

- a. Drums shall be properly labeled to identify contents In-Accordance With (IAW) Federal, State and local regulatory guidance.
- b. Disposal of containerized waste shall be coordinated IAW State hazardous waste program requirements.
- c. The Environmental Office shall coordinate removal and disposal of all containerized hazardous waste through established waste streams.

Post-Cleanup Precautionary Measures:

1. Thoroughly wash hands with soap and water.
2. Rinse off rubber boots with soap and water, capturing wastewater for collection into established waste stream. If personnel choose to use over shoes for protection, dispose of overshoes into waste stream. NOTE: This recommendation is for initial clean up activities and PPE requirements may be reduced after it has been determined non-hazardous levels have been achieved.
3. Wash BDU's or personal clothing separately from children's clothes.

NOTE: No eating, drinking or cosmetics allowed during cleanup procedures (these may be allowed after washing of hands/face and done outside of cleanup area)

NOTE: Avoid blowing, shaking or like actions which could potentially disperses lead dust. Dry sweeping, dusting, wiping or blowing with compressed air shall not be permitted

Initial Cleanup:

1. Use a vacuum cleaner equipped with a HEPA exhaust filter. HEPA vacuum all surfaces in the room (ceiling, walls trim, and floors). Start with the ceiling and work down, moving toward the entry door. **Completely clean each room before moving on.**
2. Prepare water and detergent for the wipe down phase, according to manufactures recommendations.

3. Wet wipe, with cotton rags or sponge, any horizontal, diagonal or vertical surfaces up six (6) feet from floor surfaces using hot water and "Spic-n-Span" or an equivalent product.
 - a. Rinse out cleaning cloths thoroughly and frequently.
 - b. Change out cleaning water as necessary.

NOTE: If walls to be cleaned show signs of deterioration, e.g., chipping or crumbling paint, in which wiping, scrubbing, or disrupting might potentially increase or spread contamination, then this portion of the clean up should be avoided.

4. Now prepare water and detergent (e.g. Spic N Span, Mr. Clean, Pine Sol) for the mopping phase, according to manufactures recommendations, which should be found on the products label for general clean up.
 - a. Change out water frequently (when water appears dirty)
 - b. Rinse out mop heads frequently to prevent contamination of dirty water.
5. Cover entire drill floor surface with above prescribed water and detergent.
6. Final rinse should be with clean water only - -after mop heads have been cleaned.

Recommended Follow-up Housekeeping Practices *after Clearance sampling of cleaned area is performed by certified personnel:*

1. Floor cleaning and dusting should be accomplished using the wet method described in Initial Armory Cleanup SOP.

Note: Only exception to these wet cleaning procedures would be the use of a chemically treated dust floor mop. This can be used for follow-up armory cleaning by sweeping of large particles of dirt and paper.

- a. Pre-treated (chemically treated) dust floor mop will limit dust particles from being disbursed into the surround atmosphere.

- b. If treated dust mop is used - -Do Not Shake Mop head - - have mop head laundered after use. **Always keep used dust mop heads in sealed double plastic bags when stored at armory/facility.** Shaking of mop head could release unwanted contaminants into surrounding atmosphere.
2. Frequency of Cleanup- Armories will vary, according to usage and how often they should be cleaned. The following general cleaning schedule is provided:
- a. Only full-time technicians and traditional soldiers using facility during the month. (*Cleaned Monthly*)
 - b. Occasional activities taking place during the month, e.g., 1-2 classes or volleyball games, etc. (*Cleaned 2x's Monthly*)
 - c. Used regularly by soldiers or outside agencies/personnel. (*Cleaned Regularly - -at least Weekly*)

NOTE: Armories with adjoining Indoor Firing Ranges (IFR) should be cleaned more than weekly, again depending on use of Armory and IFR.

NOTE: Clearance sampling/testing is to be accomplished by certified personnel after these cleanup procedures are followed. If the area is an average Armory, occupied by adults only, for which you are cleaning and **is not a Converted IFR space**, you may continue to utilize the Armory space before the officials re-test this space. Please notify your Safety and/or Occupational Health personnel of the completion of this cleaning regime and they will notify the proper officials of the sampling/testing requirements needed.

If work is contracted out, a third party should do the clearance sampling.

Young children and females who are pregnant, there should be posted signs on all facilities, warning of the potential danger of exposure to lead dust.

SOP FOR ARMORY CLEANUP

1. General.

1.1 Objective.

1.1.1. The purpose of this SOP (Standard Operating Procedure) is once a lead dust hazard has been identified and excess exists, how to lower the level of lead dust to afford a safe building, which is clean enough for all personnel exposed to this potential hazard.

1.2 Description of An Armory.

1.2.1 Armories provide a space for units to support and train soldiers.

1.2.2 The facility is utilized by Army National Guard (ARNG) family members, usually in a recreational or festive setting. This may include all members and all ages of a given family.

