contaminated items, and follow good hygiene and housekeeping practices. Sampling of the indoor firing range should be performed as soon as possible due to significantly high lead levels in front of the door. Monitoring of the indoor firing range area should be conducted annually and in accordance with Army National Guard All States Log Number 1901-0075, Policies and Responsibilities for Inspection, Evaluation, and Operation of ARNG Indoor Firing Ranges (IFR) and Guidelines for IFR Rebabilitation, Conversion, and Cleaning
Asbestos Bulk Samples	No findings	No action
Noise Survey	Under 85 dBA	A noise survey should be performed on equipment used and maintained in the AFIST training area.
Illumination Survey	1.3 to 80.6 foot-candles	Upgrade lighting to appropriate levels.
Building Condition	Building is in fair condition. Extensive water could be seen in ceiling and floor tiles.	Develop a housekeeping schedule to identify, repair, and prevent any leaks or standing water. Immediately address any items that have gotten wet by cleaning or discarding.
Hazard Communication	Material Safety Data Sheets were not available. Supply sergeant was not present to provide information	Material Safety Data Sheets should be updated for cleaning supplies used by facility and easily available

	or access to supply areas.	in case of emergency.				
Ergonomics	Poor workstations design in some offices	Complete ergonomics survey on all personnel and offer ergonomic training or awareness to employees who spend the majority of their time working on a computer terminal				
Personal Protective Equipment	PPE is needed for personnel during training periods. No PPE was observed in the training area.	Ensure that appropriate PPE is provided by unit commander during weekends.				

Environmental Management Solutions Report Date: 18 May 2005

INTRODUCTION

At the request of Non-Responsive of the National Guard Bureau Region South Industrial Hygiene Office, an initial baseline industrial hygiene survey was performed at the Mullins Armory in Mullins, South Carolina. Environmental Management Solutions conducted the survey on 3 May 2005. Non-Responsive Industrial Hygiene technician NGB, assisted with the survey. The purpose of the survey was to perform an initial baseline industrial hygiene survey to evaluate potential health hazards present at the armory.

SITE DESCRIPTION

The facility houses HHC/1-263 Armor. There are twelve full time personnel. The single story building contains several administrative offices, a classroom, a drill hall, and a kitchen. An indoor firing range is present but was unavailable for entry. The range was closed several years ago. Refer to Building layout in Appendix C. The supply officer was not present at the time of the survey and access to the supply areas, vault, and indoor firing range was prohibited. Lead wipe samples, lighting samples, and a visual inspection of these areas were not possible. The armory is rented out to the city for private functions approximately one to two times per month.

SCOPE OF WORK

The work included collecting wipe samples for lead, bulk samples for suspect asbestos containing building material, noise readings, illumination levels, and an evaluation of the ventilation system as it pertains to indoor air quality. A list of occupational health programs and procedures were verbally covered with the armory personnel where applicable.

Environmental Management Solutions Report Date: 18 May 2005

METHODOLOGY

Lead wipe samples were collected from surfaces that showed signs of lead contamination in armories that have a renovated, inactive, or closed indoor firing range (IFR), kitchen or mess hall storage areas, indoor drill halls, and storage rooms with weapons vaults. The samples were collected in accordance to instructions published by Region South National Guard Bureau, which required the use of unscented baby wipes to wipe one square foot of surface. Samples were then placed in a sealed plastic bag and sent to an American Industrial Hygiene Associations (AIHA) accredited laboratory for analysis. Asbestos bulk samples and lead paint chips were collected from suspect friable and damaged building material when indicated. Each bulk sample was placed in a sealed bag and sent to an AIHA laboratory for analysis. All instruments used for assessment were factory calibrated and calibrated prior to the survey as applicable. Illumination readings were taken on work surfaces and approximately four feet from the floor.

Environmental Management Solutions Report Date: 18 May 2005

FINDINGS AND DISCUSSION

LEAD WIPE SAMPLES

Seven wipe samples were collected from areas of the kitchen, supply and drill hall areas as listed in the table below.

SAMPLE NUMBER	SAMPLE LOCATION	MICROGRAMS OF LEAD (μg) PER SQUARE FOOT
ML-01	Drill Hall, Table near recruiting sign	109
ML-02	Drill Hall, near firing range door	1600
ML-03	Kitchen Hall	130
ML-04	Kitchen floor under sink	50
ML-05	AFIST Training Office	40
ML-06	AFIST Floor Near Front	34
ML-07	AFIST Top of Storage Pod	BRL

Items listed in bold are above regulated limit.

The Army National Guard All States Log Number P01-0075, Policies and Responsibilities for Inspection, Evaluation, and Operation of ARNG Indoor Firing Ranges (IFR) and Guidelines for IFR Rehabilitation, Conversion, and Cleaning requires a limit of 200 micrograms per square foot for surface contamination in and around indoor firing ranges closed or converted for other uses. Lead results in the area in front of the firing range were extremely high.

Environmental Management Solutions Report Date: 18 May 2005

The Environmental Protection Agency standards (40 CFR 745) indicate lead in dust levels above 40 micrograms per square foot on bare and carpeted floors is considered dangerous for common areas. Lead results in the kitchen, drill hall, and training area were above regulated standards.

ASBESTOS SUSPECT BUILDING MATERIAL

Sampling for asbestos was limited to damaged material or material that could pose an exposure risk. No friable suspect material was found.

NOISE SURVEY

Area noise levels are well within the Army National Guard limit of 85 dBA and the Occupational Safety and Health Administration (OSHA) regulated limit of 90 dBA over an eight-hour period. A noise survey should be performed on equipment used and maintained in the AFIST training area.

ILLUMINATION SURVEY

Lighting levels throughout the armory ranged between 1.3 foot-candles to 80.6 foot-candles. Specific readings are listed in the table below.

AREA	AVERAGE	RECOMMENDED	MEETS
<u>. </u>	FOOT-CANDLES	FOOTCANDLES	STANDARD?
HHC/CDR (103)	18.6	50-75	N
ORDERLY ROOM (102)	41.8	50-75	N
1SG/NCO (101)	47.9	50-75	N
KITCHEN (104)	23.9	50-75	N
FOOD STORAGE (105)	17.2	20-30	N
BOILER (106)		10-15	_
CLASSROOM (115)	47.0	50-75	N

Environmental Management Solutions

Report Date: 18 May 2005

LIBRARY (116)	43.6	50-75	N
(===)		50-75	
LOCKER ROOM (121)	8.2	10-15	N
MEN'S RESTROOM (123)	7.9	10-15	N
WOMEN'S RESTROOM (126)	10.5	10-15	Y
FACILITY MAINTENANCE (107)	51.4	10-15	N
PAC (145)	34.9	50-75	N
PAC (144)	74.9	50-75	N
BN CDR (142)	13.8	50-75	N
CONFERENCE (138)	44.8	50-75	N
SS/OPS (137)	80.6	50-75	Y
NBC (136)	67.9	50-75	N
S2 (135)	63.7	50-75	Y
S4 (134)	40.8	50-75	N
COPY (132)	10.5	50-75	N
BOILER (130)	1.3	10-15	N
CSM (128)	67.3	50-75	Y

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S1 (127)	41.7	50-75	N	
BLDG 4 – OIL HOUSE	18.8	10-15	Y	
BLDG 5 – TANKS TRAINING	20.7	50-75	N	

Readings in bold-faced type do not meet the American National Standard Institute/Industrial Engineering Society (ANSI/IES) minimum illumination requirements. See recommendations for appropriate action.

BUILDING CONDITION

The building was constructed in the 1980s. The building is in fair condition and the housekeeping is fair. Extensive water damage was seen in the classroom wing. Much of the water damage was due to a broken valve pipe. This area had been closed up to the rest of the armory as office personnel vacated the location some months ago. The broken valve pipe was discovered after several days and soaked furniture, floor tiles, and ceiling tiles were the result. The water was cleaned up, but the dampness remained and visible mold was present on the floor tiles. Several damaged ceiling tiles could be seen in the hallway leading to this area and is a result of the roof leaking. This area was completely closed off and the HVAC system was shut down, so that there was no ventilation in the area. Cobwebs, spiders, and dust were seen in several office areas. No leaks or standing water was observed. Personnel did not have specific complaints about the indoor air quality. All HVAC rooms and boiler rooms were clean and in good order. Personnel indicate that the air conditioning system needs fixing periodically but no other maintenance concerns were addressed.

The AFIST training area is used for training purposes during drill weekends. The area is being used, but there is still construction on the building itself. No ventilation system was present, and personal protective equipment was not observed. No eyewashes or showers were present. A flammable storage area is also present and was clean and in good order. No lighting is present in the room however, making it hard to see when inside. Vents exist in the building to allow in fresh air.

HAZARD COMMUNICATION

The supply sergeant in charge of Material Safety Data Sheets was not available for the survey. Hazardous Materials information could not be reviewed. It could not be located by other personnel.

RADIATION PROTECTION PROGRAM

Supply sergeant was unavailable for questioning regarding radioactive inventory.

Environmental Management Solutions Report Date: 18 May 2005

ERGONOMICS

The full time employees in the supply or office areas did not express any ergonomic concerns. However, many workstations were not set up to provide neutral postures and appropriate ergonomically correct positions. Consideration should be given to providing all full time employees that spend the majority of their working time at a computer terminal ergonomic training or awareness. Such awareness should emphasize the importance of proper posture and set-up of the workstation to fit the user.

PERSONAL PROTECTIVE EQUIPMENT

Normal duties of full time employees at the armory do not require the use of personal protective equipment (PPE). However, personnel working in maintenance training areas should be provided the appropriate PPE.

Environmental Management Solutions Report Date: 18 May 2005

RECOMMENDATIONS

- 1) All items that are contaminated with lead should be thoroughly decontaminated with a detergent and water solution. Care should be taken to wipe down tables where weapons are issued and cleaned. Kitchen areas should be thoroughly cleaned on a regular basis and especially before serving personnel.
- 2) Personnel should be prohibited from eating, drinking, smoking, chewing tobacco or gum, or applying cosmetics in supply areas and should be instructed to clean hands with soap and water before doing any of these. Remove all refrigerators, cups, and other eating utensils from supply areas.
- 3) The indoor firing range and supply areas should be sampled for lead immediately so that they can be scheduled for cleaning if possible. Annual monitoring of the converted indoor firing range should be performed to ensure that lead levels remain below 200 micrograms per square foot. Consult the Army National Guard All States Log Number P01-0075, Policies and Responsibilities for inspection, Evaluation, and Operation of ARNG Indoor Firing Ranges (IFR) and Guidelines for IFR Rehabilitation, Conversion, and Cleaning on guidelines for monitoring, cleaning and converting Indoor Firing Range. Any items in this stored in the indoor firing range should be decontaminated before use.
- 4) Upgrade lighting measurements in the areas required. Lighting can be upgraded in the following ways:
 - Replace blown or broken lighting
 - Paint walls and floors white or similar light color
 - Clean existing light fixtures
 - Rearrange furniture to make better used of available light
 - Provide supplemental or task lighting

Install lighting in flammable storage area.

5) Develop a housekeeping schedule to immediately identify, repair, and prevent any leaks or standing water. Proper and immediate repairs and maintenance of the building infrastructure and interior surfaces can prevent water damage and moisture buildup which may lead to further indoor air quality issues.

Environmental Management Solutions Report Date: 18 May 2005

- 6) Fix all leaks and water-damaged areas that allow water to get into the ventilation system or building surfaces, and materials. Prevent buildup of moisture in occupied spaces and in HVAC components. Remove stagnant water and slime from mechanical equipment.
- 7) Find and discard microbial-damaged furnishings and equipment. Ceiling tiles should be discarded and replaced. Floor should be cleaned and sealed. Clean and disinfect all contaminated surfaces such as the supply diffusers with a 10 percent CloroxTM solution during off hours.
- When water damage occurs:
 - a. Inventory all water damaged areas, building materials, and furnishings.
 - b. Remove and dispose of all wet ceiling tiles within 24-48 hours of water damage. Spray the back of the water damaged tile with a dilute bleach solution. Place tile in garbage bag. If the ceiling tile has become wet due to a small stream leak and the shape of the tile has not been altered, the ceiling tile can be air-dried and reused.
 - c. Upholstered furniture that has become wet due to floods; roof leaks sewage backup and ground water infiltration should be disposed.
 - d. Hardwood furniture or laminate furniture whole laminate is intact should be air dried and cleaned with a solution of 1/4 to 1/2 cup bleach per gallon of water.
 - e. Laminate furniture whole laminate has become delaminated should be disposed of as pressed wood under the laminate absorbs water readily and is hard to dry.
 - f. Furniture made of particleboard or pressed wafer board should be discarded after water damage.
- 9) If carpet is wet for less than 48 hours:
 - Remove all materials such as furniture, file cabinets, paperwork form the carpet.
 - Use a wet vacuum to remove as much water from the carpet as possible
 - Shampoo the carpet with a dilute surfactant.
 - d. Soak with a ½ to ½ cup bleach/water solution. The maximum concentration should not exceed 1 part bleach to 10 parts water.
 - e. Rinse and extract the carpet with clean water to remove detergent/bleach residues.

Environmental Management Solutions Report Date: 18 May 2005

- f. Commercial steam cleaning can be used in place of bleach as long as the water used to steam the carpet is heated above the boiling point.
- g. Dry the carpet within 12-24 hours of treatment. After work is completed, increase the room temperature, and use commercial dehumidifiers, floor and or exhaust fans to aid in drying the carpet.
- h. If carpet is wet for more than 45 hours during the wintertime, the above protocol can be used to manage the carpet and salvage it, provided it became wet with relatively clean water.
- i. If carpet is wet for more than 48 hours during the summertime, disposal of water-damaged carpets especially in humid environments is often the best option.
- 10) Bricks and concrete material, specifically at building entrances should be cleaned with a bleach and water solution. DO NOT follow with a clear water rinse in order to allow the bleach to remain and thoroughly decontaminate the surface.
- 11) Obtain all specifications and drawings of the HVAC system and have the system properly balanced.
- 12) Improve air filtration by using efficient filters to remove spores, pollen, dirt, and other particles, which may be distributed through the HVAC system. High efficiency style filters should be included in the HVAC filter section. It is essential that all supply air pass through a pre-filter and a high efficiency final filter. Use filters with at least a 50-70 percent collection efficiency rating. Ensure that filters are the appropriate size for the HVAC system. Develop a maintenance schedule for ensuring that filters are properly changed, any leaks or standing water are identified, repaired, and prevented. Provide pigeon screens on intakes and exhausts.
- 13) Provide preventative maintenance of HVAC systems. Institute a comprehensive and practical preventative maintenance plan to check, clean, and/or repair, HVAC system components, lined ductwork, and ceiling plenums at least quarterly.
- 14) Maintain relative humidity between 30 to 60%
- 15) Consult State Environmental Office for approval of an appropriate pesticide to prevent rodent and insect infiltration.
- 16) Material Safety Data Sheets (MSDS) are required to be kept at the primary workplace facility and to be easily accessible in case of emergency. Material Safety Data Sheets for cleaning materials should be kept by the facility. Personnel responsible for these items should receive annual training in the requirements of the Hazardous Communication Program and the appropriate keeping and storage of all MSDS.

Environmental Management Solutions Report Date: 18 May 2005

- 17) Complete noise dosimetry and a noise survey on all maintenance equipment and mark equipment and areas as noise hazardous, where appropriate in the AFIST training area.
- 18) Install a carbon monoxide monitor in the motor pool area to warn personnel about dangerous levels of carbon monoxide from vehicles idling in or around the area. The maintenance bay door should be left open while vehicles or running or left idling in order to provide adequate ventilation during these times.
- 19) An eyewash and shower should be acquired for the motor pool area, due to the types of chemicals commonly used in this area. An eye lavage should be made accessible within 10 seconds traveling distance of a possible eye hazard. Use portable eyewashes only if a plumbed eyewash cannot be installed.
- 20) Personal protective equipment should be provided, used, and maintained in a sanitary and reliable condition. Ensure that unit commanders provide appropriate personal protective equipment during maintenance procedures. If damaged or defective, PPE should be replaced immediately.
- 21) An ergonomics survey should be completed for all supply and administrative personnel as a preventative measure to document and address any and all ergonomic concerns or problems. Provide ergonomics training and awareness to all employees who spend the majority of their time working at a computer terminal.

TECHNICAL ASSISTANCE

For technical assistance regarding information found in this report or the performed survey please contact Non-Responsive ional Industrial Hygienist at the National Guard Bureau Region South Industrial Hygiene Office at Non-Responsive



Environmental Management Solutions Report Date: 18 May 2005

APPENDICES

APPENDIX A	

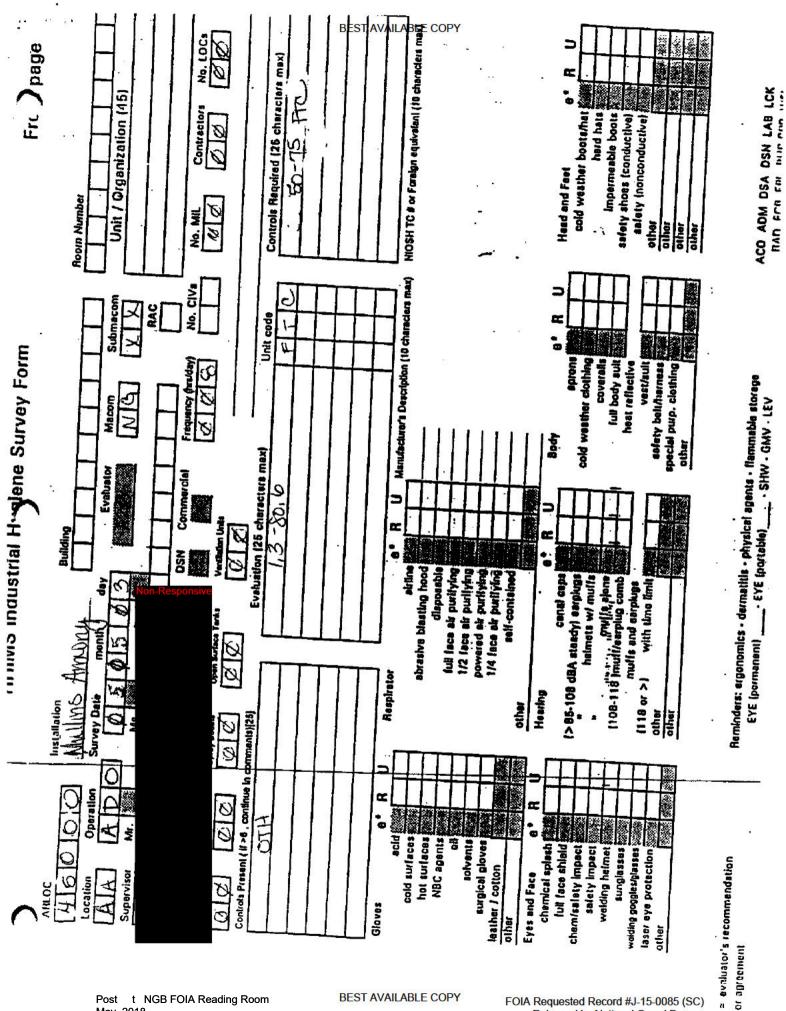
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- American conference of Governmental Industrial Hygieist (ACGIH), Industrial Ventilation, A Manual of Recommended Practice, 23rd Edition, 1998. American National Standards Institute (ANSI), /Illuminating Engineering Society (IES), Industrial Lighting, 1991.
- Army Regulation (AR) 11-34, The Army Respiratory Protection Program, 1990.
- Army Regulation (AR) 40-5, Preventative Medicine, 15 October 1990.
- Army Regulation (AR) 385-10, The Army Safety Program, 29 Feb 2000.
- NGR 385-10, Army National Guard Safety and Occupational Health Program, 7 October 1988.
- TB MED 503, The Army Industrial Hygiene Program, February 1985.
- □ Title 29, Code of Federal Regulations (CFR), 1999, revision, Part 1910, Occupational Safety and Health Standards.
- ☐ TG 022, US Army Environmental Hygiene Agency (YSAEHA), Industrial Hygiene Evaluation Guide, October 1975.
- □ TG 141, US Army for Health Promotion and Preventative Medicine (USACHPPM) Industrial Hygiene Air Sampling Guide, November 1997.