1.2.3 The Armory can be used for community activities, which may include all age levels.

1.3 Responsibilities.

1.3.1 It is the ARNG specialty branches, e.g., Industrial Hygiene (IH), Occupational Health & Safety's, responsibility to notify occupants of any known health risk within their facility.

1.3.2 It is the building managers responsibility to warn any users of this facility about potential hazards by, e.g., verbal, written or warning signs.

1.3.3 The ultimate responsibility falls back on the TAG of each state.

2. Background.

2.1 IH Investigation.

2.1.1 The IH community found unexpectedly high levels of lead dust during a normal IH investigation (survey) in an armory that had an Indoor Firing Range (IFR) within it. Wipe samples were taken in another armory without an IFR, only to find that this armory had higher than expected levels of lead dust, also.

2.1.2 Each ARNG Regional Industrial Hygienist has planned to survey all their armories spearheaded by the Midwest regional office, to determine the magnitude of these findings.

2.1.3 About 2/3rds of the armories tested so far, did not have "a clean bill of health". Now the IH community will attempt to discern where the contamination is coming from and also, give guidance on how to deal with these contaminant.

2.1.4 Air sampling of the armories tested have shown very low levels of lead dust in the breathing area. Dust wipe samples have varied in quantities present but have exceeded the EPA's floor standard and the ARNG IFR guidelines.

3. Relevant Standards and Guidelines.

3.1 Airborne Lead.

3.1.1 The Occupational Safety and Health Administrations (OSHA) Permissible Exposure Level (PEL) for airborne lead is **50 micrograms per cubic meter** (ug/m³), averaged over an 8-hour work shift. The OSHA action level is 30 ug/m³.

3.2 Blood Lead Level (BLL).

3.2.1 OSHA requires that personnel who are exposed to airborne lead above the PEL be offered medical surveillance that includes blood lead level monitoring. Personnel with total **BLL above 50 micrograms per deciliter** (ug/dl) of blood are required to be removed from occupational lead exposures until the BLL drops back to 40.

3.2.2 Women who may become pregnant who are exposed to lead should consult with their physician. Fetal and newborn BLLs are similar to those of

the mother. The Center for Disease Control and Prevention considers levels above **10 ug/dl in children under 6** to be elevated BLLs.

3.3 Lead in Surface Dust.

3.3.1 There are no established standards for lead levels in dust within buildings other than those used by children under 6. The Environmental Protection Agency (EPA) along with Housing and Urban Development (HUD) floor dust lead level standard (which is currently **40 ug/ft²**) does not apply to workplace surfaces, and would be impossible to maintain in many industrial facilities. (EPA 40 CFR Part 745)

3.3.1.1 The EPA interior windowsill standard is 250 ug/ft².

3.3.1.2 The EPA standard for window trough is 400 ug/ft².

3.3.2 OSHA cites a level of 200 ug/ft² as guidance to its own inspectors for evaluating the cleanliness of lunchroom and locker room surfaces that are supposed to be kept as clean as possible.

3.4 Lead in Paint.

3.4.1 EPA's standard for lead-based paint or other surface coatings that contain lead equal to or exceeding 1.0 milligram per square centimeter (mg/cm²) or 0.5 percent (%) by weight or 5000 parts per million (ppm) by weight.

4. Indoor Firing Ranges (IFR).

4.1 Relevant Standards and Guidelines.

4.1.1 OSHA guidelines stated above (see 3.3.2) are the recommended working levels to achieve in an active IFR.

4.1.2 NGR 385-10 guideline reflects that of OSHA at 200 ug/ft² for lead dust on surfaces.

4.2 Maintenance and Cleaning.

4.2.1 Follow NGR 385-10, along with SOP found in All States Letter (Log Number P00-0059 along with All States Letter (Log Number P01-0075)

6. Armory Cleanup.

6.1 High Test Result.

6.1.1 If the public utilizes your facility and the results came back above 40 ug/ft² you are responsible for cleaning this area and adjoining areas to meet the 40 ug/ft² or less.

6.1.1.1 Unless you can guarantee no children under the age of 7 will come into your facility.

6.1.1.2 Unless your state public health has other guidance, e.g., post signage to warn personnel who are pregnant or of child bearing age, or under the age of 7 y/o.

6.1.1.3 Signs stating "No smoking, drinking or eating, application of make-up without washing of hands prior to activity."

6.2 Cleaning of Building. Before proceeding into the cleanup mode, first, discuss with your Environmental office what procedures they would recommend and then coordinate your efforts with local agencies, if warranted.

6.2.1 The building, and dusty materials and equipment in it should be cleaned one time to reach the dust lead levels appropriate for the function of this facility, e.g., used by full-time personnel only, utilized by adults or children 7 y/o, or order children only, or utilized by pregnant individuals and/or children under the age of 7. NOTE: This type cleaning implies that this is not a facility that has an active Indoor Firing Range. For facilities with active ranges, these facilities should be monitored with wipe samples taken over the drill floor area by the Range Custodian quarterly, to ascertain the level of lead is at the required level for your particular facility and situation.

6.2.1.1 This cleanup can be accomplished using a HEPA vacuum (a very tedious and long operation) and then by utilizing a wet method with "Spic n Span" or something equivalent to this detergent - using wet rags to wipe down surfaces and mops soaked in this solution to do floor area. NOTE: Personal protective gloves, rubber boots or protective disposable shoe/boot covers should be used during this procedure and personnel's

clothing should be washed separately from their families, if they have young children at home. Personnel should wash their hands after performing this operation to assure lead contaminants are not ingested.

6.2.1.2 Frequent changing out of the water used is vital. Disposal of this hazardous waste water and rags/mop heads, Personal Protective Equipment (PPE), etc., should be coordinated with your Environmental office.

6.2.2 Clean all ductwork where lead was found. EPA has a protocol specifically for replacing or cleaning lead in dust form in HVAC systems. EPA Office of Pollution Prevention and Toxics, "*Reducing Lead Hazards When Remodeling Your Home*" www.epa.gov/opptintr/lead/rrpamph.pdf.

6.2.3 Continue to enforce good housekeeping and hygiene practices. These measures make good sense to minimize exposures to any toxic chemicals in the workplace.

6.2.4 Provide lead awareness training to the general workforce and any occupants of your facility.

NOTE: Before you start any new procedures or practices be aware of the local city and state regulations in your area.



30 Sept 14

**ARMY NATIONAL GUARD
INDUSTRIAL HYGIENE - SOUTHWEST**

Guam • Hawaii • California • Oregon • Washington • Nevada • Arizona • Idaho • Utah • Wyoming • Montana • New Mexico • Nebraska

Industrial Hygiene Site Assistance Visit

Manti Armory
85 West Union Street
Manti, UT 84642

10510 Superfortress Avenue, Suite C, Mather, CA 95655

(916) 854-1494

Industrial Hygiene Southwest's mission is to ensure all military personnel and military leadership is provided the specialized technical expertise, consultation and assistance to ensure all military operations and processes are conducted in a healthy manner

10510 Superfortress Avenue, Suite C, Mather, CA 95655 (916) 854-1494



DEPARTMENT OF THE ARMY AND AIRFORCE
NATIONAL GUARD BUREAU
INDUSTRIAL HYGIENE SOUTHWEST
10510 Superfortress Ave, Ste. C
Mather, CA 95655

ARNG-CSG-P

19 OCT 2014

MEMORANDUM THRU **Non-Responsive** 953 Minuteman Dr., ATTN: Deputy State Surgeon,
Draper, UT 84020

FOR Commander, Manti Armory 85 West Union Street, Manti, UT 84642

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for Manti Armory 85 West Union Street, Manti, UT on 30 SEP 2014

1. References. See survey report.

2. General.

a. At the request of the NGB Industrial Hygiene, Southwest (IHSW) Region, an Industrial Hygiene Site Assistance Visit and cursory review of safety related items and programs was conducted at the Manti Armory 85 West Union Street, Manti, UT on 30 SEP 2014.

b. The findings and recommendations in this Executive Summary are controlling and supersede all recommendations in the Industrial Hygiene (IH) report (reference Attachment II). However, IHSW concurs with the observations and findings within the attached IH report.

c. Risk Assessment Codes (RAC) provided in this report have been derived from two sources: Deriving Risk Assessment Codes (RAC's) for Health Hazards (Ref: DOD Instruction 6055.1) and AR 385-10, The Army Safety Program.

d. Use of trademark names in the attached report, or this Executive Summary, does not imply Army National Guard endorsement of any product.

3. Findings. See survey report.

4. Commendable.

a. The facility was generally clean and orderly and personnel were helpful during this IHSAV.

5. Observations / Recommendations.

NOTE: This section provides conclusions and recommendations for the findings and observations made within the attached contractors report. The paragraphs are numbered to correspond to the sections where they were first noted. (i.e., paragraph 2.1a represents the 2.1a located within the contractors report.

a. Conduct annual and monthly inspection of the fire extinguishers and record on the tag attached to each fire extinguisher. (para. 3.6) (RAC 3)

ARNG-CSG-P

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for Manti Armory 85 West Union Street, Manti, UT on 30 SEP 2014

b. Conduct a facility survey to identify Asbestos Containing Material (ACM) within the facility and develop ACM Management Plan. Conduct awareness training to all personnel who occupy the facility regarding the findings and the ACM Management Plan. The survey may have been completed, however, at the time of this assistance visit awareness training, ACM identification, or an ACM Management Plan was not available. (para. 3.2) (RAC 3)

6. Violation Correction Log.

a. IHSW has provided a Violation Correction Log derived from the observations from this visit. IHSW recommends the following:

(1) Commander(s) assign an Action OIC/NCOIC, Suspense Date for completion, and Estimated Cost(s) to ensure item completion and corrective status is briefed during quarterly (or monthly) Safety Meetings/Councils until resolved.