APPENDIX B	

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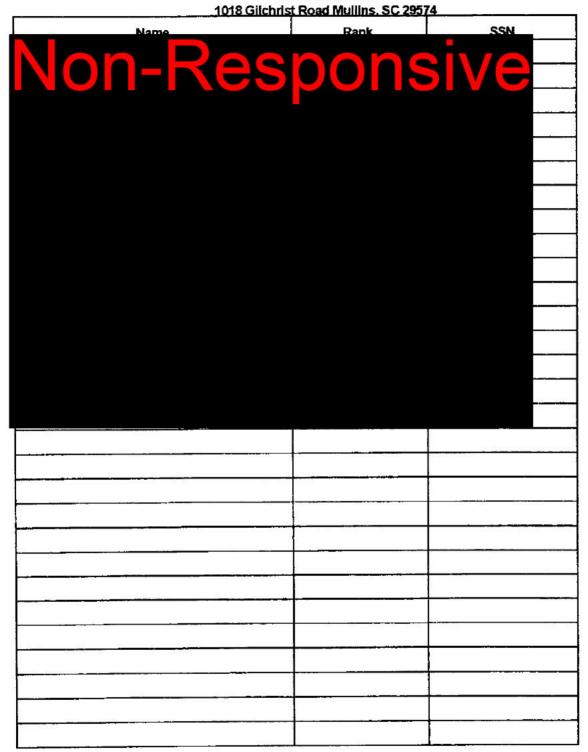
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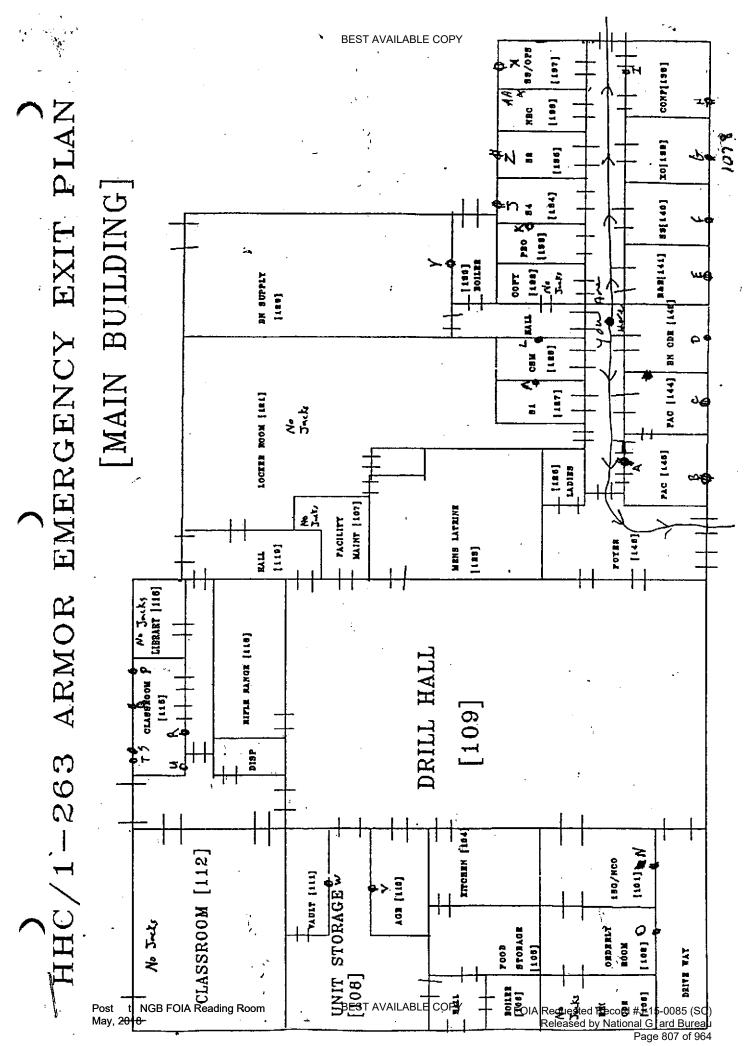
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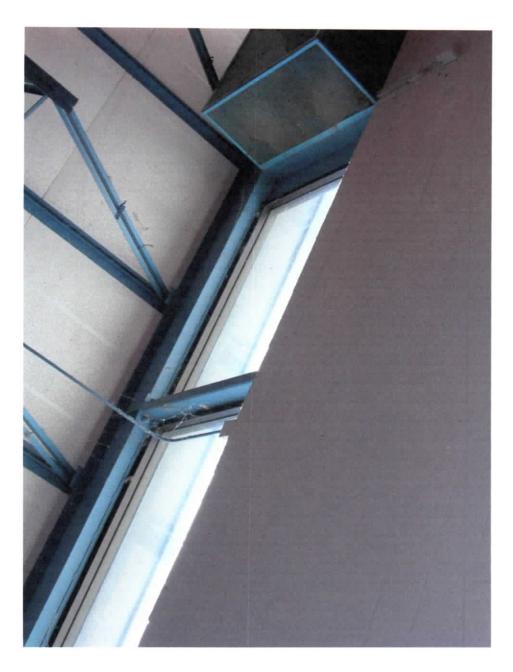


AS OF 3 MAY 2005



фFFICE/SECTION:__H&J]___

APPENDIX C



Mullins Armory

Administrative area



Water damage--Drill Hall ceiling











Conference Room



Boiler room



Administrative area



Water damaged ceiling tile



Water damaged ceiling tiles





Water damage ceiling tiles



Floor tile damage



Water damage on wall



Water damage--Classroom area. Valve broken causing extensive

water damage



Broken valve



Water damged ceiling tiles hallway





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APPENDIX D

Analytical Environmental Services, Inc.

Date: 5/16/2005

TOTAL LEAD IN WIPE SAMPLES

N7082

CLIENT:

Delivery Order:

National Guard Bureau Region-South IH

Project:

Scarng Mullins Armory

Lab Order:

0505377

Date Received:

5/5/2005 8:00:00

Matrix:

Wipe

PO No:

Laboratory	Client Sample	Results	Units	Report	DF	Date	Date	Analyst
ID	ID			Limit.		Collected	Analyzed	-
0505377-001A	ML-01	109	μg, Total	20	1	5/3/2005	5/10/2005	EM
0505377-002A	ML-02	1600	μg, Total	20	1	5/3/2005	5/10/2005	ЕМ
0505377-003A	ML-03	130	μg, Total	20	1	5/3/2005	5/10/2005	EM
0505377-004A	ML-04	50	μg, Total	2 0	1	5/3/2005	5/10/2005	ЕМ
0505377-005A	M105	40	μg, Total	20	1	5/3/2005	5/10/2005	EM
0505377-006A	ML-06	34	μg, Total	20	1	5/3/2005	5/10/2005	ЕМ
0505377-007A	ML-07	BRL	μ g , Total	20	1	5/3/2005	5/10/2005	EM

Qualifiers:

BRL - Not Detected at the Reporting Limit

DF - Dilution Factor

NATIONAL GUARD REGION SOUTH INDUSTRIAL HYGIENE OFFICE 510 PLAZA DRIVE, SUITE 1530 COLLEGE PARK, GA 30349

NGB-AVN-SI

5 August 2003

MEMORANDUM FOR The South Carolina Army National Guard, ATTN: Non-Responsive Armory Supervisor, C Company 111th Signal BN, 501 19th Avenue South, Myrtle Beach, SC 29577.

SUBJECT: Industrial Hygiene Survey of the Myrtle Beach National Guard Armory, Myrtle Beach, South Carolina.

- 1. References.
 - a. Report submitted 4 August 2003, Industrial Hygiene Survey, Non-Responsive
- b. OSHA Standards 29 CFR (Code of Federal Regulations), General Industry, revised 1988.
 - c. AR 40-5, Preventive Medicine, October 1990.
 - d. AR 11-34, 15 February 1990, The Army Respiratory Protection Program.
 - e. AR 385-10, 23 May 1988, Army Safety Program.
- f. Department of the Army Pamphlet (DA PAM) 40-501, 27 August 1991, Hearing Conservation.
 - g. TB MED 530, The Army Industrial Hygiene Program.
- h. Title 29 Code of Federal regulation (CFR), 1989 rev, Part 1910.94 (c) (6) Table G-10, Ventilation.
- i. Industrial Ventilation, 21st ed, 1992, American Conference of Governmental Industrial Hygienist, Cincinnati, Ohio.
- j. IES Lighting Handbook, Application Volume, 1981, Illumination Engineering Society of North America.
- 2. General.
- a. At the request of the South Carolina State Safety and Occupational Health Office and the Region South Industrial Hygiene Office a Service Contract was put together to conduct Health Hazard Information module (HHIM) Field surveys and IH surveys at the South Carolina National Guard Armories.
 - b. Non-Responsive conducted the survey.

- 3. Findings. All HHIM field survey forms and survey findings of the report are enclosed. (See ENCL. 1)
- Recommendations.
- a. Follow all recommendations made in reference 1. a., requesting industrial hygiene (IH) services where needed to complete the recommendations.
- b. Discuss the high lead samples taken inside of the inactive indoor firing range with the Safety and Occupational Health Office, the Facility Management Office and the Environmental Office. Request help in eliminating possible employee lead exposures. Be prepared to educate personnel on proper housekeeping procedures of the range. Follow NG PAM 385-16, Guidelines for converting indoor firing ranges to other uses and NG PAM 385-15, Policy, Responsibilities and guidelines for housekeeping, rehabilitation and/or conversion of indoor firing ranges.
 - c. Use the report to help in correcting all deficiencies noted by the contractor.
- d. Consider additional Industrial Hygiene services to monitor operations that were not looked at or surveyed during the contract visit, especially if this will help eliminate health hazards and reduce medical surveillance cost.
- e. To execute your responsibilities in correcting all deficiencies and meeting all standards coordinate with the FMO, Occupational Health Nurse and the Occupational Safety and Health Office for technical guidance.



CF: Safety and Occupational Health Office, ATTN: Guard Road, Columbia, SC 29201-4766

Non-Responsive 1 National



June 16, 2003

Non-Responsive

501 19th Avenue South Myrtle Beach, SC 29577

RE: Baseline Industrial Hygiene Survey

FINAL REPORT

FOR

BASELINE INDUSTRIAL HYGIENE SURVEY

SOUTH CAROLINA ARMY NATIONAL GUARD

MYRTLE BEACH ARMORY

MYRTLE BEACH, SC

DATE:

MAY 20,2003

PREPARED BY



Post t NGB FOIA Reading Room

CONTENTS

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2.0 INSTRUMENTATION

3.0 FINDINGS

4.0 REFERENCES

Attachment 1 HHIM Forms

Attachment 2 Laboratory Reports: Deactivated Indoor Firing Range

Attachment 3 Laboratory Reports: Supply air grills offices

Attachment 4 Laboratory Reports: Bulk Sample Hot Water Tank

Attachment 5 Photographs of the Facility

Attachment 6 Schematic Drawing of Facility

1.0 INTRODUCTION

At the request of the National Guard Bureau South Region Industrial Hygiene Office, Non-Responsive performed a Baseline Industrial Hygiene Survey at the SC ARNG Myrtle Beach Armory. The purpose of the survey was to perform a baseline survey to evaluate health hazards, controls present in the work site, collect lead swipe samples from renovated/inactive or closed Indoor Firing Ranges and perform ventilation, illumination and noise survey and to make recommendations regarding health hazards associated with the work at the Myrtle Beach Armory.

The building was finished around 1957 or 1958. The facility houses the C Company 111th Signal BN. The armory is used by the troops of C Company 111th Signal BN for their monthly weekend drills.

The C Company 111th Signal BN with 93 troops has 2 full time AGR personnel at the time of the survey. The AGR employees are assigned to perform administrative duties Monday-Friday 7:30am-5:00pm. The facility houses administrative areas, a drill hall, classrooms, a supply room, a weapons vault, a boiler room, a kitchen, and a deactivated Indoor Firing Range. A schematic drawing of the facility can be found in Attachment 6.

The facility was visually examined and personnel consulted to assess potential hazards present. Health Hazard Information Modules were completed. Illumination survey was performed throughout the facility. There is generalized poor lighting through out the facility.

2.0 INSTRUMENTATION/CALIBRATION

The following instrumentation was used to obtain light measurements. The instrument used has been calibrated and was operated according to the manufacturer's recommendations:

SPER SCIENTIFIC Light Meter

3.0 FINDINGS

Illumination

Illumination levels were recorded in administration offices, classroom, the drill hall and the supply room. All areas tested were within IES minimum standards. However at the recruiter office, administration office, and the classroom there were light fixtures with bulbs out. There were 9 light bulbs out in the drill hall. See Light Readings Table at the end of this section.

Administration

Personnel perform administrative duties that consist of reading, handling and generating paper work. Computer use comprises a large portion of the working day, four to five hours per day. This continuous use of computers can in the long run lead to eyestrain and hand/wrist soreness.

Motor Pool

The motor pool is located in a fenced area in the rear of the building. The motor pool includes many (about 26) communication shelter vehicles, 2-2.5T trucks. PMCS services are performed at the armory. All maintenance and repairs are performed at the nearby OMS #15 in Mullins.

Drill Hall

The Drill Hall is located in the center of the building. It is used primarily for formation and classes on weekend drills. Most drills are conducted in the armory. Three vehicles were stored in the Drill Hall the day of the survey. Personnel reported that another building will be built to store vehicles but for the time being they are kept in the Drill Hall for security. Other items stored in the Drill Hall at this time were lockers, tables and chairs and a riding lawn mower. The Drill Hall is used to clean weapons two or three times a year. Tables are set up with a cover and about 10 troops at a time. Roll-up door is opened and air exhaust ventilation fans turned on. At the time of the survey, one of the air exhaust ventilators was not working. The Drill Hall is not rented for outside activities.

Boiler Room

The boiler is a metal one that uses natural gas. It has no wrapping with some rusted areas (see pictures). The hot water tank shows some of the wrapping peeling off at the bottom and front. Bulk sample for asbestos was taken from the broken wrapping of the hot water tank. It is used to heat the Drill Hall and the latrines. Personnel stated that the boiler works well. No water leakage observed at the time of the survey.

Deactivated Indoor Firing Range

A deactivated Indoor Firing Range (IFR) has been converted into a storage area for repair parts, vehicles, instruments and a lawn mower. There are metal and wood cages located in this area too. The floor in front of the bullet backstop was full of boxes. Survey of the area shows a wood floor (plywood) covering the front of the bullet backstop. Upon removal of a section of the plywood flooring, it was found that the sand from the original IFR was still present. Personnel do not know when the IFR was cleaned or "sanitized". Six swipe samples were taken from the IFR. Three of the six samples were above the clearance level of 200ug/ft2. See table 1 for results.

Table 1

Sample Number	Sample Location	Results
41	Bullet backstop	4710ug
42	Edge of the Floor in front of bullet backstop	407
43	Item stored in IFR (top of wood box)	83ug
44	Item stored in IFR (metal roll case)	232ug
45	Wall next to entrance/exit door	36ug
46	Blank	BLR

Weapons Vault

The Hemingway Armory has a weapon storage vault located in the Supply Room. Personnel stated that accountability and issuing of weapons are performed in this area. Weapons are cleaned in the Drill Hall with the air exhaust ventilators turned on. The dehumidifier in the weapons vault is on all the time.

A/C System

Central A/C units are used to cool the administration offices and the classroom. The supply room has an A/C window unit. A/C units were working well at the time of the survey. A/C filter was dirty. Personnel do not know when was the last

time it was changed. Six swipe samples for Lead (Table 2) were collected from the supply air grills in the offices occupied by personnel of the Armory and the classrooms. All samples were below the clearance level of 200 ug/ft2.

Table 2

Sample Number	Sample Location	Results
51	Classroom	28ug
52	CO Office	BRL
53	Administration Office	BRL
54	A/C filter supply side	BRL
55	A/C filter fan side	26ug
56	Blank	BLR

Material Safety Data Sheets

The MSDS Book is located in the Supply Room. Personnel do not know when was the last time it was updated. The oil shed is located outside the building. It was not locked at the time of survey. There was no Hazardous Material Inventory List in the oil shed. Employees have not attended Hazardous Materials Training in a long time.

Light Readings

Light measurements were taken in various locations throughout the facility. The results were compared to guidelines recommended by the Illuminating Engineering Society (IES). The results of the survey are shown in Table 3.

Location	Light Reading (footcandles)	IES Recommendation (footcandles)
ADO Administration Office	64-182 (Avg. 109)	50-100
ADO Recruiter Office	32-110 (Avg. 68)	50-100
Classroom	31-126 (Avg. 74)	50-100
ADO Supply Room (Office)	48-53 (Avg. 50)	50-100
ADO Supply Room (Storage)	34-49 (Avg. 41)	20
CO Office	67-129Avg. 87)	50-100
Drill Hall	16 160 (Avg. 70)	30

All areas tested were within IES minimum standards. However at the recruiter office, administration office, and the classroom there were light fixtures with bulbs out. There were 9 light bulbs out in the drill hall. Consideration should be given to provide supplemental lighting in those areas that were below the recommended standard and to replace burned out bulbs. ANSI RP7-1991.

4.REFERENCES

- Guide to Occupational Exposure 2000, American Conference of Governmental Industrial Hygienists (ACGIH), Cincinnati, Ohio.
- American National Standards Institute (ANSI), /Illuminating Engineering Society (IES), Industrial Lighting 1991.
- National Institute for Occupational Safety and Health (NIOSH), (76-130)
 Technical Information, Lead Exposure and Design Considerations for Indoor Firing Ranges GPO, 1975.
- Title 29, Code of Federal Regulations (CFR). 1999, revision, Part 1910.
 Occupational Safety and Health Standards
- AR 40-5, Preventative Medicine, 15 October 1990.
- AR 385-10, The Army Safety Program, 23 May 1988.
- National Safety Council, Fundamentals of Industrial Hygiene, 4th edition, 1996.

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- AR 385-16, National Guard Pamphlet, Safety Guidelines for Converting Indoor Firing Ranges to Other uses.
- TB MED 503, The Army Industrial Hygiene Program, February 1985.
- Department of the Army Pamphlet (DA PAM) 40-501,27 August 1991, Hearing Conservation.
- Title 29 CFR, Part 1910.1200, The Hazard Communication Standard.



RECOMMENDATIONS

- Provide supplemental lighting in those areas where light measurements were below the recommended standard (as represented in Table 3). Replace burned out light fixtures and bulbs as stated in the light measurements section.
- Recommend that when using computers for extended periods of time, personnel should take occasional breaks and change position to minimize the possibility of eyes and/or hands/wrist injury.
- Continue to ensure that weapon maintenance and cleaning is done in a wellventilated area. Continue to practice good personal hygiene by washing hands after handling and cleaning weapons.
- A work request should be re-submitted to the appropriate state office for the repair of the broken air exhaust ventilation fan.
- The A/C filter should be replaced in a timely manner according to the manufacturer recommendation.
- Use the MSDS book to develop a Hazardous Materials Inventory List for the oil house.
- Ensure that personnel and troops have knowledge of the location of the MSDS book. And is enrolled hazardous materials safety training.
- Discourage, as much as possible, the use of the Drill Hall to store vehicles.
- That the state Occupational Safety and Health office review the lead swipe clearance sample results of this facility to determine if the IFR will need further decontamination and the removal of the sand from the front of the bullet backstop.

HEALTH HAZARD INFORMATION MODULE FIELD SURVEY *SEE PRIVILEY AND SAFEMENT ON REVERSE. (For use of this form, see FIHIM User's Instructions.)

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HEALTH HAZARD INFORMATION MODULE FIELD SURVEY *SEE PRIVATES AVAILABLE COPY ON REVERSE. (For use of this form, see IDHIM User's Instructions.)

SECTION 1.

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Analytical Environmental Servs, Inc.