(2) Corrective measures should be implemented and accomplished at the lowest levels possible. Hazards and Corrective Measures that cannot be corrected at the facility level, and require assistance from higher headquarters or from the state level, should be elevated to the Quarterly State/BN Safety Council Meeting for resolution.

(3) Recommend a representative from the facility attend all quarterly/monthly meetings to ensure the appropriate emphasis and corrective actions are followed for hazard resolution and abatement of the observations made during this visit.

(4) Retain entries of the items corrected, or closed, for future reference. This may be accomplished by posting completed items within the Corrected Hazard Sheet portion of the Excel Violation Correction Log Workbook we've provided.

(5) The preferred method to document and track identified hazards for resolution is for their entry into the Reserve Component Automation System – Safety and Occupational Health (RCAS-SOH) Program.

b. IHSW recommends further program refinement through written documentation for standardized guidance to the personnel performing the processes. Conducting Hazard Assessments consistent with 29 Code of Federal Regulations (CFR) 1910.132, General Requirements for Personal Protective Equipment and AR 40-5, Preventive Medicine, would provide this continued program refinement.

7. Hazard Assessment/Job Safety Analysis (JSA).

a. Documenting the Hazard Assessments provides a method to obtain initial and periodic review from the Industrial Hygiene, Occupational Health and Safety Professions located at the JFHQ/HQ/state level.

b. The Hazard Assessments should be used as written training materials for the new, transfer and unit personnel working under the auspice of the facility.

c. IHSW recommends facility supervisory staff and facility personnel conduct initial Hazard Assessments outlined in AR 40-5, Army Preventive Medicine (Section V) and 29 CFR 1910.132 and

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHS AV) for Manti Armory 85 West Union Street, Manti, UT on 30 SEP 2014

submit for review and obtain approval from the state Industrial Hygiene, Occupational Health and Safety Professions.

d. We have provided an appendix with Hazard Assessments (HA) examples of some of this facilities operations. Additional operations can utilize this format to design HA not observed during this IHS AV.

e. An integral and important factor of the Hazard Assessment/JSA process is for the review and guidance from qualified Safety, Occupational Health and Industrial Hygiene professions located at the higher headquarters level or state level. For this reason, the Hazard Assessments (to include all pertinent and supporting documents) should be completed by the facility personnel and forward to the Utah Army National Guard Industrial Hygiene, Occupational Health and Safety Office for final review and approval (signature).

f. Job Safety Analysis (JSA's)/Hazard Assessments.

NOTE: The Hazard Assessments can be used for monthly meetings to brief/train, and document large group training events and activities.

8. IHSW recommends the Senior Unit Commander of this Facility and any Co-Tenant Organizations or Units, review and provide assistance with implementation of these recommendations. This will educate the chain of command and allow the unit or co-tenant organizations to take any necessary precautions or actions required by them and their personnel.

9. To assist you with execution of your responsibilities in correcting the observations noted, we encourage you to consult with the State Safety Manager, Occupational Health Manager and Industrial Hygiene professions located and/or authorized within the State Safety and Occupational Health Office.

10. For additional information please contact the NGB-IHSW office at (916) 854-1491 or via email at

Non-Responsive

Non-Responsive

RON W. PROLA
NGB, IHSW, CIV
Regional Industrial
Hygiene Manager

Industrial Hygiene Southwest

Violation Inventory Log

LOG OF SCHEDULE OF CORRECTIVE ACTION - COMPLIANCE WITH SAFETY AND HEALTH STANDARDS
MANTI ARMORY, UTAH 84642



CONTROL NUMBER	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/NCOIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
CLOSED <input checked="" type="checkbox"/> UTMA-09302014-3.2 <input type="checkbox"/>	There was no Asbestos Management plan in place.	Armory	3	Conduct a facility survey to identify Asbestos Containing Material (ACM) within the facility and develop ACM Management Plan. Conduct awareness training to all personnel who occupy the facility regarding the finding and the ACM Management Plan. The survey may have been completed, however, at the time of this assistance visit, awareness training, ACM identification, or an ACM Management Plan was not available.					29 CFR 1910.1001
UTMA-10012014-3.5	Armory hasn't converted to new SDS format	Armory	4	Update all MSDS for the facility with the new SDS format by Jun 2016					29 CFR 1910.1200
UTMA-09302014-3.6	The Fire extinguishers were found to be behind on monthly inspections.	Armory	3	Properly inspect all fire extinguishers on a monthly basis. Document inspection on inspection tag placed on fire extinguisher.					29 CFR 1910.157(b)(1)

BEST AVAILABLE COPY
Industrial Hygiene Survey
Manti Armory

Development's (HUD's) *Guidelines For The Evaluation And Control Of Lead-Based Paint Hazards In Housing*, June 1997. HUD currently recommends an exposure limit of 40 ug/ft². This guideline was established to prevent lead exposure to children in domestic homes, along with females who are pregnant. Areas that have levels that exceed 40 ug/ft² should be thoroughly cleaned and employees that may come into contact with those areas should be properly trained in the hazards of lead exposure.

**Lead Wipe
Table 3.1.A.**

Sample ID	AREA	Photo #	Result ug/ft2
093014-1	Control	NA	BDL
093014-2	North drill hall	2	BDL
093014-3	Center drill hall	3	BDL
093014-4	South drill hall	4	BDL
093014-5	West drill hall	5	BDL
093014-6	East drill hall	6	BDL
093014-7	North CFR	7	BDL
093014-8	Center CFR	8	BDL
093014-9	South CFR	9	BDL
093014-10	West CFR	10	BDL
093014-11	East CFR	11	BDL
093014-12	Behind storage CFR	12	BDL

BDL= Below Detection Limits

ug/ ft2= Micrograms per Square Foot

NOTE: Please continue the cleaning of working environment throughout the armory, especially in weapons cleaning areas. Please utilize the attached SOP and general information paper provided for cleaning procedures.

3.2. **Asbestos Survey-** Non-Responsive was asked during this survey about the presence of asbestos and he advised asbestos was removed prior to the armories renovation in 2011. It was retested for asbestos in 2012 and none was found. There is no ACM maintenance plan in place that SFC Branch is aware of.

All accessible areas of the facility were visually inspected to identify suspect ACM. All accessible surfaces, structures, and mechanical systems within these areas were examined and all suspected ACM was inspected to determine friability. No bulk samples were taken during this survey period.

Asbestos is regulated as a hazardous air pollutant by the Environmental Protection Agency (EPA) under the authority of the Clean Air Act. The asbestos regulations are included in the National Emissions Standards for Hazardous Air Pollutants (NESHAPS) and are referenced as 40 CFR 61, Subpart M.

Aloha World

Illumination measurements were compared with recommendations made by the Industrial Engineering Society (IES)/American National Standards Institute (ANSI) RP7-1991. In general, IES recommends a range of **50 to 100 foot-candles** as the minimum lighting requirements for performance of visual tasks of medium contrast or small size, such as would typically occur in an office area.

Based on these criteria, the general lighting appears to be adequate in all of the office spaces and classroom. Inadequate light levels may place strain on the eyes and cause headaches or vision problems. With an aging work force in place, task lighting can help reduce the vision problems associated with inadequate lighting.

3.9. Safety Policies, Training, and Record Keeping – The following safety policies and procedures were found at this site: All courses are taken at FMS 4.

4.0 Industrial Hygienist Certification and Project Limitations

All Industrial Hygiene Assessment techniques and tests used in the Industrial Hygiene survey of the Army National Guard Armories were reviewed by Ron Faull, Industrial Hygiene Southwest, National Guard Bureau at (916) 854-1492.

This Project was performed using, as a minimum, practices consistent with standards acceptable within the industry at this time, and a level of diligence typically exercised by industrial hygiene and environmental consultants performing similar services.

The procedures used in this investigation attempt to establish a balance between the competing goals of limiting investigative and reporting costs and time, and reducing the uncertainty about unknown conditions. Therefore, because the findings of this report were derived from the scope, costs, time, and other limitations, the conclusions should not be construed as a guarantee that all environmental or occupational hazards have been identified and fully evaluated. Where sample collection and testing have been performed, Aloha World's professional opinions are based in part on the interpretation of data from discrete sampling locations that may not represent conditions at non-sampled locations. Aloha World assumes no responsibility for omissions or errors resulting from inaccurate information or data provided by sources outside of Aloha World, or from omissions or errors in public records.

Furthermore, it is emphasized that the final decision on how much risk to accept always remains with the client since Aloha World is not in a position to fully understand all of the client's needs. Clients with a greater aversion to risk may want to take additional actions while others, with less aversion to risk, may want to take no further action.