Date: 5/30/2003

TOTAL LEAD IN WIPE SAMPLES N7082

CLIENT:

Non-Responsive

Myrtle Beach SC

Project:

Project No: PO No: Myrtle Beach SC Armory

Lab Order:

0305742

Date Received:

5/23/2003 12:00:

Matrix:

Wipe

Analyst:

CDW

Laboratory ID	Client Sample ID	Results	Units	MDL	DF	Date Collected	Date Analyzed
0305742-001A	41	4710	μg, Total	8.57	1	5/20/2003	5/29/2003
0305742-002A	42	407	μg, Total	2.83	1	5/20/2003	5/29/2003
0305742-003A	43	83.0	μg, Total	2.83	1	5/20/2003	5/29/2003
0305742-004A	44	232	μg, Total	2.83	1	5/20/2003	5/29/2003
0305742-005A	45	36.0	μg, Total	2.83	1	5/20/2003	5/29/2003
0305742-006A	46	BRL	μg, Total	2.83	1	5/20/2003	5/29/2003
0305742-007A	51	28.0	μg, Total	2.83	1	5/20/2003	5/29/2003
0305742-008A	52	BRL	μg, Total	2.83	1	5/20/2003	5/29/2003
0305742-009A	53	BRL	μg, Total	2.83	1	5/20/2003	5/29/2003
0305742-010A	54	BRL	μg, Total	2.83	1	5/20/2003	5/29/2003
0305742-011A	55	26.0	μg, Total	2.83	1	5/20/2003	5/29/2003
0305742-012A	56	BRL	μg, Total	2.83	1	5/20/2003	5/29/2003

Qualifiers:

MDL - Method Detection Limit

ND - Not Detected at the Reporting Limit

DF - Dilution Factor



ANALYTICAL ENVIRONMENTAL SERVICES, INC. 3785 Presidential Parkway

Atlanta, GA 30340 Tel: (770) 457-8177 Fax: (770) 457-8188

AES Job Number: B14426 Page 1 of 1 Total Samples Friday, May 30, 2003



BULK SAMPLE ANALYSIS

Client Name: Project Name:

Myrtle Beach SC Armory

No. 57

Client Sample ID: Location:

Wopping (broken) Hot water tank

Project Number:

AES Lab ID: 146740

Sample Description: Gray semi-hard silty to fibrous

All percentages given below	are visually estimated by volume			
ASBESTOS FIBERS	NON-FIBROUS MA	TERIAL S		
Chrysotile:	Vermiculite:			
Amosite:	Biotite:			
Crocidolite:	Mica:			
Anthophyllite:	Perlite:	3 A A		
Tremolite:	Aggregates:	8 (802.2)		
Actinolite:	Styrofoam:			
NON-ASBESTOS FIBERS	OTHERS			
Synthetics:	Aluminum:			
Mineral Wool: 25	Bitumen:	3I 9 ₁		
Fiberglass:	Resilient Material:	5		
Cellulose:	Glue:			
Animal Hair:	Binders:	75		
Antigorite:	Ollideis.	75		
COMMENTS:				

It is certified by the signatures below that the laboratory identified is accredited by the National Institute of Standards and Technology for Polarized Light Microscopy (PLM) analysis under the EPA Interim Asbestos Bulk Sample Quality Assurance Program, Laboratory 102082-0.

Microanalyst:

All percentages given All percentages given between the EPA Method for the Determination of Asbestos in Bulk Building Materials, EPA/600/R-93/116, July 1993." This report must not be reproduced except in full with the approval of Analytical Environmental Services, Inc. These test results apply only to the samples actually tested. The refractive index was determined by using "Rapidly and Accurately Determining Refractive Indices of Asbestos Fibers by Using Dispersion Staining Method" by Shu-Chun Su, Ph.D.



Myrtle Beach, S C Armory



Post t NGB FOIA Reading Room May, 2018



Drill Hall



Post t NGB FOIA Reading Room May, 2018



IFR, Front View

IFR, Rear View

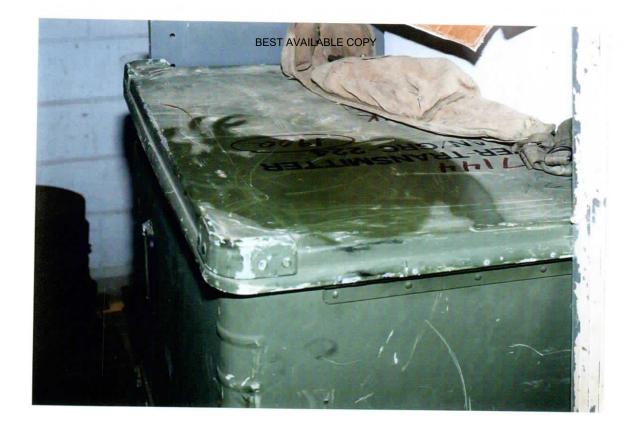




Floor in front of Bullet Backstop

Sand on Floor in Front of Bullet backstop





IFR, Sampling Areas



Post t NGB FOIA Reading Room May, 2018

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FOIA Requested Record #J-15-0085 (SC) Released by National Guard Bureau Page 835 of 964



A/C Grill

A/C Unit Filter



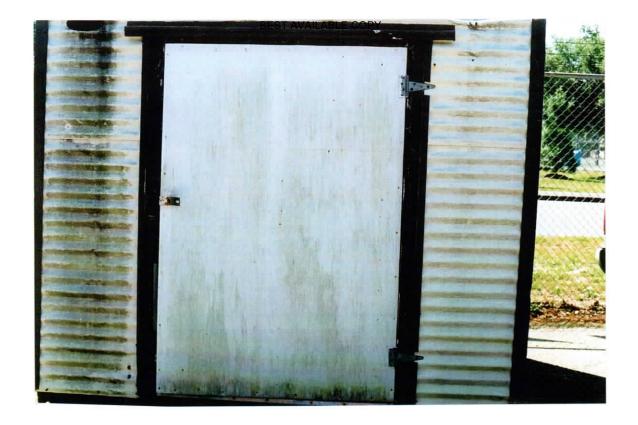
May, 2018



Boiler

Hot Water Tank, Broken Wrapping





Oil House

Motor Pool



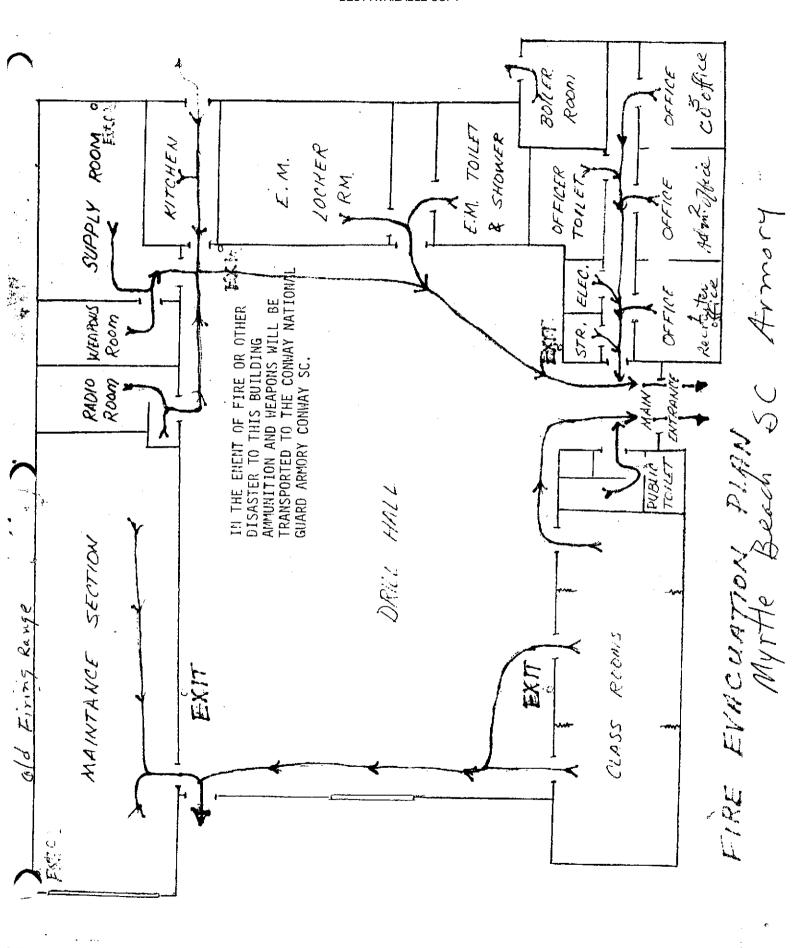


Motor Pool



Post t NGB FOIA Reading Room May, 2018

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NATIONAL GUARD REGION SOUTH INDUSTRIAL HYGIENE OFFICE 510 PLAZA DRIVE, SUITE 1530 COLLEGE PARK, GA 30349

NGB-ARS-SEIH

28 February 2007

MEMORANDUM FOR: The South Carolina Army National Guard, ATTN: Non-Responsive Facility Supervisor, HC/HHC 218th Brigade, 275 General Henderson Road, Newberry, South Carolina 29108.

THRU National Guard Road, TAG-MP-MSS, Columbia, SC 29201.

SUBJECT: Industrial Hygiene Survey of the, 218th Brigade.

- 1. References.
- a. Report submitted 28 January 2007, Industrial Hygiene Survey, OSHEA II Consulting.
- b. OSHA Standards 29 CFR (Code of Federal Regulations), General Industry, revised 1988.
 - c. AR 40-5, Preventive Medicine, October 1990.
 - d. AR 11-34, 15 February 1990, The Army Respiratory Protection Program.
 - e. AR 385-10, 23 May 1988, Army Safety Program.
- f. Department of the Army Pamphlet (DA PAM) 40-501, 27 August 1991, Hearing Conservation.
 - g. TB MED 530, The Army Industrial Hygiene Program.
- h. Title 29 Code of Federal regulation (CFR), 1989 rev, Part 1910.94 (c) (6) Table G-10, Ventilation.
- i. Industrial Ventilation, 21st ed, 1992, American Conference of Governmental Industrial Hygienist, Cincinnati, Ohio.
- j. IES Lighting Handbook, Application Volume, 1981, Illumination Engineering Society of North America.
- General.
- a. At the request of the South Carolina State Safety and Occupational Health Office and the Region South Industrial Hygiene Office a Service Contract was put together to conduct Health Hazard Information module (HHIM) Field surveys and IH surveys at South Carolina National Guard Facilities.

- b. Non-Responsive of OSHEA II Consulting conducted the survey.
- 3. Findings. All HHIM field survey forms and survey findings of the report are enclosed. (See ENCL. 1)
- 4. Recommendations.
- a. Discuss the high lead samples taken inside of the vault on the weapons and the weapons rack with the Safety and Occupational Health Office, the Facility Management Office and the Environmental Office. Request help in eliminating possible employee lead exposures. Be prepared to educate personnel on proper housekeeping procedures of the range. Follow NG PAM 420-15, Guidelines for converting indoor firing ranges to other uses and NG REG 385-15, Policy, Responsibilities and guidelines for housekeeping, rehabilitation and/or conversion of indoor firing ranges. (RAC 1)
- b. Weapons should receive another cleaning to remove lead residue, but weapons are never to be cleaned inside the weapon's storage vault or any other enclosed area without adequate ventilation in accordance with references 1a and 1c. Personal Protective equipment, such as goggles, should be worn to protect eyes from splash hazards and gloves should be worn to prevent solvent absorption through the skin. 29 CFR 1910, 132, and AR 385-10
- c. Put a plan in place to correct the deficiencies and let the Occupational Safety and Health Office know in 30 days how you are going to correct all recommendations.
- d. To execute your responsibilities in correcting all deficiencies and meeting all standards coordinate with the FMO, the Environmental Office the Occupational Health Nurse and the Occupational Safety and Health Office for technical guidance.



CF: State Safety and Occupational Health Office ATTN: TAG-AV-SS Non-Responsive 1 National Guard Road, Columbia, SC 29201-4766

OSHEA II IH CONSULTING

South Carolina Army National Guard Newberry Armory



OSHEA II IH CONSULTING PO BOX 35669 FAYETTEVILLE, NC 28303

MEMORANDUM FOR: South Carolina Army National Guard: ATTN: Non-Responsive Armory Supervisor, HC/HHC 218th Brigade, Newberry, South Carolina 29108

SUBJECT: Baseline Industrial Hygiene Health Hazard Information Module (HHIM) Survey of HC/HHC 218th Brigade, 275 General Henderson Road, Newberry, South Carolina 29108

January 31, 2006

REFERENCES

- Title 29 Code of Federal Regulations (CFR) part 1910, Occupational Safety and Health Administration (OSHA).
 - b. Army Regulation 385-10, The Army Safety Program.
- c. Army Regulation 11-34, February 1990, The Army Respiratory Protection Program
- d. Technical Bulletin (TB MED) 503, 1 February 1985, The Army Industrial Hygiene Program
- e. Industrial Ventilation, 22nd Edition, The American Conference of Governmental Industrial Hygienist (ACGIH), Cincinnati, Ohio.
- f. National Guard Regulation 385-10, 20 December 1989, Army National Guard Safety and Occupational Health Program.
- g. IES Lighting Handbook, Application Volume 2000, Illumination and Engineering Society of North America.
- h. Department of the Army Pamphlet (DA PAM) 40-501, 27 August 1991, Hearing Conservation Program.
- i. Technical Bulletin (TB MED) 503, 1 February 1985, The Army Industrial Hygiene Program.
 - j. Army Regulation (AR) 40-5, 15 October 1990, Preventive Medicine.

Oshea II Industrial Hygiene Consulting IH Survey South Carolina 2. GENERAL: At the request of Non-Responsive, National Guard Bureau South, Regional Industrial Hygienist, Atlanta, Georgia, a Health Hazard Information Module Baseline Survey was performed at HC/HHC 218th Brigade, Newberry, South Carolina. The purpose of this survey was to evaluate health hazards, existing controls in the work site to perform a baseline survey in accordance with references 1a through 1j and collect bulk samples.

FINDINGS:

Armory Site Description: The HC/HHC 218th Brigade is housed in Newberry armory. There are active duty and AGR personnel in this facility. Twenty-five full time individuals perform administrative duties. Administrative duties consist of phone answering, using computers and generating paper work. This was a very busy time. Many were deploying as the survey was being performed. Non-Responsive line was constantly ringing. He was responsible for providing information for those who were being deployed. There are three hundred and eight people in the brigade and the majority of them are in the process of deploying.

The armory was constructed in 1981 and is over 50,000 square feet. It contains several offices/ administrative areas, one combined kitchen/mess hall, supply rooms, two weapons vault and a converted indoor firing range. The armory was well kept and there was no evidence of leaking on ceiling tile. No tile was found friable on the floors or in the ceilings.

In this armory active duty are on the east side of the building and National Guard on the west. The active duty personnel perform the normal duties of maintenance such as brake/clutch operations, grinding, buffing, refueling, handling POL products and equipment calibration. The guard personnel perform administrative duties.

In the old firing range the bullet stop was still in place. A wall had been fabricated in front at the sand pit. There was water standing in that sand pit. Apparently as it rains it leaks in that area and the water was standing about one half of a foot. Chairs and board had been stored in the sand. Samples were collected in the places that could be reached.

It was stated that the kitchen is used to prepare one meal a day during drill. Wipe sampling was performed in the kitchen, firing range and both vaults. One weapons vault was empty. Samples were obtained from the walls of the empty vault.

The photographs following are to show the lay out of the facility.

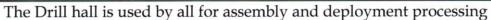


This is the foyer at the entrance of the armory. It was immaculate and well kept.

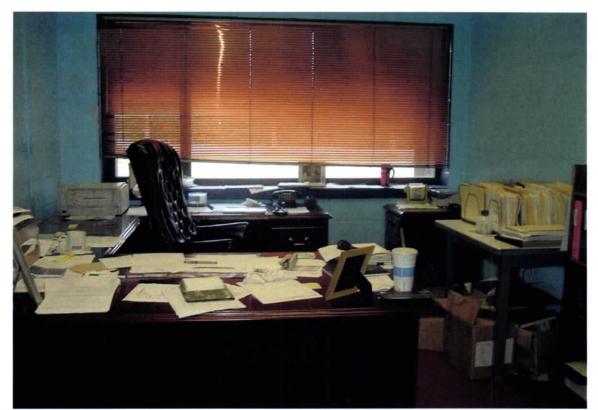


Conference room use by the active duty officials















AD office (above)

Kitchen (below)



Post t NGB FOIA Reading Room May, 2018



Bullet stop (range) Chairs, metal tables and wooden boards were stored here.





This was the firing range. It was being used as a storage area. Non-Responsive stated that the range had not been used for many years. It is used to store the items shown in this photograph. No one comes in this room except to put something in it or to remove something.

a. Hearing Conservation Program: All employees are enrolled in the Hearing Conservation Program and receive annual audiograms.

b. HAZCOM: HAZCOM training had been performed prior to this survey. MSDS were available for their inventory.

Oshea II Industrial Hygiene Consulting IH Survey South Carolina c. **Illumination:** Illumination levels were recorded in all administrative areas, classrooms, training rooms and supply areas throughout the Armory. See chart below for specific location of measurements.

Location	Illumination level (FTC)	IES Standard (FTC)
General's offices	65.867.1	50100
Colonel's offices	58.862.4	50100
Major's offices	53.866.6	50100
Lounge	54.959.0	50100
Conference room	57.558.0	50100
Other Admin offices	60.170.0	50100
Converted range	23.228.4	510
Vault	21.132.9	50100
Supply	55.561.1	50100
Training office	63.970.2	510
Empty storage	73.074.9	50100
Recruiter's office	67.365.9	50100

The majority of readings are at the IES lighting standard of 50 to 100 foot candles.

- d. Administrative Areas: Personnel perform administrative duties that consist of reading, handling and generating paper work. Employees use computers and answer phones.
- e. Wipe sampling was performed in the Armory. A total of 30 wipe samples were collected and sent to the laboratory for lab analysis. Samples were analyzed for lead. All sample results were below reading limits (BRL) in the kitchen, and the drill hall; however all the samples taken from the weapons vault revealed the presence of lead. One sample taken from the bullet vault contained lead. (Sample No. 0702022—239 micrograms) That sample was taken from center of the bullet top. Samples taken from the weapons vault were the following:

Sample No.	Location	Results
170201	Weapons	30.7 micrograms per cubic meter
170202	Weapons	30.3 micrograms per cubic meter
170203	Weapons	122 micrograms per cubic meter
170204	Weapons	3330 micrograms per cubic meter
170206	Weapons rack	134 micrograms per cubic meter
170208	Weapons rack	20.8 micrograms per cubic meter
170209	Weapons rack	4820 micrograms per cubic meter
1702010	Weapons rack	125 micrograms per cubic meter

- f. A noise level survey was not performed of the vehicles belonging to the active duty unit at this facility.
- g. Arms Room/Weapons Vault: Weapons are stored in the armory's vault. It is reported that no weapons cleaning is performed inside of the weapons storage vault. It was also stated that weapons are cleaned before being placed in the arm's vault.
- i. **Solvent Bath:** During drill training the solvent bath is used. The fluid in the solvent bath tank is warmed and weapons are cleaned on the drill hall floor. Full time Personnel place their weapon in the cleaning solution for a few minutes, remove it and finish the cleaning process. It is stated that it is a two-part process. The cleaning process takes less than thirty minutes.



CF: State Occupational Health Office ATTN<mark>Non-Responsive</mark> 1 National Guard Road Columbia, South Carolina 29201-4766

CF: State Safety Office 1 National Guard Road Columbia, South Carolina 29201-4766

INSTRUMENTATION:

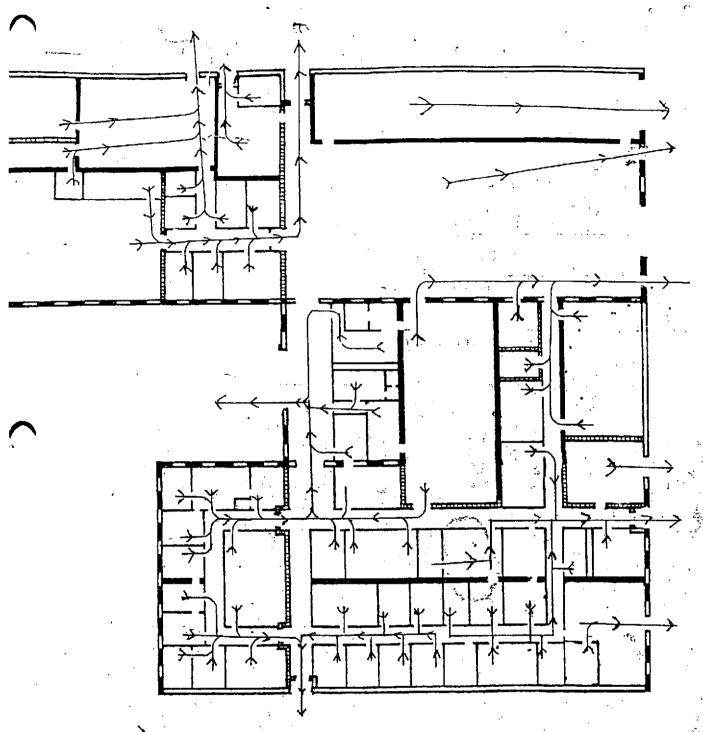
The following survey instrumentation was utilized to obtain noise, illumination or ventilation measurements. All equipment was used according to manufacturer/ manual recommendations. All equipment was calibrated prior to and after use.