Aloha World

Industrial Hygiene Southwest

Violation Inventory Log

LOG OF SCHEDULE OF CORRECTIVE ACTION - COMPLIANCE WITH SAFETY AND HEALTH STANDARDS

MANTI ARMORY, UTAH 84642



CONTROL NUMBER	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/NCOIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
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UTMA-10012014-3.5	Armory hasn't converted to new SDS format	Armory	4	Update all MSDS for the facility with the new SDS format by Jun 2016					29 CFR 1910.1200
UTMA-09302014-3.6	The Fire extinguishers were found to be behind on monthly inspections.	Armory	3	Properly inspect all fire extinguishers on a monthly basis. Document inspection on inspection tag placed on fire extinguisher.					29 CFR 1910.157(b)(1)

5.0 Technical Assistance

For technical assistance regarding information found in this report or the performed survey, please contact **Non-Responsive** of the Southwest Regional Industrial Hygiene Office-(916) 854 1492. Contact the State Safety, State Industrial Hygiene and Occupational Health Office and/or the Regional Industrial Hygienist should any of the operations change, or should the personnel become incapable of following the previous recommendations and subsequent recommendations that are needed.

Non-Responsive IHH Tech
Aloha World Environmental

Aloha World

Appendix A: References

American Conference of Governmental Industrial Hygienists (ACGIH), Industrial Ventilation, A Manual of Recommended Practice, 23 Edition, 1998.

American Conference of Governmental Industrial Hygienists (ACGIH), Threshold Limit Values for Chemical Substances and Physical Agents and Biological Indices for 1998.

American National Standards Institute (ANSI)/Illuminating Engineering Society (IES), Industrial Lighting 1991.

American National Standards Institute, Z358. 1-1998. Emergency Eyewash and Shower Equipment 1998.

AR 40-5, Preventative Medicine, 15 October 1990.

AR 385-10, The Army Safety Program, 23 May 1988.

Corps of Engineers Guide Specification, CEGS-1585 1, Overhead vehicle tailpipe (and welding fume) Exhaust Systems, May 1984.

DA PAM 40-ERG, Ergonomics

DA PAM 40-501, Hearing Conservation, 27 August 1991.

National Safety Council, Fundamentals of Industrial Hygiene, 4~ edition, 1996.

NOR 385-10, Army National Guard Safety and Occupational Health Program, 29 December 1989.

TB MED 503, The Army Industrial Hygiene Program, February 1985.

TG022, US Army Environmental Hygiene Agency (USAEHA), Industrial Hygiene Evaluation Guide, October 1975

TG 141, US Army for Health Promotion and Preventive Medicine (USACHPPM) Industrial Hygiene Air Sampling Guide, Nov. 1997

Title 29, Code of Federal Regulations (CFR), 1998, revision Part 1910, Occupational Safety and Health Standards

Title 29, Code of Federal Regulations (CFR), 1998, revision Part 1926, Construction Standards