Nomenclature	Serial No.
Extech Light Meter	L595339
Extech Sound Level Meter	6134582
Extech Sound Calibrator	5431625

Enclosure 1

Facility layout

Enclosure No. 2



FIRE EVACUATION PLAN

Evacuate to: Primary- Whitmire Armory, Secondary, Clinton Armory Priority 1 - Weapons
Priority 2 - Personnel Records

Priority 3 - Classified Documents
righty 4 - Other Records and Equipment

Hazardous Material inventory

Floor wax stripper Floor cleaner Roach, ant & wasp cleaner Hand soap Glass cleaner

Enclosure No. 3

Full time Personnel

Requested by not provided

Enclosure No. 4

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INDUSTRIAL HYGIENE SURVEY FORM

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"HLMT/PL	.g/ COVE	ERALLS _		ERMEABLE BOOTS/_	
" MUFF ONL		BODY SUIT _		ETY SHOE CONDUCT/_	
108-118 MUFF/PLO	G/ HEAT	REFLECTIVE _	_/ SAFE	TY NON CONDUCT x / x	
118 OR> MUFF/PLO	G/_ VEST,	/SUIT _	/ OTHER		
W/ TIME LIMIT	SAFETY B	BELT/ HARNESS	/ OTHER_		
SPECIAL PURPOSE		THER BDU			
	CAS CODE	PAC	EPC	HAZARD DESCRIPTION	
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POFOOTHAZ	POstress	-	- 0	Mental / physical stress	
POFLYPROJ	Polifting	3	D	Heavy lifting	
POEYEHAZA	P0eyehaza	2	A	Eye Hazards	
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POSHARPOBJE					
POELSHOCK					
COLUBEOIL DESCRIBED OPERATION			_1		
DESCRIBED OPERATION					

Administrative duties are performed six to eight hours a day and consists of answering phones, using computers, generating paper work and running errands.

PERSONNEL LIST ATTACHED

Enclosure No. 5

INDUSTRIAL HYGIENE REGION SOUTHEAST ARMY NATIONAL GUARD 510 AIRPORT PLAZA, SUITE 1530 COLLEGE PARK, GEORGIA 30349-6021

NGB-AVN-SI SE

Sept 16, 2004

MEMORANDUM FOR: Mark Clark Armory, ATTN: Molecular 7220 Cross County Rd Charleston, SC 29418

SUBJECT: Industrial Hygiene Survey of General Mark Clark National Guard Armory.

1. References.

- a. Title 29, Code of Federal Regulations (CFR) Part 1910, Occupational Safety and Health Administration (OSHA).
- AR 40-5, Preventive Medicine, 15 October 1990.
- AR 385-10, 23 May 1988, Army Safety Program.
- d. TB MED 503, The Army Industrial Hygiene Program.
- e. Title 29 CFR, Part 1910.1200, The Hazard Communication Standard.
- f. Department of the Army Pamphlet (DA PAM) 40-501, 27 August 1991, Hearing Conservation.
- g. Industrial Ventilation, 22nd, Edition, American Conference of Governmental Industrial Hygienists (ACGIH), Cincinnati, Ohio.
- IES Lighting Handbook, Application Volume 1981, Illumination Engineering Society of North America.
- NG PAM 385-16, Conversion of Indoor Firing Ranges to other Uses, 31 January 1994. [2002 Under Revision-Refer to All-States Ltr P01-0075 for current guidance]
- j. Departments of the Army and Air Force, NGB-ADE-OM, subject: All State Log Number (1920323) Indoor Range Clean-up at State Owned Armories, 28 July 1992.

SUBJECT: Industrial Hygiene Survey of General Mark Clark National Guard Armory, North Charleston, South Carolina.

- General. At the request of the South Carolina Safety & Occupational Health Office in Columbia, SC lead paint sampling was collected in the General Mark Clark National Guard Armory in North Charleston, SC.
- 3. <u>Purpose</u> The purpose of the survey was to collect air and bulk paint samples from the walls and in areas where paint was peeling from the walls of the Armory. The survey consisted of a walk through inspection of all operations and administrative areas in the Armory. Interviews were conducted with Non-Responsive to gather information relative to the various operations at the Armory. The concern was possible high lead levels in the paint peeling off the walls.
- 4. Facility Description: This facility house the following units, which include the 105th South Carolina Headquarters Battalion, 116th Signal Company, 678th Engineering Battalion and the 218th MI Company. The armory has a total of 27 full time soldiers plus one recruiter. The soldiers perform administrative duties Monday through Friday between 0630 and 1600 hours. Each unit maintains an administrative, supply and arms room. The Armory indoor firing range is now used as a storage area. The physical structure is a one story gray brick dwelling built in 1986.

5. Findings.

- a. All paint chip samples were BRL (Below Readable Levels) and all air samples were < (less than record able levels. There was no lead in the air or in the paint chips.
- b. Lead swipe samples taken in the Indoor Firing Range that had been converted to storage revealed lead on the floor inside the bullet trap exceeding 200 micrograms.

Sample results Lead wipes Indoor Firing Range

Black Center wall	BRL
Floor inside Bull stop	665
On the flood outside Bull stop	47.0
Back plummet wall	BRL
Outside Door of range	BRL
Kitchen on top of ice maker	BRL
Vent on top of ice machine	66.0
Blank	BRL

Paint Chip Samples Results Supply room inside front Door BRL Outside Supply Room Door BRL Outside IFR Room 105 BRL Class #1 Back wall Room 132 BRL Room #158A Asvab testing BRL Orderly room BRL Results Air Samples <0.000339 (mg/m3) Sgt Atkins Sgt Atkins Desk <0.000331 (mg/m3) Supply room Table <0.000331 (mg/m3) <0.000337 (mg/m3) Locker

Air Sample Standard - .05mg/m3=PEL

6. Recommendations.

- a. There is no lead problem with the paint on the walls. Remove peeling paint from walls and repaint as seen fit.
- b. Resample (swipe) the Indoor Firing Range to determine the extent of the cleanup needed.

8. If additional information is needed about this report, please contact Industrial Hygiene Technician, ARNGAHS,



CF: State Safety and Occupation Health Office, ATTN: Carolina Army National Guard.



Enclosures

May, 2018

NATIONAL GUARD REGION SOUTH INDUSTRIAL HYGIENE OFFICE 510 PLAZA DRIVE, SUITE 1530 COLLEGE PARK, GA 30349

NGB-AVN-SI

08 February 2000

MEMORANDUM FOR THE OFFICE OF THE ADJUTANT GENERAL, Safety and Occupational Health Office, ATTN: Non-Responsive 1 National Guard Road, Columbia, SC 29201-4766

SUBJECT: Lead swipe sample results taken 26 January 2000 at Mark Clark Armory Indoor Firing Range (IFR).

- 1. References.
 - a. AR 40-5, Preventive Medicine, October 1990.
 - b. AR 385-10 Army Safety Program.
- 2. Purpose. At the request of Non-Responsive follow-up swipe samples were taken after initial clearance sampling revealed high levels of lead still remained in the IFR. The follow-up samples were taken after the contractor recleaned the areas where the sample results were high or above 200ug on the walls and 100ug on the floor.
- 3. Findings. The follow-up sample results taken where high levels were recorded were all below record able levels.
- 4. Recommendations. Do not allow the contractor to conduct clearance sampling.



NATIONAL GUARD REGION SOUTH INDUSTRIAL HYGIENE OFFICE 510 PLAZA DRIVE, SUITE 1530 COLLEGE PARK, GA 30349

NGB-AVN-SI

13 January 2000

MEMORANDUM FOR THE OFFICE OF THE ADJUTANT GENERAL, Safety and Occupational and Health Office, South Carolina Army National Guard, ATTN:

Non-Responsive Safety Manager, 1 National Guard Road, Columbia, SC 29201-4766.

SUBJECT: Industrial Hygiene Survey of Mark Clark Armory Indoor Firing Range, North Charleston, South Carolina.

1. References.

- a. National Guard Regulation (NGR) 385-10, 20 December 1989, Army National Guard Safety and Occupational Health Program.
- b. Army Regulation (AR) 11-34, 15 February 1990, The Army Respiratory Protection Program.
- c. AR 40-5, 15 October 1990, Medical Service, Preventive Medicine.
- d. Title 29, Code of Federal Regulations (CFR), 1990 rev., Part 1910, Occupational Safety and Health Administration.
- e. Report, "Lead Dust Removal South Carolina Army National Guard Mark Clark Armory Indoor Firing Range Final Report", SPORTENVDETCHASN.

2. General.

- a. At the request of Non-Responsive, Safety Manager of the Safety and Occupational and Health Office, South Carolina Army National Guard, follow-up lead (pb) swipe sampling was conducted at The Mark Clark Armory Indoor Firing Range in North Charleston, South Carolina.
- b. The scope of work for this project was to reduce the lead dust contamination inside the firing range to a level that presented no appreciable risk to personnel. The levels established for this project were to reduce lead in dust below 100 μg/ft² for floors and 200 μg/ft² for all other surfaces.
- The cleaning and clearance sampling of the Indoor Firing Range conducted by the same contractor.
- Findings.

Swipe samples taken by the Regional Industrial Hygienist for the Army National Guard revealed the following results:

Sample No.	Location of sample	Results µg	Remarks
1	Top left wall	25	
2	Middle left wall	21	
3	Bottom left wall	530	>200
4	Top left bullet stop end	102000	>200
5	Middle bullet stop end	414	>200
6	Bottom right bullet stop end	467	>200
7	Top right wall	5390	>200
8	Middle right wall	46	
9	Bottom center rear wall	20	
10	Bottom rear wall	46	
11	Center rear wall	<20	
12	Top rear wall	22	
13	Floor right bullet stop	96	
14	Floor center	47	
15	Floor left rear wall	45	
16	Ceiling left bullet stop	85	
17	Ceiling center	34	
18	Ceiling right rear wall	37	
19	Blank	<20	
20	Blank	<20	
21	Ceiling left of sample #16	93	
22	Base of exhaust duct at top of backstop wall	716	>200
23	Corner ceiling left of sample #18	20	
24	Top of table in room	<20	
25	Ventilation system in kitchen behind IFR	35	
26*	Louvers on outside exhaust system in	8060	>200

	rear of IFR	-	
27	Top of boxes center	34	
	of room		

^{*}Sample #26 result was not responsibility of Contractor to abate.

See Appendix 1, Lab results and diagram of how samples were taken.

4. Discussion.

Sample results were issued to all parties involved as they were received. Based on sample results Non-Responsive of SPORTENVDETCHASN has reentered the Indoor Firing Range and encapsulated 20-30 additional feet of the left wall, right wall and backstop or rear wall where the results revealed high readings.

Recommendations.

- Have clearance samples taken by someone other than the contractor who cleaned the Indoor Firing Range.
- b. Seal opening to exhaust ventilation ductwork to contain lead dust on and in the ductwork leading to exhaust fan in rear of building.
- c. Remove exhaust system in outside in the rear of the Indoor firing Range.
- d. Conduct follow-up sampling to see if addition encapsulate of high sample areas have been reduced within acceptable levels.



CF: Office of the Adjutant General, ATTN: TAG-DSO-FM-EV Guard Road, Columbia, SC 29201-4766

Non-Responsive

1 National



ANALYTICAL ENVIRONMENTAL SERVICES, INC.

December 01, 1999



SC-1199-04/Walk Clark Almory IFR

Order No.: 9911389

Dear

Analytical Environmental Services, Inc. received 27 samples on 11/24/99 2:00:00 PM for the analyses presented in the following report.

No problems were encountered during analyses. Additionally, all results for the associated quality control samples were within EPA and/or AES established limits except where noted in the project Case Narrative.

If you have any questions regarding these test results, please feel free to call.



Analytical Environmental Services, Inc.

Date: 01-Dec-99

CLIENT:

GA Army National Guard

Lab Order:

9911389

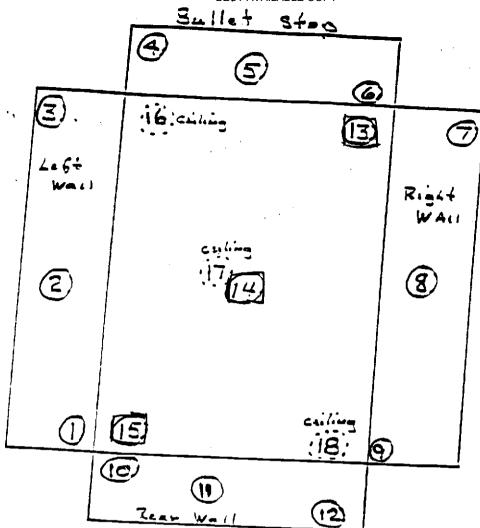
Project:

SC-1199-04/Mark Clark Armory IFR

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	μg, Total	5390 -	
	μg, Total	46	
	μg, Total	20	

INITIAL INDOOR RANGE SAFETY AND INCUSTRIAL HYGIENE VISIT

UNIT		V 10/0
DATE BUILT/RENOVATED	200 °	LOCATION
VENILATION SYSTEM: YES	NC	Non-Responsiv
TYPE BULLET STOP:		
SAND TRAP: YES NO		NO
IN OPERATION: YES NO	570 1ag 8	1.00 m
REMARKS:		
	f.	
Non-Resp	onsive	DATE: 11/23/29



Contents of range sample

- 1. range sampling diagra-
- 2. bulk sample data for-
- 3. sampling swabs
- 4. distilled water
- 5. bulk sample container
- 6. treatment gloves

- WALL - O

- CETLING

- FLOCR -

threen samples per rifle range will be taken.

- samples will be taken utilizing a 3"x 3" template.
- smear tabs will be moistened only with distilled water.
- samples are to be numbered and taken in correlation with the above diagram.
- . each smear tab will be placed separately in a small, numbered plastic bag.

Unt of samples the EMA Example dooms each. CBESTAWARABLE COPYTHE number Arequested Record #J-15-0085 (SC)
May, 2018

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Page 870 of 964

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NATIONAL GUARD REGION SOUTH INDUSTRIAL HYGIENE OFFICE 510 PLAZA DRIVE, SUITE 1530 COLLEGE PARK, GA 30349

NGB-AVN-SI 6 October 2005

MEMORANDUM FOR the South Carolina Army National Guard, ATTN: Armory Supervisor, 107 Webb Road, Saluda, SC 29138.



SUBJECT: Industrial Hygiene Survey of the Saluda National Guard Armory, Saluda, South Carolina.

- 1. References.
- a. Report submitted 5 October 2005, Industrial Hygiene Survey, Non-Responsive
- b. OSHA Standards 29 CFR (Code of Federal Regulations), General Industry, revised 1988.
 - c. AR 40-5, Preventive Medicine, October 1990.
 - d. AR 11-34, 15 February 1990, the Army Respiratory Protection Program.
 - e. AR 385-10, 23 May 1988, Army Safety Program.
- f. Department of the Army Pamphlet (DA PAM) 40-501, 27 August 1991, Hearing Conservation.
 - g. TB MED 530, the Army Industrial Hygiene Program.
- h. Title 29 Code of Federal regulation (CFR), 1989 rev, Part 1910.94 (c) (6) Table G-10, Ventilation.
- i. Industrial Ventilation, 21st ed, 1992, American Conference of Governmental Industrial Hygienist, Cincinnati, Ohio.
- j. IES Lighting Handbook, Application Volume, 1981, Illumination Engineering Society of North America.
- 2. General.
- a. At the request of the South Carolina State Safety and Occupational Health Office and the Region South Industrial Hygiene Office a Service Contract was put together to conduct Health Hazard Information module (HHIM) Field surveys and IH surveys at the South Carolina National Guard Armories.
 - b. Non-Responsive conducted the survey.

- Findings. All HHIM field survey forms and survey findings of the report are enclosed.
 (See ENCL. 1)
- Recommendations.
- a. Follow all recommendations made in reference 1. a., requesting industrial hygiene (IH) services where needed to complete the recommendations.
- b. Use the report to help in correcting all deficiencies noted by the contractor.
- c. Discuss the high lead samples taken inside of the inactive indoor firing range converted into a storage area and locker room with the Safety and Occupational Health Office, the Facility Management Office and the Environmental Office. This is still an IFR. Request help in eliminating possible employee lead exposures. Be prepared to educate personnel on proper housekeeping procedures of the range. Follow NG PAM 385-16, Guidelines for converting indoor firing ranges to other uses and NG PAM 385-15, Policy, Responsibilities and guidelines for housekeeping, rehabilitation and/or conversion of indoor firing ranges.
- d. Consider additional Industrial Hygiene services to monitor operations that were not looked at or surveyed during the contract visit, especially if this will help eliminate health hazards and reduce medical surveillance cost.
- e. To execute your responsibilities in correcting all deficiencies and meeting all standards coordinate with the FMO, the Environmental Office the Occupational Health Nurse and the Occupational Safety and Health Office for technical guidance.
- f. Ensure that the FMO and the Environmental Offices receive a copy of this report.



CF: Safety and Occupational Health Office, ATTN: Non-Responsive 1 National Guard Road, Columbia, SC 29201-4766



September 2, 2005

Non-Responsive

SC Army National Guard Armory 107 Webb Rd. Saluda, SC 29138

RE: Baseline Industrial Hygiene Survey

FINAL REPORT

FOR

BASELINE INDUSTRIAL HYGIENE SURVEY

SOUTH CAROLINA ARMY NATIONAL GUARD

SALUDA ARMORY

SALUDA, SC

DATE:

AUGUST 9,2005

PREPARED BY



CONTENTS

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- 2.0 INSTRUMENTATION
- 3.0 FINDINGS
- 4.0 REFERENCES
 - Attachment 1 HHIM Forms
 - Attachment 2 Laboratory Reports: Deactivated Indoor Firing Range Weapons Vault
 - Attachment 3 Laboratory Reports: Supply air grills offices
 - Attachment 4 Photographs of the Facility
 - Attachment 5 Schematic Drawing of Facility

1.0 INTRODUCTION

At the request of the National Guard Bureau South Region Industrial Hygiene Office, Non-Responsive performed a Baseline Industrial Hygiene Survey at the SC ARNG Saluda Armory. The purpose of the survey was to perform a baseline survey to evaluate health hazards, controls present in the work site, collect lead swipe samples from renovated/inactive or closed Indoor Firing Ranges, Weapons Vault, A/C-Heating System, illumination survey and to make recommendations regarding health hazards associated with the work at the Saluda Armory.

The building is an older one. The facility houses the 122nd Engineer Co. The armory is used by the troops of the 122nd Engineer Co. for their monthly weekend drills.

The 122nd Engineer Co. with about 160 troops had 4 full time AGR personnel at the time of the survey. The AGR employees are assigned to perform administrative duties Monday-Friday 7:30am-5: 00pm with one day of every other week. The facility houses administrative areas, a drill hall, classrooms, a supply room, a weapons vault, a boiler room, a kitchen, and a deactivated Indoor Firing Range. The kitchen is used to cook for the troops at the time of the survey. It was clean but several light fixtures were out. The unit was getting ready for deployment the day of the survey. Personnel reported that there are water leaks from the roof in the drill hall and the locker room. It is worst as expected when it rains hard for long periods of time. Stained and missing ceiling tiles were found in the locker room (See pictures). A schematic drawing of the facility can be found in Attachment 5.

The facility was visually examined and personnel consulted to assess potential hazards present. Health Hazard Information Modules were completed. Illumination survey was performed throughout the facility.