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Appendix C

Photograph Log

Aloha World

Photo Log



Photo #1 – Manti Armory

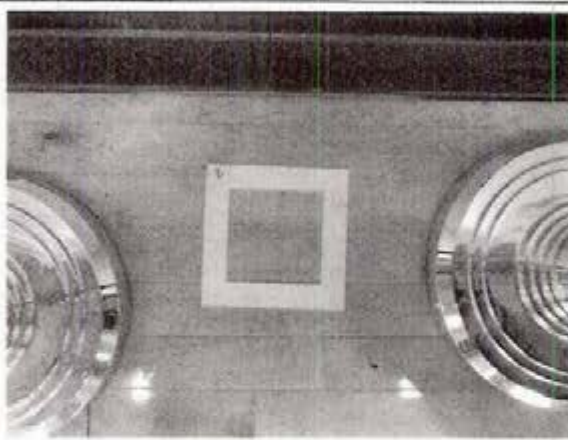


Photo #2- North drill hall wipe



Photo #3- Center drill hall wipe

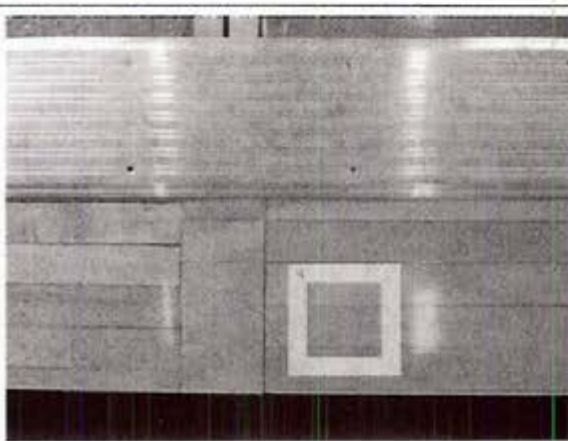


Photo #4- South drill hall wipe

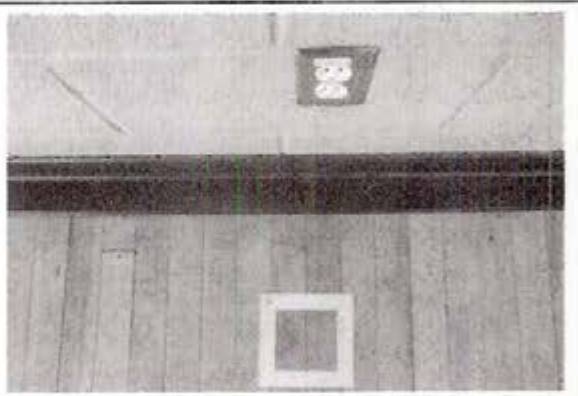


Photo #5 –West drill hall wipe

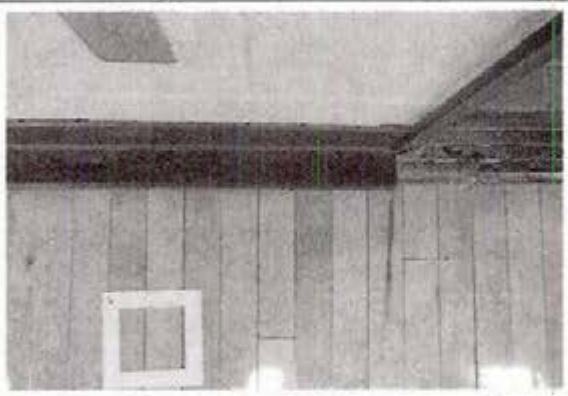


Photo #6 – East drill hall wipe

Photo Log

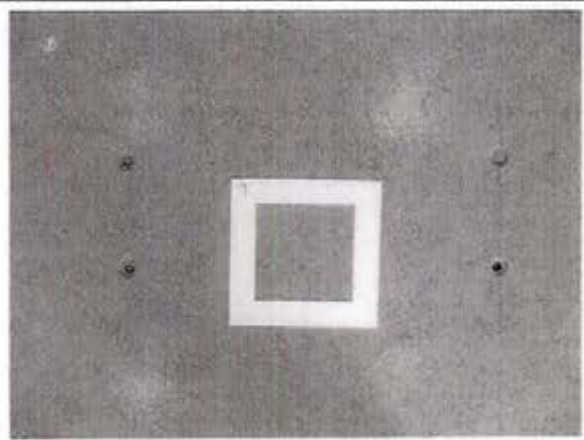


Photo #7 – North CIFR wipe

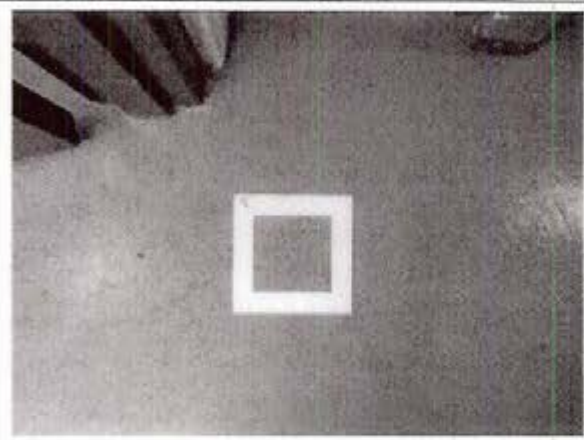


Photo #8- Center CIFR wipe



Photo #9 – South CIFR wipe

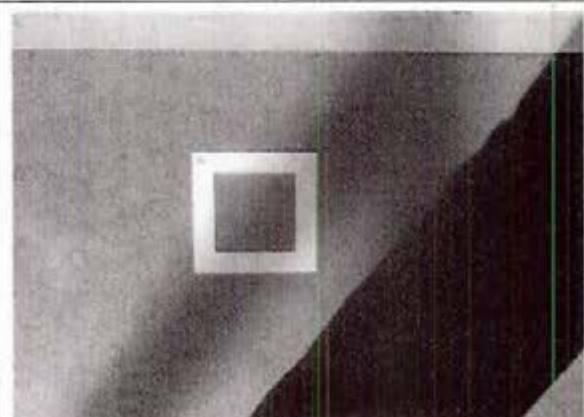


Photo #10 – West CIFR wipe

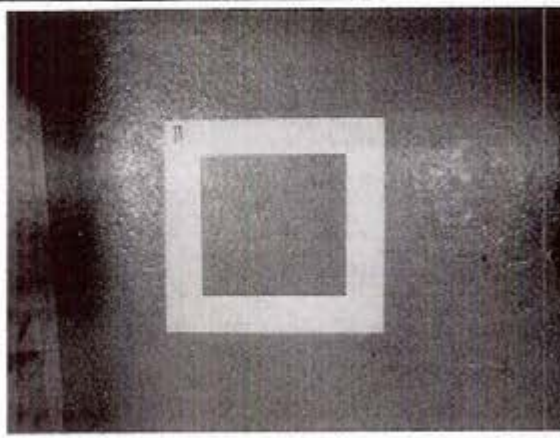


Photo #11 –East CIFR wipe

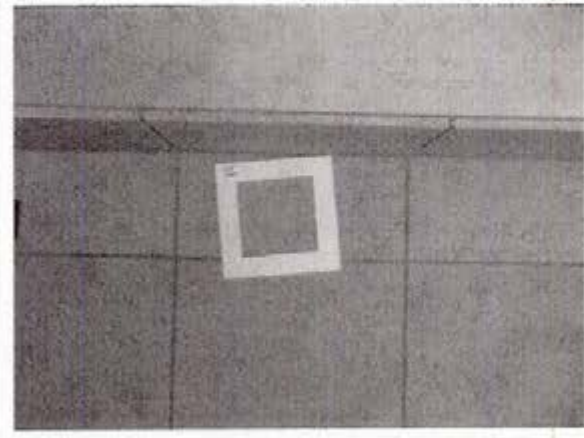


Photo #12 –Behind CIFR wipe

Photo Log



Photo #13-Drill Hall/CIFR

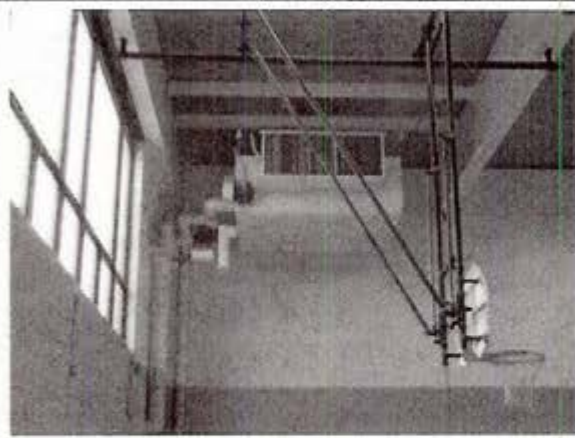


Photo #14-Heating System

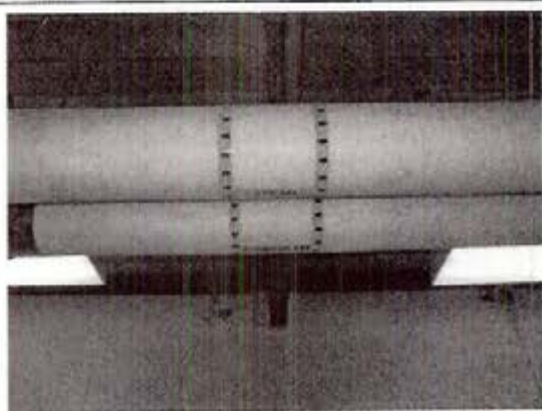


Photo #15-Heating in CIFR storage



Photo #16-Flammable lockers



Phot #17-Janitorial storage



Photo #18-A/C offices

Appendix D

Floor Plan/Illumination Survey

Aloha World

Appendix E

Laboratory Analysis Reports Sample Location & Log

Aloha World

RESERVOIRS ENVIRONMENTAL, INC.

**5801 Logan St., Suite 100
Denver CO 80216**

TABLE ANALYSIS: LEAD BY WIPE SAMPLING