2.0 INSTRUMENTATION/CALIBRATION

The following instrumentation was used to obtain light measurements. The instrument used has been calibrated and was operated according to the manufacturer's recommendations:

SPER SCIENTIFIC Light Meter

3.0 FINDINGS

Illumination

Illumination levels were recorded in administration offices, classroom, the drill hall and the supply room. Light measurements were below IES guidelines at the Recruiter office 1 with several light bulbs out, the Classroom 1 (several light bulbs out), Operations office and the 3rd Platoon room- Classroom 3. The other areas tested were within IES minimum standards. See Light Readings Table at the end of this section.

Administration

Personnel perform administrative duties that consist of reading, handling and generating paper work. Computer use comprises a large portion of the working day, four to five hours per day. This continuous use of computers can in the long run lead to eyestrain and hand/wrist soreness. Personnel reported no health problems associated with the job at this time.

Motor Pool

The motor pool is located behind the building. It is fenced and locked. There are a lot of vehicles among them graders, trailers, 5T trucks, 2.5T trucks, 20T trucks, bulldozers, loaders, SEE (excavators) and several other types of vehicles. All the vehicles are located in the fenced area. PMCS are performed at the armory on weekend drills. The unit has four technicians who direct this operator level maintenance. When major repairs are needed the vehicles are taken to the OMS facility.

Drill Hall

The Drill Hall is located in the center of the building. It is used primarily for formation on weekend drills. The Drill Hall is used to clean weapons about once a year. Air exhaust ventilation fans, located at the roof at each end of the room, are turned on. At the time of the survey both air exhaust ventilation fans were working. Older tables are used to clean the weapons. Tables are usually cleaned afterwards. They have newer plastic tables that are only used to eat. The unit has a weapons cleaning machine. It is a self contained unit that pumps the cleaning fluid (CLP) into a tray, where rags are used to clean the weapons. The Drill Hall is rented occasionally for banquets or crafts shops. Renters bring their own food. The kitchen may be used to hold the food and to use the ice machine. Somebody from the unit is always present to supervise the cleaning after the activity is finished.

Boiler Room

There is a metal boiler in the room. There is also a newer heating unit in the room that is used now to warm the armory. Personnel stated that it works well during the winter months.

Deactivated Indoor Firing Range

A deactivated Indoor Firing Range (IFR) has been converted into a storage area and locker room towards the rear. The backstop and sand are still present. A wood floor partially covers the sand. Personnel reported that the IFR was probably cleaned about 10 years ago. Six wipe samples were taken from the IFR. Three of the six samples were above the clearance level of 200ug/ft2. See table 1 for results.

Table 1

Sample Number	Sample Location	Results
55	Bullet backstop, right side	692ug
56	Bullet backstop, left side	1470ug
57	Floor in front of bullet backstop, wood frame floor	145ug
58	Floor in front of bullet backstop, concrete floor	462ug
59	Item stored in IFR	189ug
60	Wall next to entrance/exit door	53ug
61	Blank	BLR

Weapons Vault

The Saluda Armory has a weapon storage vault located in the Supply Room. Personnel stated that accountability and issuing of weapons are performed in this area. Weapons are cleaned about once a year in the Drill Hall with the air exhaust

ventilators turned on in the Drill Hall. Self contained weapons cleaning unit is used to clean weapons. This machine is assigned to the OMS facility located behind the armory. When it is needed the shop fills the tank and it is brought to the armory. After they finish, the machine is taken back to the OMS for disposal and storage. The dehumidifier in the weapons vault was working the day of the survey. A hose connected to the dehumidifier drains the water outside the vault. Four wipe samples were taken from the weapons vault racks. One of the samples was above the clearance level of 200ug/ft2 although another reading was 199ug. See table 2 for results.

Table 2

Sample Number	Sample Location	Results
51	Weapons Vault Racks (A)	37ug
52	Weapons Vault Racks (B)	142ug
53	Weapons Vault Racks (C)	292ug
54	Weapons Vault Racks (D)	199ug
61	Blank	BRL

A/C System

Central A/C unit is used to cool the administration offices. The supply room and the classroom have window A/C units. The filter was clean and is regularly changed. Seven swipe samples were collected from the supply air grills in the offices occupied by personnel of the armory and the filter. All samples were below the clearance level of 200 ug/ft2.

Table 3

Sample Number	Sample Location	Results
44	Training NCO Office Non-Responsive	BRL
45	Recruiter Office	BRL
46	Readiness NCO Office	BRL
47	Adm. NCO Office Non-Responsive	BLR
48	Supply Sgt. Office Non-Responsive	BLR
49	A/C filter Supply side	BLR
50	A/C filter Fan side	40ug
61	Blank	BLR

Material Safety Data Sheets

There is no MSDS Book in the armory. There is no flammables cabinet in the facility. The weapons cleaning solution is stored at the OMS. There was no sign found at the facility to inform personnel and troops about the location of the MSDS book or sheets in case of emergency. The supply Sgt. was not present the day of the survey.

Light Readings

Light measurements were taken in various locations throughout the facility. The results were compared to guidelines recommended by the Illuminating Engineering Society (IES). The results of the survey are shown in Table 4.

Table 4

Location	Light Reading (footcandles)	IES Recommendation (footcandles)
ADO Readiness NCO Office Non-Responsive	52-123 (Avg. 79)	50-100
ADO Training NCO Office	60-87 (Avg. 74)	50-100
ADO Supply Room Office, Non-Responsive	61-114 (Avg. 79)	50-100
ADO Supply Room (Storage)	7-100 (Avg. 46)	20
Adm. Office Non-Responsive	38-62 (Avg. 53)	50-100
Classroom 1	11-75 (Avg. 39)	50-100
Classroom 2	40-102 (Avg. 64)	50-100
ADO Recruiter office 1	16-40 (Avg. 30)	50-100
ADO Recruiter office 2	73-114 (Avg. 88)	50-100
Operations	13-70 (Avg. 33)	50-100
3 rd Platoon room (classroom 3)	16-58 (Avg. 39)	50-100
Drill Hall	40-135 (Avg. 89)	30

Light measurements were below IES guidelines at the Recruiter office 1 with several light bulbs out, the Classroom 1 (several light bulbs out), Operations office and the 3rd Platoon room- Classroom 3. The other areas tested were within IES minimum standards. Consideration should be given to provide supplemental lighting in those areas that were below the recommended standard and to replace burned out bulbs. ANSI RP7-1991.

4.REFERENCES

- Guide to Occupational Exposure 2000, American Conference of Governmental Industrial Hygienists (ACGIH), Cincinnati, Ohio.
- American National Standards Institute (ANSI), /Illuminating Engineering Society (IES), Industrial Lighting 1991.
- Title 29, Code of Federal Regulations (CFR). 1999, revision, Part 1910.
 Occupational Safety and Health Standards

- AR 40-5, Preventative Medicine, 15 October 1990.
- AR 385-10, The Army Safety Program, 23 May 1988.
- National Safety Council, Fundamentals of Industrial Hygiene, 4th edition, 1996.
- AR 385-16, National Guard Pamphlet, Safety Guidelines for Converting Indoor Firing Ranges to Other uses.
- TB MED 503, The Army Industrial Hygiene Program, February 1985.
- Department of the Army Pamphlet (DA PAM) 40-501,27 August 1991, Hearing Conservation.
- Title 29 CFR, Part 1910.1200, The Hazard Communication Standard.



RECOMMENDATIONS

- Provide supplemental lighting in those areas where light measurements were below the recommended standard (as represented in Table 3). Replace burned out light fixtures in the Classroom 1, Supply Room storage area, the kitchen and the Recruiter office 1 (See sketch).
- Recommend that when using computers for extended periods of time, personnel should take occasional breaks and change position to minimize the possibility of eyes and/or hands/wrist injury.
- Continue to ensure that weapon maintenance and cleaning is done in a well-ventilated area. Continue to practice good personal hygiene by washing hands after handling and cleaning weapons and ammunition. Ensure that the weapons racks are well cleaned before placing them back in the vault.
- A request should be submitted to the appropriate state office to repair the roof
 in the locker room and to replace the missing and stained ceiling tiles.
- An MSDS book should be developed from the MSDS forms and kept at the facility.
- Ensure that personnel and troops have knowledge of the location of the MSDS book. And is enrolled hazardous materials safety training.
- That the state Occupational Safety and Health office review the lead wipe clearance sample results of this facility to determine if the IFR will need further decontamination.

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· PRIVACY ACT STATEMENT

Title & U.S. Code, Section 301: Executive Order 2397 authorizes the use of your Social Security Number as a identification number. The purpose of this information is to identify and monitor data relating each DA civilian employee exposed to a hazardous workplace or operation. The use of this information is to provide histories of exposure for any given worker.

Disclosure of your Social Security Number is not mandatory; however, nondisclosure may result in antimety provision of proper medicul munitoria

Signature

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· PRIVACY ACT STATEMENT

Title 5 U.S. Code. Section 301: Executive Order \$397 authorizes the use of your Social Security Number as a identification number. The purpose of this information is to identify and monitor data relating each DA civilian employee exposed to a hazardous workplace or operation. The use of this information is to provide histories of exposure for any given worker.

Disclusure of your Social Security Number is not mandatory; however, nondisclusure may result in antimaly provides of proper medical muniforms.

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· PRIVACY ACT STATEMENT

Title 6 U.S. Code. Section 301: Executive Order \$397 sutherizes the use of your Social Security Number as a identification number. The purpose of this information is to identify and monitor data relating each DA civilian amployee exposed to a hazardous scattering of exposure for any sizes worker.

Disclosure of your Social Security Number is not mandatory; however, nondisclosure may result in antimety provision of proper medical maniform

Signature

Analytical Environmental Services, Inc.

Date: 8/17/2005

TOTAL LEAD IN WIPE SAMPLES N7082

CLIENT:

Non-Responsive

Lab Order:

0508739

Project: Delivery Order:

Saluda SC Armory

Date Received: 8/12/2005 3:15 PM

Matrix:

Wipe

PO No:

Laboratory ID	Client Sample ID	Results	Units	Report Limit.	DF	Date Collected	Date Analyzed	Analyst
0508739-001A	#51	37	μg, Total	20	1	8/11/2005	8/16/2005	VA
0508739-002A	#52	142	μg, Total	20	1	8/11/2005	8/16/2005	VA
0508739-003A	#53	292	μg, Total	20	1	8/11/2005	8/16/2005	VA
0508739-004A	#54	199	μg, Total	20	1	8/11/2005	8/16/2005	VA
0508739-005A	#55	692	μg, Total	20	1	8/11/2005	8/16/2005	VA
0508739-006A	#56	1470	μg, Total	20	1	8/11/2005	8/16/2005	VA
0508739-007A	#57	145	μg, Total	20	1	8/11/2005	8/16/2005	VA
0508739-008A	#58	462	μg, Total	20	1	8/11/2005	8/16/2005	VA
0508739-009A	#59	189	μg, Total	20	1	8/11/2005	8/16/2005	VA
0508739-010A	#60	53	μ g , Total	20	1	8/11/2005	8/16/2005	VA
0508739-011A	#61	BRL	μg, Total	20	1	8/11/2005	8/16/2005	VA

Qualifiers:

BRL - Not Detected at the Reporting Limit

DF - Dilution Factor

Analytical Environmental Services, Inc.

Date: 8/17/2005

TOTAL LEAD IN WIPE SAMPLES N7082

CLIENT:

Project:

Saluda SC Armory

Delivery Order:

PO No:

Lab Order:

0508604

Date Received:

8/12/2005 3:15 PM

Matrix: Wipe

Laboratory ID	Client Sample ID	Results	Units	Report Limit.	DF	Date Collected	Date Analyzed	Analyst
0508604-001A	#44	BRL	μg, Total	20	1	8/11/2005	8/16/2005	VA
0508604-002A	#45	BRL	μg, Total	20	1	8/11/2005	8/16/2005	VA
0508604-003A	#46	BRL	μg, Total	20	1	8/11/2005	8/16/2005	VA
0508604-004A	#47	BRL	μg, Total	20	1	8/11/2005	8/16/2005	VA
0508604-005A	#48	BRL	μg, Total	20	1	8/11/2005	8/16/2005	VA
0508604-006A	#49	BRL	μg, Total	20	1	8/11/2005	8/16/2005	VA
0508604-007A	#50	40	μg, Total	20	1	8/11/2005	8/16/2005	VA

Qualifiers:

BRL - Not Detected at the Reporting Limit

DF - Dilution Factor



SALUDA, SC ARMORY

DRILL HALL



Post t NGB FOIA Reading Room May, 2018



HEATING UNIT

HOT WATER HEATER



Post t NGB FOIA Reading Room May, 2018



STAINED CEILING TILES, LOCKER ROOM

MISSING CEILING TILE, LOCKER ROOM





IFR FRONT VIEW, BULLET BACKSTOP

IFR, REAR VIEW

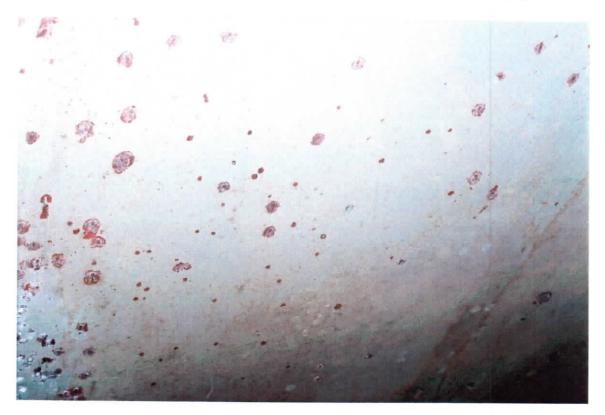


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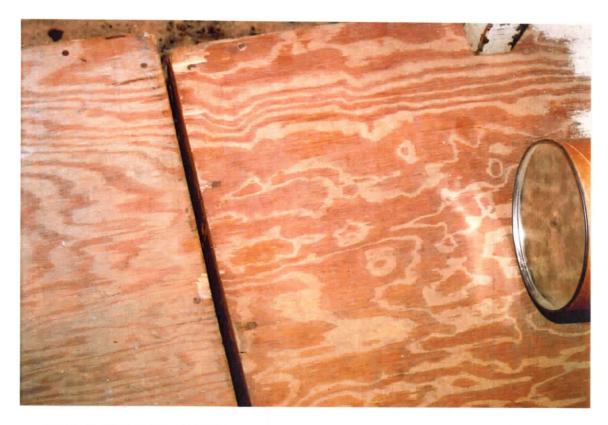


IFR, SAMPLE AREA, BACKSTOP (R)

IFR, SAMPLE AREA, BACKSTOP (L)



Post t NGB FOIA Reading Room May, 2018



IFR, SAMPLE AREA, WOOD FLOOR IN FRONT OF BACKSTOP

IFR, SAMPLE AREA, CONCRETE FLOOR IN FRONT OF BACKSTOP



Post t NGB FOIA Reading Room May, 2018

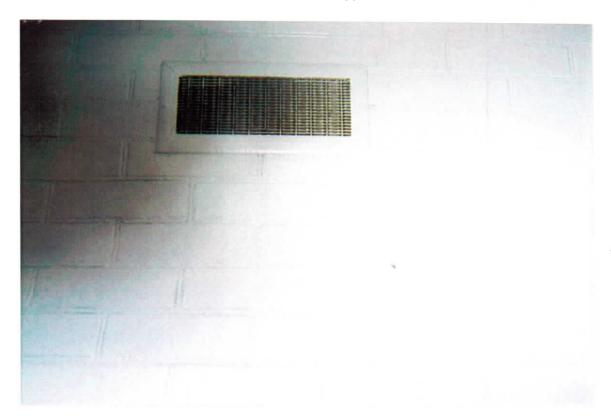


IFR BACKSTOP, LEFT

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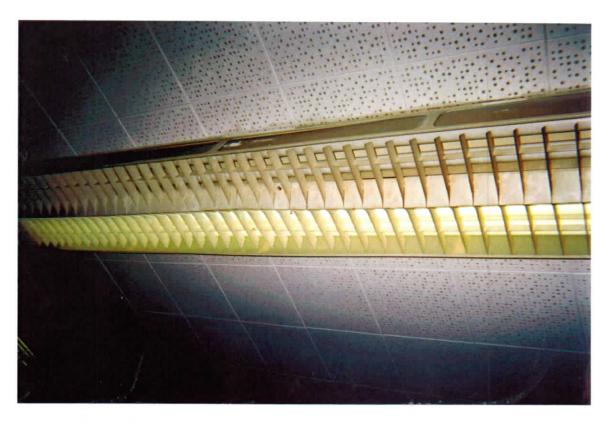


Post t NGB FOIA Reading Room May, 2018



A/C OUTLET GRILL

LIGHT BULBS OUT, RECRUITER OFFICE



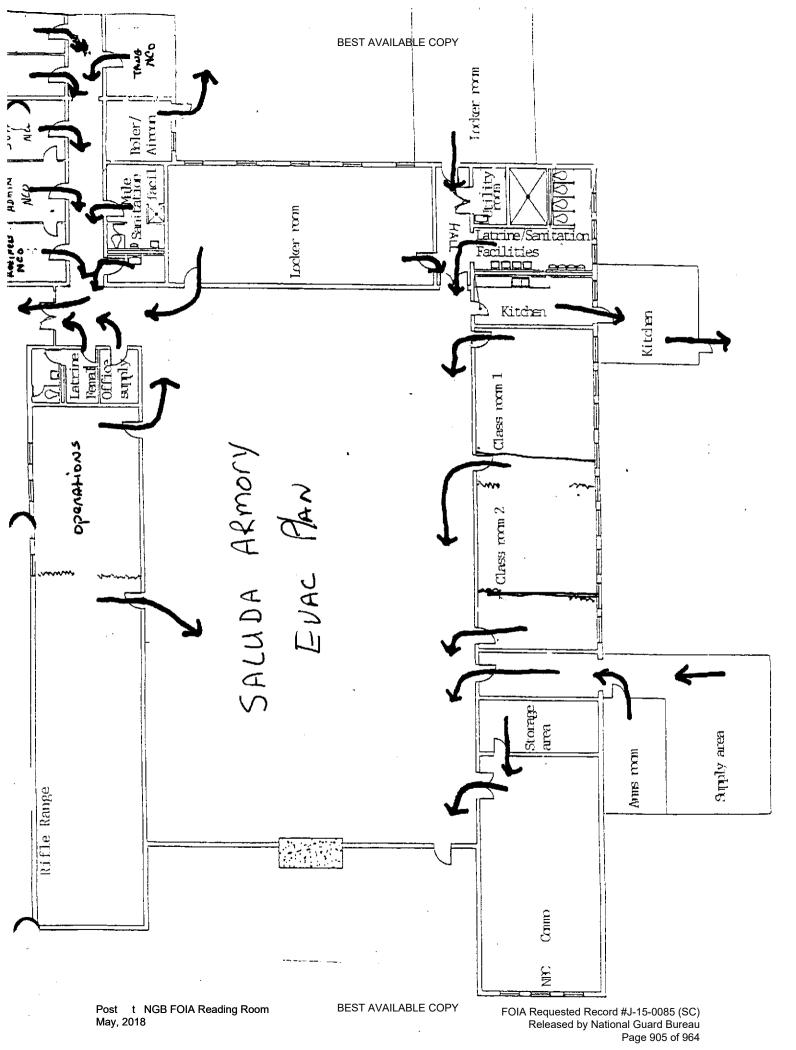
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MOTOR POOL



Post t NGB FOIA Reading Room May, 2018



NATIONAL GUARD REGION SOUTH INDUSTRIAL HYGIENE OFFICE 510 PLAZA DRIVE, SUITE 1530 COLLEGE PARK, GA 30349

NGB-AVN-SI

17 March 2003

MEMORANDUM FOR The South Carolina Army National Guard, ATTN: Non-Responsive Armory Supervisor, C Company 178th Engineers Battalion, 620 John G. Rose Drive, Timmonsville, South Carolina 29161.

SUBJECT: Industrial Hygiene Survey of the Timmonsville National Guard Armory, Timmonsville, South Carolina.

- 1. References.
 - a. Report submitted 14 March 2003, Industrial Hygiene Survey, OSHEA II Consulting.
- b. OSHA Standards 29 CFR (Code of Federal Regulations), General Industry, revised 1988.
 - c. AR 40-5, Preventive Medicine, October 1990.
 - d. AR 11-34, 15 February 1990, The Army Respiratory Protection Program.
 - e. AR 385-10, 23 May 1988, Army Safety Program.
- f. Department of the Army Pamphlet (DA PAM) 40-501, 27 August 1991, Hearing Conservation.
 - g. TB MED 530, The Army Industrial Hygiene Program.
- h. Title 29 Code of Federal regulation (CFR), 1989 rev, Part 1910.94 (c) (6) Table G-10, Ventilation.
- i. Industrial Ventilation, 21st ed, 1992, American Conference of Governmental Industrial Hygienist, Cincinnati, Ohio.
- j. IES Lighting Handbook, Application Volume, 1981, Illumination Engineering Society of North America.
- 2. General.
- a. At the request of the South Carolina State Safety and Occupational Health Office and the Region South Industrial Hygiene Office a Service Contract was put together to conduct Health Hazard Information module (HHIM) Field surveys and IH surveys at the South Carolina National Guard Armories.
 - b. Non-Responsive of OSHEA II Consulting conducted the survey.

- Findings. All HHIM field survey forms and survey findings of the report are enclosed. (See ENCL. 1)
- 4. Recommendations.
- a. Follow all recommendations made in reference 1. a., requesting industrial hygiene (IH) services where needed to complete the recommendations.
- b. Request the Facility Maintenance Office (FMO) repair leaks and replace all water damaged items in the Armory. Ignoring this problem could lead to Indoor Air Quality and mold problems.
 - c. Use the report to help in correcting all deficiencies noted by the contractor.
- d. Consider additional Industrial Hygiene services to monitor operations that were not looked at or surveyed during the contract visit, especially if this will help eliminate health hazards and reduce medical surveillance cost.
- e. To execute your responsibilities in correcting all deficiencies and meeting all standards coordinate with the FMO, Occupational Health Nurse and the Occupational Safety and Health Office for technical guidance.



CF: Safety and Occupational Health Office, ATTN: Non-Responsive 1 National Guard Road, Columbia, SC 29201-4766

Safety and Occupational Health Office, ATTN: Non-Responsive 1 National Guard Road, Columbia, SC 29201-4766

OSHEA 171 Industrial Hygiene Consulting

> South Carolina Army National Guard John C. Rose Armory Timmonsville, South Carolina

OSHEA II* Industrial Hygiene Consulting * P.O. Box 35669 * Fayetteville, N.C. * 28303

MEMORANDUM FOR: South Carolina Army National Guard: ATTN: Armory Supervisor, C Company 178th Engineers Battalion, Timmonsville, South Carolina 29161

SUBJECT: Baseline Industrial Hygiene Health Hazard Information Module (HHIM) Survey of C Company 178th Engineers Battalion, 620 John G. Rose Drive, Timmonsvillle, South Carolina 29161 10, February 2003

1. REFERENCES

- a. Title 29 Code of Federal Regulations (CFR) part 1910, Occupational Safety and Health Administration (OSHA).
 - b. Army Regulation 385-10, The Army Safety Program.
- c. Army Regulation 11-34, February 1990, The Army Respiratory Protection Program
 - d. Technical Bulletin (TB MED) 503, 1 February 1985, The Army Industrial Hygiene Program
- e. Industrial Ventilation, 22nd Edition, The American Conference of Governmental Industrial Hygienist (ACGIH), Cincinnati, Ohio.
- f. National Guard Regulation 385-10, 20 December 1989, Army National Guard Safety and Occupational Health Program.
- g. IES Lighting Handbook, Application Volume 2000, Illumination and Engineering . Society of North America.
- h. Department of the Army Pamphlet (DA PAM) 40-501, 27 August 1991, Hearing Conservation Program.
- i. Technical Bulletin (TB MED) 503, 1 February 1985, The Army Industrial Hygiene Program.
 - j. Army Regulation (AR) 40-5, 15 October 1990, Preventive Medicine.

Oshea II Industrial Hygiene Consulting IH Survey 12 Feb 03 John C Roses Armory Timmonsville, South Carolina

- 2 .GENERAL: At the request of Non-Responsive National Guard Bureau South Regional Industrial Hygienist, Atlanta, Georgia, a Health Hazard Information Module Baseline Survey was performed at C Company 178th Engineers Battalion, February 2003. The purpose of this survey was to evaluate health hazards, existing controls in the work site, perform ventilation surveys, illumination surveys, perform a baseline study, determine atmospheric sampling protocol during all maintenance operations in accordance with (IAW) references 1a through 1j and collect bulk samples.
- 3. **INSTRUMENTATION:** The following survey instrumentation was provided by the National Guard Bureau and was utilized to obtain noise, illumination or ventilation measurements. All equipment was used according to manufacturer/ manual recommendations. All equipment was calibrated prior to and after use.

Nomenclature	Model No.	Serial No.
Bruel & Kajer sound Analyzer 10/10/02	2236	1942775 CAL
Bruel & Kajer Sound Analyzer Calibrator CAL 02/03/02	4231	C19403
Alnor Velometer Jr. Meter CAL 09/10/02	V81001	4398
Sper Scientific light meter CAL 03/08/02	840020	025433

Oshea II Industrial Hygiene Consulting IH Survey 12 Feb 03 John C Rose Armory Timmonsville, South Carolina

FINDINGS:

- a. **Armory Site Description:** The armory is occupied by C Company 178th Engineers Battalion. There are two full time individuals, who perform administrative duties. The armory was constructed in 1986. It is approximately 17,502 square feet in size. It contains offices, administrative areas, one combined kitchen/mess hall, supply rooms, and weapons room/vault. This armory was found in good condition. Administrative area of the armory have carpeted floors. Tile was located in hallways and the class rooms. There was evidence of some water damage on ceiling tile and in hallways. There was no visual evidence of friable ceiling or floor tile. Outside, behind the building is a Petroleum, Oil, Lubricant (POL) storage Room. A list of its contents is located on the door of the shed. Enclosure No. 2 contains a drawing of the Armory's floor plan. The armory contained a converted indoor firing range which was converted to a storage area. The armory contained a furnance room which had pipes wrapped in a fiberglass wrap. There was no friability in this wrap.
 - **b. Scope of Survey:** The armory was visually observed. Interfacing with the armory's NCO was necessary to fully assess all potential health hazards. Enclosure No. 1 contains pictures of the facility's interior and exterior.
- c. **Material Safety Data Sheets:** Material Safety Data Sheets (MSDS) were available and readily assessable for hazardous materials used at this facility. Documentation of materials in the POL shed was listed on the cabinets and MSDS sheets were available as well. A list of hazardous materials/chemicals used at this facility is contained in Enclosure No. 3. It was stated that HAZCOM training had been performed prior to this survey.
- d. **Hearing Conservation Program**: All employees are enrolled in the Hearing Conservation Program and receive annual audiograms.
- e. **Illumination:** Illumination levels were recorded in all administrative areas, classrooms, training rooms and supply areas throughout the Armory. In every area bulbs were found blown, missing or fuse problems existed. See chart for specific location of measurements.

Oshea II Industrial Hygiene Consulting IH Survey 12 Feb 03 John C Rose Armory Timmonsville, South Carolina

Illumination levels

Location	Reading in Foot candles	At, Above or Below Standard
Administrative Area	as 40.0—44.4	Below
Hallway areas	18.0—25.1	Below
Kitchen	35.3—35.9	Below
Food Prep Area	36.5—37.1	Below
Operations	20.5—21.1	Below
NBC Room	17.4—20.3	Below
Drill Hall	18.6—25.0	Below
Classroom	67.4—70.8	Above

The readings are below the recommended IES lighting standard of 50 to 100 foot candles. The classroom illumination levels were above the recommended standard.

- e. Administrative Areas: Personnel perform administrative duties that consist of reading, handling and generating paper work. Employees use computers and answer phones also.
- f. Wipe sampling was performed of the drill hall and the kitchen area near the drill hall floor. Wipe sampling was also performed in the weapons vault because SSG Robinson expressed concerned that there may be lead residue in the vault from fired weapons which had been placed in vault without being cleaned. The results of all sampling will be disclosed later in this report.
- g.. Motor Pool Area: The motor pool is a fenced-secured area outside. Vehicles are lined up in rows and started up periodically. They are used to run errands or transport supplies. Personnel at this armory perform no maintenance operations or repairs on vehicles. The OMS shop mechanics come to the armory and perform maintenance and repairs on the armory's vehicles at the shop located behind the facility.
- f. Indoor Firing Range: The firing range was converted years ago according to personnel at the armory. The bullet backstop had been removed. A chain link style of fences was used to fabricate cages from ceiling to floor to store equipment. Samples could not be collected from the converted indoor firing range area because SSG Sowell did not have the keys to unlock the door.

Oshea II Industrial Hygiene Consulting IH Survey 12 Feb 03 John C Rose Armory Timmonsville, South Carolina

- g. A noise level survey was not performed of the vehicles because they are a part of OMS and a noise level survey will be performed during the annual survey of that shop. Noise hazard caution signs are posted on vehicles and hearing protection is available and easily assessable for personnel and visitors.
- h. Arms Room/Weapons Vault: Weapons are stored in the armory's vault. It is reported that no weapon's cleaning is performed inside of the weapons storage vault. It was also stated that weapons are cleaned before being placed in the arm's vault
- i. Weapons Solvent Bath: During drill training the solvent bath is used. The fluid in the solvent bath tank is warmed and weapons are cleaned on the drill hall floor. Full time Personnel place their weapon in the cleaning solution for a few minutes, remove it and finish the cleaning process. It is stated that it is a two- part process. The cleaning process takes less than thirty minutes.
- All sample results taken in the armory are listed in the chart below.

Sample No.S	Location taken	Results
0212075	Drill Hall (DHS)	BRL
0212076	Drill Hall(DHS)	BRL
0212077	Drill Hall (DHS	BRL
0212078	Kitchen (supply)	BRL
0212079	Kitchen (Fan side)	BRL

These samples were taken in relation as to the armory's ventilation system for the analysis of lead. All (BRL) readings were Below Reading Limits.

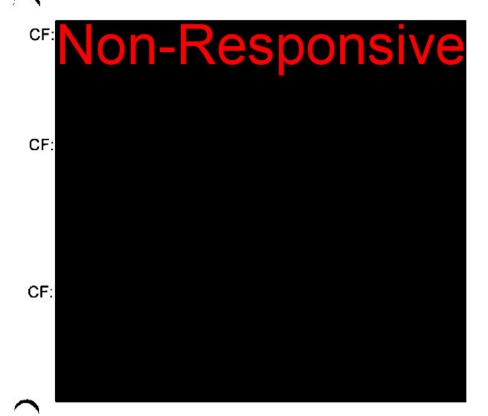
Oshea II Industrial Hygiene Consulting IH Survey 12 Feb 03 John C Rose Armory nmonsville, South Carolina

RECOMMENDATIONS

- a. Hearing Conservation Program: Continue with annual audiometric testing for relevant personnel exposed to noise levels above 85 dBA in accordance with reference 1h.
- Hazardous communication or HAZCOM refresher training: Continue with annual HACOM training. Dated and signed records should be maintained of all HAZCOM training administered.
- c. Fluorescent bulbs need to be replaced immediately after they have become blown to give the maximum amount of light in classroom, offices, and training areas in accordance with reference 1h. A work order should be submitted to the appropriate office requesting repair/ replacement of fuses in non-functioning light fixtures.
- f. Weapons are never to be cleaned inside the weapon's storage vault or any other enclosed area without adequate ventilation in accordance with references 1a and 1c. Personal Protective equipment, such as goggles, should be worn to protect eyes from splash hazards and gloves should be worn to prevent solvent absorption through the skin.
- g. Based on the limited, short duration, nature, of contact cleaners, and solvents used at this armory, there is no need for a Respiratory Protection Program, neither is there a need to perform atmospheric monitoring during weapons cleaning if windows and doors are open to circulate air during weapons cleaning.



Survey 12 Feb 03 John C Rose Armory
...mmonsville,, South Carolina



HEA II INDUSTRIAL HYGIENE CONSULTING RVEY OFJohn C Rose Armory, Timmonsville, South Carolina

Table of Contents

Interior and exterior photographs With identified areas Enclosure No.1

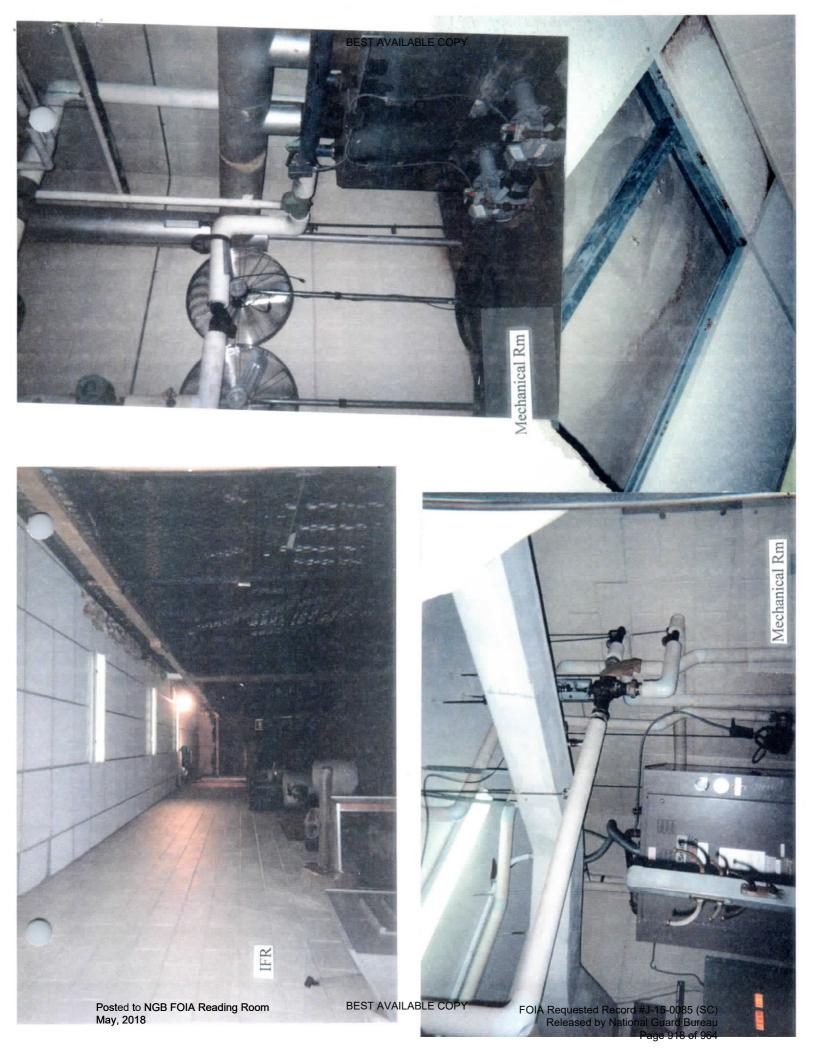
Enclosure No.2 Armory's Floor Plan

Enclosure No. 3 Hazardous Material Inventory

Enclosure No. 4 Full time Personnel

nclosure No. 5 **HHIM Sheets**





Co. C 178th Engineers Battalion has not drafted a floor plan as of 03/13/03

Encl. No 2

Hazardous Material inventory

Scouring powder

Floor wax

Floor Stripper

Hand cleaner

Simple green

Pine oil

break free

Enclosure No. 3

FLAMMABLE CABINET #2

Plint

8010-00-229-7543	BRWN	24	_CNS
8010-00-616-9143	BLK .	<u>ao</u>	CNS
8010-00-935-7079	BLK _	11	CNS
8010-01-331-6119	BLUE	14	CNS
8010-00-848-9272	O DRB		CNS
8010-00-935-7064	RED	15	CNS
8010-00-584-3149	O GRN	1	CNS
8010-01-229-7546	GREEN	11	CNS
8010-00-081-0809	O BRB	2	CNS
8010-01-276-3638	TAN	6	CNS
8010-00-597-7844	BLUE		GAL
8010-00-664-4761	WHT	3	GAL
8040-00-938-6860	ADH	12	CNS
9150-00-823-7860	LUB		CNS

Earch No. 3

rull time Personnel



Enclosure No. 4

HHIMS Industrial Hygiene Survey Form

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HHIMS Industrial P giene Survey Form

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HHIMS Industrial Hyr yne Survey Form

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HHIMS Industrial Hy)ne Survey Form

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HHIMS Industrial Hy pne Survey Form

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HHIMS Industrial Hy)ne Survey Form

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NATIONAL GUARD REGION SOUTH INDUSTRIAL HYGIENE OFFICE 510 PLAZA DRIVE, SUITE 1530 COLLEGE PARK, GA 30349

NGB-AVN-SI

June 19, 2006

MEMORANDUM THRU Non-Responsive, Deputy State Surgeon, South Carolina Army National Guard, 1 National Guard Road, TAG-MP-MSS, Columbia, SC 29201.

TO: The South Carolina Army National Guard Union Armory, ATTN: Non-Responsive Commander, 165 Industrial Park Road, Union, SC 29379.

SUBJECT: Industrial Hygiene Survey of the Union National Guard Armory, Union, South Carolina.

- 1. References.
- a. Report submitted May 2006, Industrial Hygiene Survey, Technical Solutions International, Inc (TSI).
- b. OSHA Standards 29 CFR (Code of Federal Regulations), General Industry, revised 2004.
 - c. AR 40-5, Preventive Medicine, October 1990.
 - d. AR 11-34, 15 February 1990, the Army Respiratory Protection Program.
 - e. AR 385-10, 29 February 2000, Army Safety Program.
- f. Department of the Army Pamphlet (DA PAM) 40-501, 10 December 1998, Hearing Conservation.
 - g. TB MED 530, the Army Industrial Hygiene Program.
- h. Title 29 Code of Federal regulation (CFR), 2004 rev, Part 1910.94 (c) (6) Table G-10, Ventilation.
- i. Industrial Ventilation, 25th ed, 2004, American Conference of Governmental Industrial Hygienist, Cincinnati, Ohio.
- j. IES Lighting Handbook, Application Volume, 1981, Illumination Engineering Society of North America.
- 2. General.
- a. At the request of the South Carolina State Safety and Occupational Health Office and the Region South Industrial Hygiene Office a Service Contract was put together to

conduct Health Hazard Information module (HHIM) Field surveys and IH surveys at the South Carolina National Guard Armories.

- b. TSI conducted the survey.
- Findings. All HHIM field survey forms and survey findings of the report are enclosed. (See ENCL. 1)
- 4. Recommendations.
- a. Follow all recommendations made in reference 1. a., attachment 1 requesting industrial hygiene (IH) services where needed to complete the recommendations.
 - b. Use the report to help in correcting all deficiencies noted by the contractor.
- c. Consider additional Industrial Hygiene services to monitor operations that were not looked at or surveyed during the contract visit, especially if this will help eliminate health hazards and reduce medical surveillance cost.
- d. To execute your responsibilities in correcting all deficiencies and meeting all standards coordinate with the FMO, the Environmental Office the Occupational Health Nurse and the Occupational Safety and Health Office for technical guidance.
- e. Ensure that the FMO and the Environmental Offices receive a copy of this report.
- 4. Please accept the apologies of the Regional Industrial Hygiene Office for getting these reports out so late. This is not our normal practice. We strive to have reports of surveys back to you within 30-45 days of walk thru.

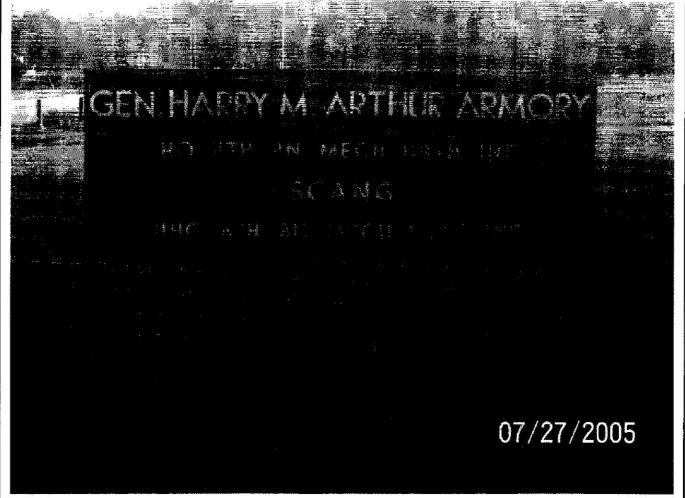


CF: Safety and Occupational Health Office, ATTN: Guard Road, Columbia, SC 29201-4766

Non-Responsive

1 National

Army National Guard Industrial Hygiene Survey



Union Armory

165 Industrial Park Rd. Union, SC 29379

Non-Responsive

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220 Jaysee Court Fayetteville, GA 30215 Phone: (678) 522-1138 FAX: (877) 631-9226

E-mail: info@tsi-cg.com Web: www.tsi-cg.com

17 September 2005

MEMORANDUM FOR: South Carolina Army National Guard, ATTN: Non-Responsi

Commander, HHC(-Det 1) 1-118th In (M), 165 Industrial Park Rd.,

Union, SC 29379

SUBJECT: Industrial Hygiene Survey of Union Armory Army National Guard, Union, South Carolina

BACKGROUND:

Introduction:

At the request of Non-Responsive

Bureau Regional Industrial Hygiene South Office, Atlanta, GA, an initial baseline industrial hygiene survey was conducted at the Union Armory, Union, South Carolina, on 27 Jul 05 as part of the South Carolina Army National Guard Occupational Health Program to identify potential hazards in the workplace. The point of contact for this facility was Non-Responsive

Scope of Work:

The survey consisted of collecting lead wipe samples, bulk asbestos samples (as needed), conducting noise and illumination survey, as well as evaluating the condition of the building, including the airflow of the Heating Ventilation and Air Conditioning (HVAC) System as it relates to indoor air quality. A review of several industrial hygiene programs, such as hazard communication, radiation protection, and personal protective equipment was also performed. A field survey form is completed on all industrial operations at the facility, and the data is contained in this report.

INSTRUMENTATION

The following survey instrumentation was provided by or for the contractor, and was used to obtain lead wipe dust, illumination, ventilation, and noise sample measurements. All noise dosimeter instrumentation was calibrated before and after sampling. All other instrumentation was operated according to manufacture recommendations.

Instrument	Serial Number	Calibration
Extech Heavy Duty Light Meter	2009392	14 July 2005
Bruel & Kjaer Sound Level Meter	HSB090013	14 July 2005
Bruel & Kjaer 4231 Acoustic calibrator	QIB100244	14 July 2005
Alnor-Thermo Anamometer (CompuFlow)	2800	07 June 2005
Ghost Wipe Lead Dust Wipes		

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The armory was built or occupied by the Army National Guard in 1973. Vehicles stored at this facility include dozers, graders, rollers, haulers, HEMMETS, 916 tractor trailer beds, and cranes.

1. HHC(-Det 1) 1-118th In (M), CPT Charles S. Goad, Commander

This unit has ten fulltime personnel providing readiness and other personnel support as follows:



BUILDING CONDITION:

There was water damage to several areas of the ceiling through out the building, which are evidence of roof leaks which are in need of immediate repair. Mildew was also found in some areas of the building. Standing water around electrical breaker boxes is a potential hazard.

LEAD DUST WIPE SAMPLES:

Seventeen lead dust wipe samples were taken, using 12 inch templates. Two samples were above the Army National Guard standard of 200 µg/ft² for surface contamination in and around indoor firing ranges (Army National Guard All States Log Number P01-0075, Policies and Responsibilities for Inspection, Evaluation, and Operation of ARNG Indoor Firing Range (IFR) and Guidelines for IFR Rehabilitation, Conversion, and Cleaning). Pictures of the lead sample wipes were taken (see pictures Union-01 to Union-32). The following table notes where the samples were taken, the sample number and the lead results:

Sample Location.	Sample No.	Results (µg/ft)
Motor Pool Bay 5	1	31
Motor Pool Bay 3	2	BRL
Motor Pool Bay 4	3	20
Motor Pool Office Desk	4	BRL
Vault Shelf	5	29
Vault Rack	6	281
Supply Room Desk	7	BRL
Kitchen Counter	8	BRL
IFR Floor	9	211
IFR Wall	10	85
Blank	11	BRL
Drill Hall near SR entrance	12	BRL
Drill Hall near Main SR Entrance	13	BRL
Drill Hall Center Floor	14	BRL
CPT Office Desk	15	BRL
Blank	17	BRL

Note 1: IFR refers to Indoor Firing Range

Note 2: µg/ft2 refers to micrograms or one millionth of a gram per square foot

ADMINISTRATIVE OFFICES

There are several administrative offices in this facility, where personnel use computer systems, file, read, write and perform other administrative tasks as necessary. Computer use occurs throughout the day. Illumination levels range from 0.9 to 82.6 Foot Candles (FC's).

AIRFLOW / VENTILATION

The facility utilizes window and wall air conditioning units to circulate air throughout the building. Air flow samples were taken from strategic window unit location points during the survey and the results are as follows:

Location	Sample Readi	ng (FPM) Area of grid
Class Room A	413	6"x3'
Readiness NCO HQ Office	225	6"x3'
S1 Office Admin	360	6"x3'
S4 Office Admin	250	6"x3'
Kitchen	162	6"x3"
Supply Room	480	6"x3'

SUPPLY ROOM(S) AND VAULT'S ABLE COPY

This facility has one supply room, with several storage areas. The supply officers use the computer an average of two hours per day. An inventory of all chemicals is maintained by the safety officer(s). A Material Safety Data Sheet (MSDS) book is maintained and kept in the office with a table of contents, and/or is cross-reference to the chemical inventory sheet for easy accessibility by all personnel in case of emergency. All employees must be initially trained in the Federal Hazardous Communication Program IAW 1910.1200. Heavy lifting is performed with the aid of hand jacks, lifts, and other personnel.

KITCHEN / MESS HALL

The kitchen is currently used for cooking and the surfaces are also used to prepare sandwiches and other light meals. The illumination levels range from 9.5 to 17.7 FC's.

DRILL HALL

Personnel officially use the drill hall two days per month. It is occasionally rented out for community events. Weapons cleaning take place by units during drill weekends, usually about twice per year. Ceiling lamps were in good working order. Illumination levels ranged from 20.8 to 41.3 FC's.

Due to low noise levels (administrative and drill areas) there were no requirements for a hearing conservation program.

INDOOR FIRING RANGE (IFR)

This IFR is now used as a storage room.

The date of the last retrofit and clearance for this IFR was over twenty years ago.

The Army National Guard All States Log Number P01-0075, Policies and Responsibilities for Inspection, Evaluation, and Operation of ARNG Indoor Firing Range (IFR) and Guidelines for IFR Rehabilitation, Conversion, and Cleaning requires a limit of 200 micrograms per square foot for surface contamination in and around indoor firing ranges. The lead wipe sample readings for the IFR ranged from BRL_µg/ft² to 211 µg/ft²:

MOTOR POOL

The motor pool building was built approximately thirty years ago. The building is used on a daily basis, and once per month during drill weekends. Eight fire extinguishers were found in the area. The annual certification is due in June 2006 and the monthly inspection was last logged for June 2005.

A plumbed eyewash and shower are available. The shower is connected to an alarm. Inspection Log is available to record periodic flushing of the system to ensure water purity. A petroleum, oil, and lubricant (POL) storage building is available with a fire suppression system.

Exhaust fans in the area exhaust an average of approximately 1110 fpm. Maintenance personnel usually work outside, but work in the bay area during rainy or cold days.

Carbon Monoxide units are available to alarm in case of dangerous levels when doors are closed, or when vehicles are left idle close to the building. The following airflow sample was taken in the Motor Pool office:

Location	Sample Reading (FPM)	Area of grid
Motor Pool Office	165	6"x3'

Hearing Conservation Program

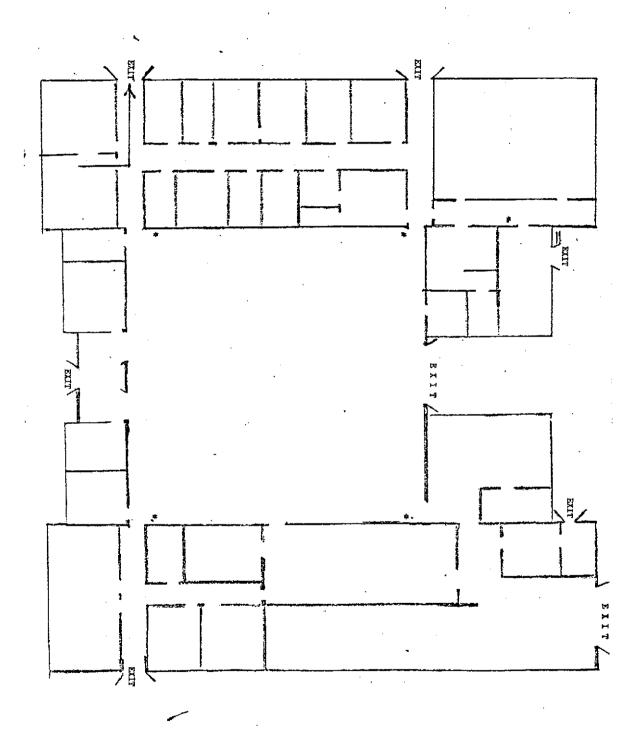
A noise survey was performed in the maintenance area while running a HEMMIT vehicle. Noise levels measured 81.3 dBA, approximately ten feet from the source. The area is marked as noise hazardous.

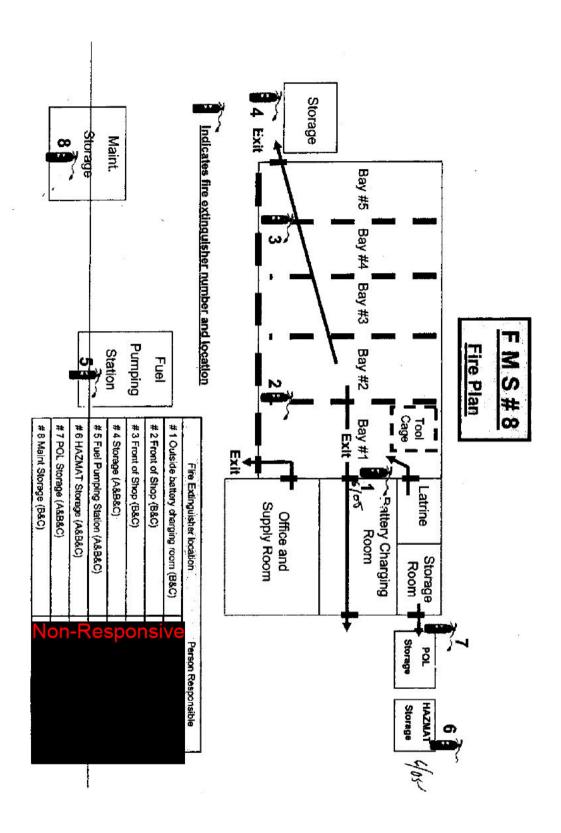
TECHNICAL ASSISTANCE:



APPENDIX A - ADDITIONAL DATA

FACILITY DIAGRAM:





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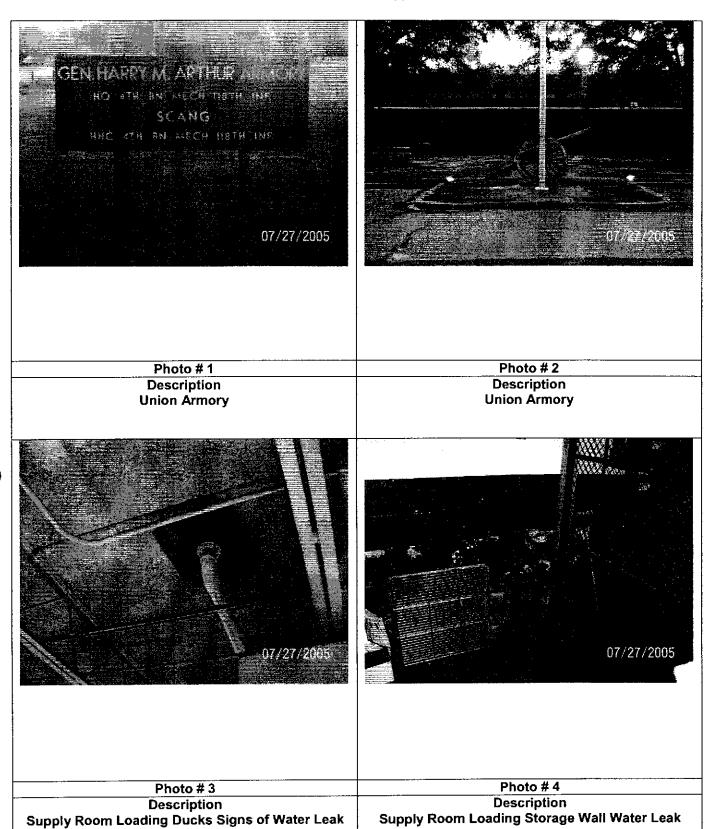
No.	Location	Description	Picture#
1	Supply Room Loading Deck	Signs of water leak	Picture 3
2	Supply Room Loading Storage Wall	Signs of water leak	Picture 4
3	Class Room A	Signs of water leak	Picture 5
4	Class Room B	Signs of water leak and mildew	Picture 6
5	HQ Offices Entrance	Signs of water leak	Picture 7
6	Readiness NCO Office	Signs of water leak	Picture 8
7	Maintenance Trainer Office	Signs of water leak and mildew	
8	Company Side Hallway	Signs of water leak and mildew	Picture 22
9	Lounge Room	Signs of water leak	Picture 31
10	BN Training Room	Signs of water leak	Picture 17
11	S4 Battalion Office	Signs of water leak	
12	Company side Hall	Drain pipe leakage	Picture 30/32
13	S1 Office	Signs of water leak	Picture 9

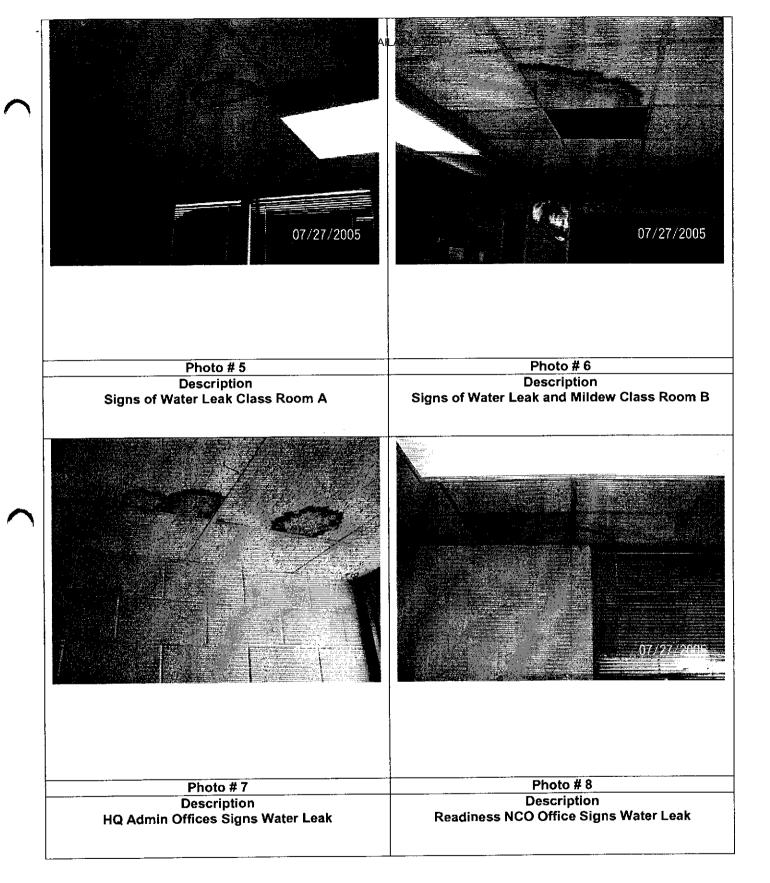
PAINT CHIP LEAD SAMPLE RESULTS

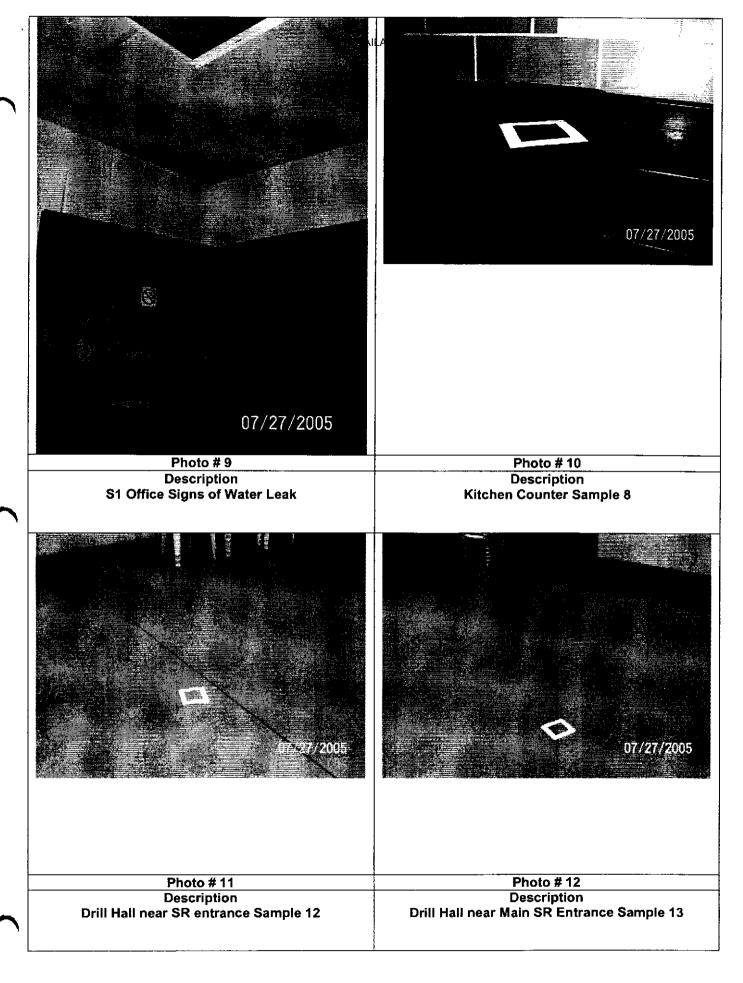
Sample Location	Sample No.	Results (µg/ft²)	::: Remarks;:
Utility Room Paint Chip	16	1.93	

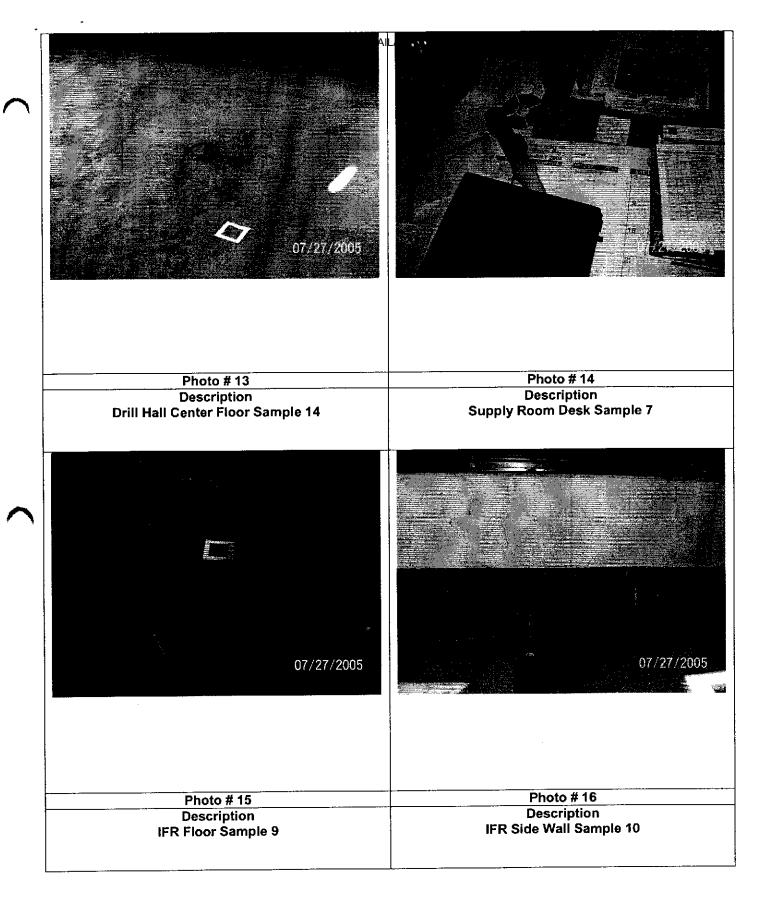
APPENDIX B - Recommendations:

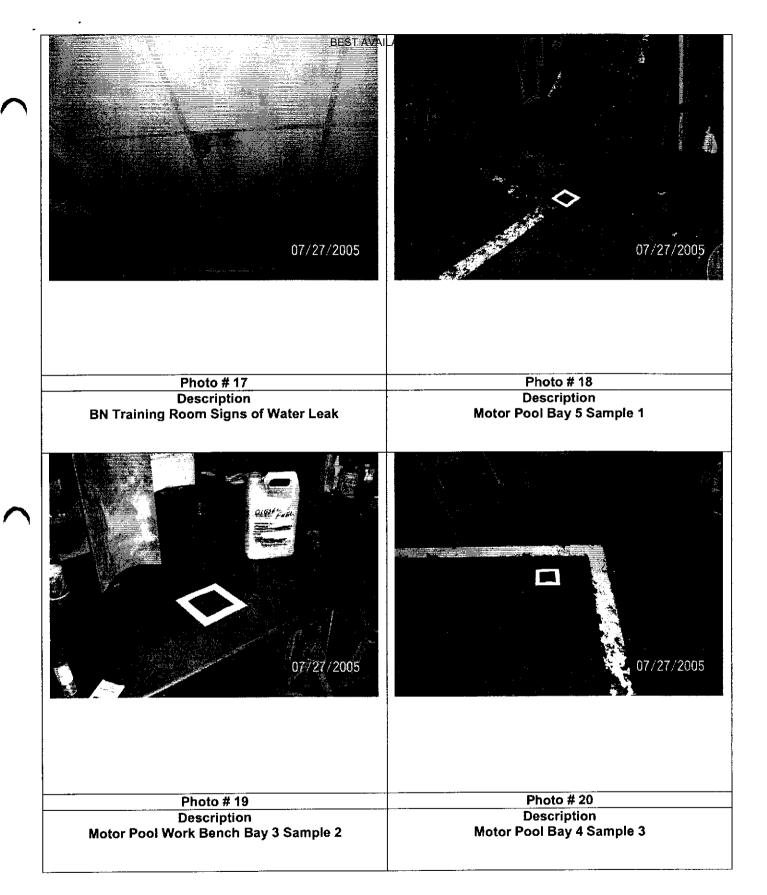
- a. Develop a maintenance schedule for ensuring that filters in the AC units are properly changed, any leaks or standing water are identified, repaired, and prevented, and supply and exhaust grilles are appropriately cleaned. Failure to do so may lead to further indoor air quality issues. The plan should include monitoring, inspecting and cleaning AC components such as air filters, drain pans, heating and cooling coils, the interior of air handling units, fan motors and belts, air humidification, controls and cooling towers. Consult manufacturers' instructions for appropriate maintenance schedules.
- b. Non-porous (e.g., metals, glass, and hard plastics) and semi-porous (e.g., wood, and concrete) materials that are structurally sound and are visibly moldy can be cleaned and reused. Cleaning should be done using a detergent solution. Porous materials such as ceiling tiles and insulation, and wallboards with more than a small area of contamination should be removed and discarded. Porous materials (e.g., wallboard, and fabrics) that can be cleaned, can be reused, but should be discarded if possible. A professional restoration consultant should be contacted when restoring porous materials with more than a small area of fungal contamination. All materials to be reused should be dry and visibly free from mold. Routine inspections should be conducted to confirm the effectiveness of remediation work.
- c. Any initial water infiltration should be stopped and cleaned immediately. An immediate response (within 24 to 48 hours) and thorough clean up, drying, and/or removal of water damaged materials will prevent or limit mold growth. If the source of water is elevated humidity, relative humidity should be maintained at levels below 60% to inhibit mold growth. Emphasis should be on ensuring proper repairs of the building infrastructure, so that water damage and moisture buildup does not recur.
- d. Contaminated materials that cannot be cleaned should be removed from the building in a sealed plastic bag. There are no special requirements for the disposal of moldy materials.
- e. Upgrade lighting measurements as required. Replacing blown or broken lights, painting the walls a light color, cleaning existing light fixtures, rearranging furniture to make better use of available light, and supplemental or task lighting are considerations in increasing available light levels.
- f. An ergonomics survey should be completed for all supply and administrative personnel as a preventative measure to address and document any ergonomic concerns or problems. An emphasis on maintaining neutral postures and proper lifting techniques should be covered.
- g. Material Safety Data Sheets (MSDS) are required to be kept at the primary workplace facility and to be easily accessible in case of emergency. Personnel responsible for these items should receive annual training in the requirements of the Hazardous Communication Program and the appropriate keeping and storage of MSDSs.
- h. Ensure personnel are prohibited from drinking, eating, smoking chewing tobacco and gum, or applying makeup in supply and maintenance areas. Hands should be cleaned with soap and water before eating drinking, eating, smoking, chewing tobacco and gun, or applying makeup. Remove all refrigerators, cups, and other utensils from supply and maintenance areas.
- i. Equipment should not be stored in the area, since stored items can become contaminated with lead dust All stored items should be removed as soon as possible and thoroughly decontaminated before their removal. Consult The Army National Guard All States Log Number POI-0075, Policies and Responsibilities for Inspection, Evaluation, and Operation of ARNG Indoor Firing Ranges (IFR) and Guidelines for IFR Rehabilitation, Conversion, and Cleaning.
- i. Ensure that all noise hazardous machinery and noise hazardous areas are appropriately marked.
- k. Fire extinguisher should be visually inspected on a monthly basis and recorded on service tag.
- Perform noise dosimetry on maintenance personnel during drill weekend, in order to document noise exposure.
- m. Install Carbon Monoxide monitors specifically designed for industrial use in motor pool.

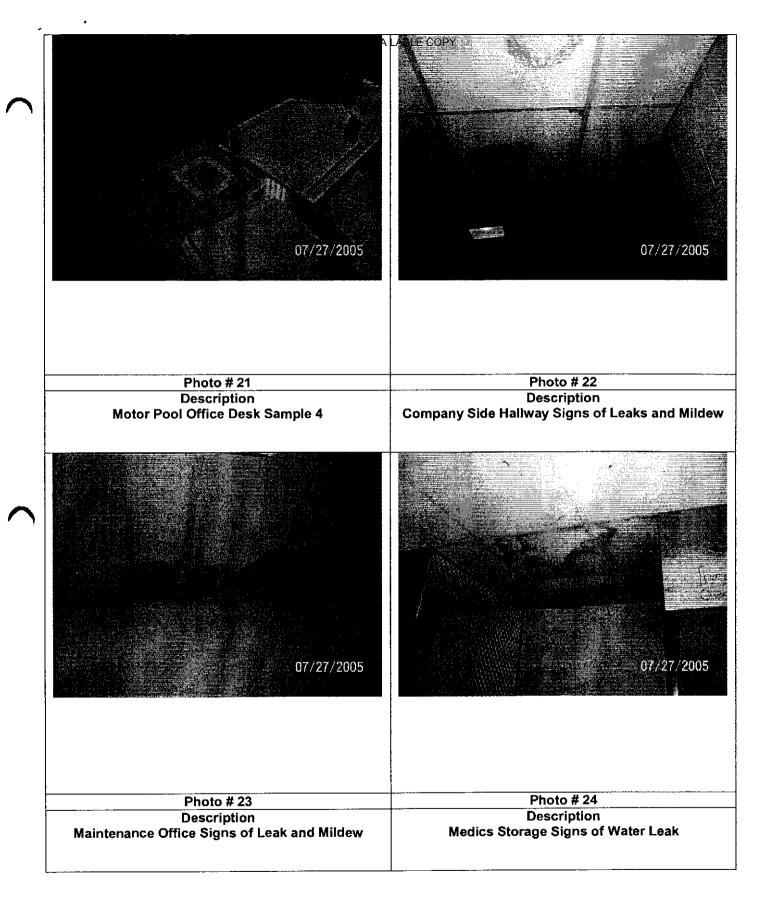


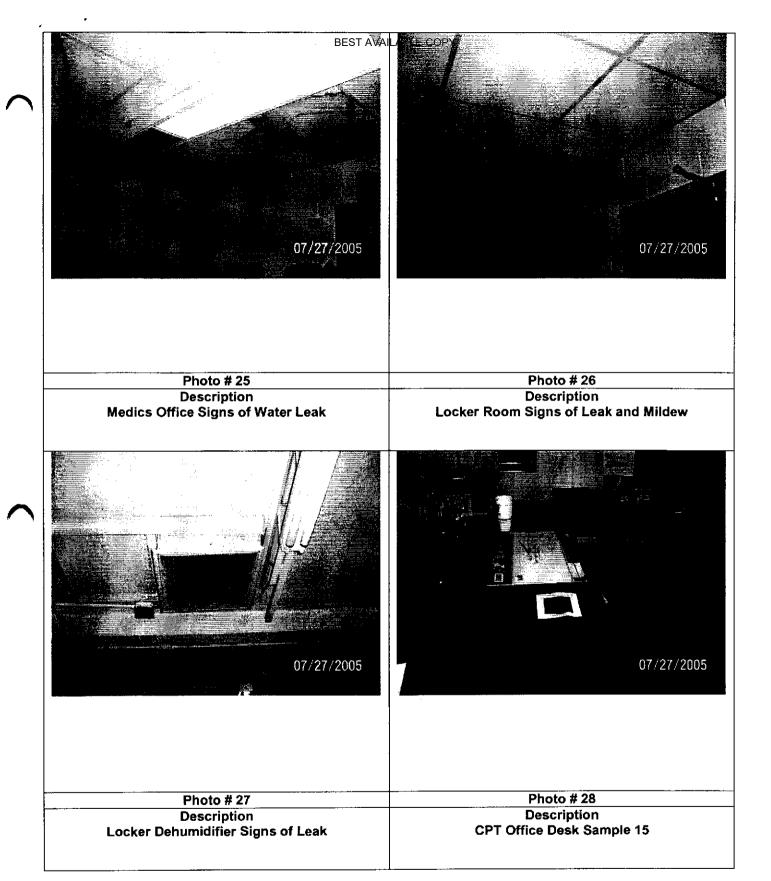


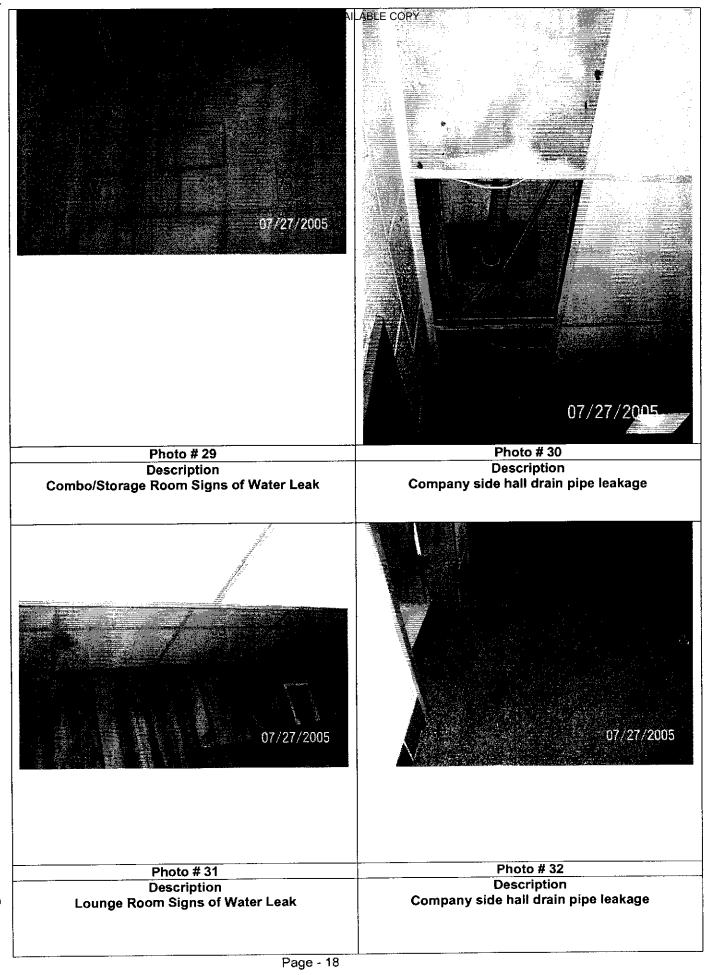












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Date: 8/10/2005

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CLIENT: Project:

Technical Solutions International

Delivery Order:

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Union Actions

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Lab Order: 0508169

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	Laboratory	Client Sample	Results	Units	Report	DF	Date	Date	Analyst
	ID	ID			Limit.		Collected	Analyzed	
•	0508160.0164	1980N 16	1 03	w. This	0.0266	2.06	7/27/NY05	8/5/200/6	VA

APPENDIX E - HHIM Sheets

Section 4. Hazard Inventory Data

a. CAS Code

Section 1. Do	emog	raphics Data								
a. ARLOC 450	a. ARLOC 45000 b. Installa					llation c. BLDG / RM Number				
d. Location / Coo				e. Operation (. Description		
g. MACOM/COD	E	h	. SUBN	MACOM/CODE		i. Su	perviso	or		
j. Telephone / Al	JTOVO	N Number			k. RA	C	I. Fre	quency (hrs. per day)		
m. NO CIV(S)		n. NO MIL		o. NO Contract	tor(s)	p. NO LO	C(S)	q. NO Othe	er	
Section 2. IH										
a. LAB Hoods		b. Vapor Degre	easers		c. Mair	ntenance Bays		d. Spray Boot	hs	
		ks								
Section 3. Su										
a. Survey Date	, cy z				h Evalus	ator (initials)				
c. Controls	Drocon	t d. Evaluat	ion	e. Unit C			Doguina	d - C4		No.
c. Controls	rresen	t u. Evaluat	1011	e. Unit C	oue	f. Controls l	Kequire	ed g. St	atus	
h. Persona	l Prot	ective Equipment (R - R	equired: A -	- Avail	able)				
1. Respirator		1		Manufa	the second secon		NI	OSH TC NO	R/A	A
Disposable									/	
½ Face Air Pu	urifvii	ng							1	
½ Face Air Pi										
Full Face Air									/	
Powered Air	Purify	ving							/	
Airline									/	
Self-Containe									/	
Abrasive Blas	sting I	Hood							/	
2. Gloves	D/A	3. Eye / Face	R/A	4.	D/A	5. Body	D/A	6. Head/Foot		R/A
2. Gloves	NA	J. Lyc / Facc	IVA	Hearing	IVA	J. Dody	IVA	o. Head/Poot		NA
Acid	1	Chemical /	/	Muffs	1	Aprons	1	Hard Hats		1
		Splash								
Oil	/	Safety / Impact	/	Earplugs	/	Coveralls	/	Impermeable Bo	oots	1
Solvents	/	Chemical /	/	Canal	/	Full Body	/	Safety Conduct		1
II . C . C	,	Safety	,	Caps	,	Suit	,	Shoes		1,
Hot Surfaces	/	Full Face Shield	/	Helmets	/	Safety Belt / Harness	/	Safety Non- Conductive Sho	es	/
Cold	/	Welding Helmet	/			Heat Reflect	/	Solidadii ve Silo		1
Surfaces		3				Vest / Suit				
NBC Agents	/					BDU's	/			/

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b. Hazard Description

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c. PAC or EPC

d. Medical Surveillance

Recommended (Yes or No)

Section 5. Personnel Data

a. Last Name	b. First Name	c. MI	d. Sex	e. SSN (Last 4 digits)	f. Category
Mon P	ocho		11/1		
	Respo		IV		

Section 6.	Comments (ac	dd blank shee	t of paper, if	necessary)		
			100			
						 -

Health Hazard Information Module (HHIM) Field Survey

Facility Name:	Union National Guard Armory	Date	7/27/05
Storage Area:			
Trade Name:			
Nomenclature:			Container:
			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
			-
		1	
	d		

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NATIONAL GUARD REGION SOUTH INDUSTRIAL HYGIENE OFFICE 510 PLAZA DRIVE, SUITE 1530 COLLEGE PARK, GA 30349

ARNG-CSG-P

22 June 2011

MEMORANDUM FOR Non-Responsive Wellford Armory, SC Army National Guard, 910 Fort Prince Blvd, Wellford, SC 29385.

SUBJECT: Wellford National Guard Armory converted Indoor Firing Range, Lead Sampling Survey 7 June 2011.

1. References.

- Department of Defense Instruction 6055.1, Department of Defense Occupational Safety and Health (OSH) Program, 26 October 1984.
- Army Regulation (AR) 40-5, Medical Service, Preventive Medicine, 22 July 2005.
- c. National Guard Regulation (NGR) 385-10, Army National Guard Safety and Occupational Health Program, 1988.
- d. AR 385-10, The Army Safety Program, 29 February 2000.
- NGR Pam 420-15, Guidelines and Procedures for Rehabilitation and Conversion of Indoor Firing Ranges, 3 November 2006.
- f. NGR 385-15, Policy and Responsibilities, Evaluation and Operation of Army National Guard Indoor Firing Ranges, 3 November 2006.
- g. DA PAM 40-503, The Army Industrial Hygiene Program, 30 October 2000.
- h. Industrial Ventilation, 23rd Edition, American Conference of Governmental Industrial Hygienist, Cincinnati, Ohio.
- Title 29, Code of Federal Regulations (CFR), 2001 rev., part 1910, Occupational Safety and Health Standards.

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2. General.

- a. An Industrial Hygiene survey of the Wellford National Guard Armory Indoor Firing Range was conducted on 7 June 2011. The objective of the visit was look and make recommendations on any occupational health hazard discovered and to determine and verify that the converted to storage area indoor firing range (IFR) was free of lead.
- b. Non-Responsive Industrial Hygiene Technician, South Carolina Safety and Occupational Health Office performed the survey and lead sampling.
- 3. Findings. The laboratory results indicated there were ten lead samples above the IFR post cleaning standard of 200 micro grams per square foot.

The results of the lead dust sampling activities are summarized in the following table.

Sample Number	Sample Location	Laboratory Results
WELL 67-1	In area where back stop would be	1010
WELL 67-2	In area where back stop would be	712
WELL 67-3	In area where back stop would be	1670
WELL 67-4	In area where back stop would be	663
WELL 67-5	In area where back stop would be	1210
WELL 67-6	In area in front of back stop	485
WELL 67-7	Middle of room	248
WELL 67-8	Inside of cage	595
WELL 67-9	Inside of cage	1470
WELL 67-10	Toward rear of room	122
WELL 67-11	Corner of room near door	183
WELL 67-12	Rear of room	23
WELL 67-13	Other corner of rear room	48
WELL 67-14	Rear side wall of room	346
WELL 67-15	Blank	BRL

¹ Results reported in micrograms per square feet (µg/ft²)

The laboratory report is attached for review.

4. Discussion.

- a. The sample results show a distinct pattern of where the highest levels were located. They were behind where the back stop was and up to 30 feet out. It also shows where the lack of or a poor ventilation system allowed the lead to edit and drift back into the rear and corners of the indoor firing range.
- b. From the results of the samples collected it appears that this Indoor Firing Range was either not cleaned or not properly cleaned before being converted into a storage room.

² BRL = Below Reportable Limits

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5. Recommendations.

- a. Stop all employees from entering the Indoor Firing Range.
- b. Clean and then remove all stored items from the Indoor Firing Range.
- c. Discard stored items that cannot be cleaned.
- d. Clean Indoor firing Range following guidelines as outlined in NG PAM 420-15, Guidelines and Procedures for Rehabilitation and Conversion of Indoor Firing Ranges.

6. If additional information is needed about the above report, please contact Non-Responsive

Industrial Hygiene Technician, at Non-Responsive

Carolina Occupational Health Manager, at Non-Responsive



CF: State Safety and Occupational Health Office ATTN: TAG-AV-SS National Guard Road, Columbia, SC 29201-4766.

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