RES Job Number: **RES 302219-1**
Client: **Aloha World**
Client Project Number / P.O.: **093014**
Client Project Description: **Manti Armory**
Date Samples Received: **October 4, 2014**
Analysis Type: **USEPA SW846 3050B / AA (7420)**
Turnaround: **3-5 Day**
Date Samples Analyzed: **October 8, 2014**

Client ID Number	Lab ID Number	Sample Area (sq.ft.)	LEAD (µg)	Reporting Limit (µg/ft ²)	LEAD CONCENTRATION (µg/ft ²)
093014-1 Bathroom	EM 1270404	0.11	BRL	56.8	BRL
093014-2 Drill Hall North	EM 1270405	0.11	BRL	56.8	BRL
093014-3 Drill Hall Center	EM 1270406	0.11	BRL	56.8	BRL
093014-4 Drill Hall South	EM 1270407	0.11	BRL	56.8	BRL
093014-5 Drill Hall West	EM 1270408	0.11	BRL	56.8	BRL
093014-6 Drill Hall East	EM 1270409	0.11	BRL	56.8	BRL
093014-7 CIFR North	EM 1270410	0.11	BRL	56.8	BRL
093014-8 Center	EM 1270411	0.11	BRL	56.8	BRL
093014-9 South	EM 1270412	0.11	BRL	56.8	BRL
093014-10 West	EM 1270413	0.11	BRL	56.8	BRL
093014-11 East	EM 1270414	0.11	BRL	56.8	BRL
093014-12 Behind CIFR	EM 1270415	0.11	BRL	56.8	BRL

*Calculations Based On A 1 sq.ft. Sample Area Unless Otherwise Noted

* Unless otherwise noted all quality control samples performed within specifications established by the laboratory.

BRL = Below Reporting Limit

P: 303-964-1986
F: 303-477-4275

5801 Logan Street, Suite 100 Denver, CO 80216

Page 2 of 2
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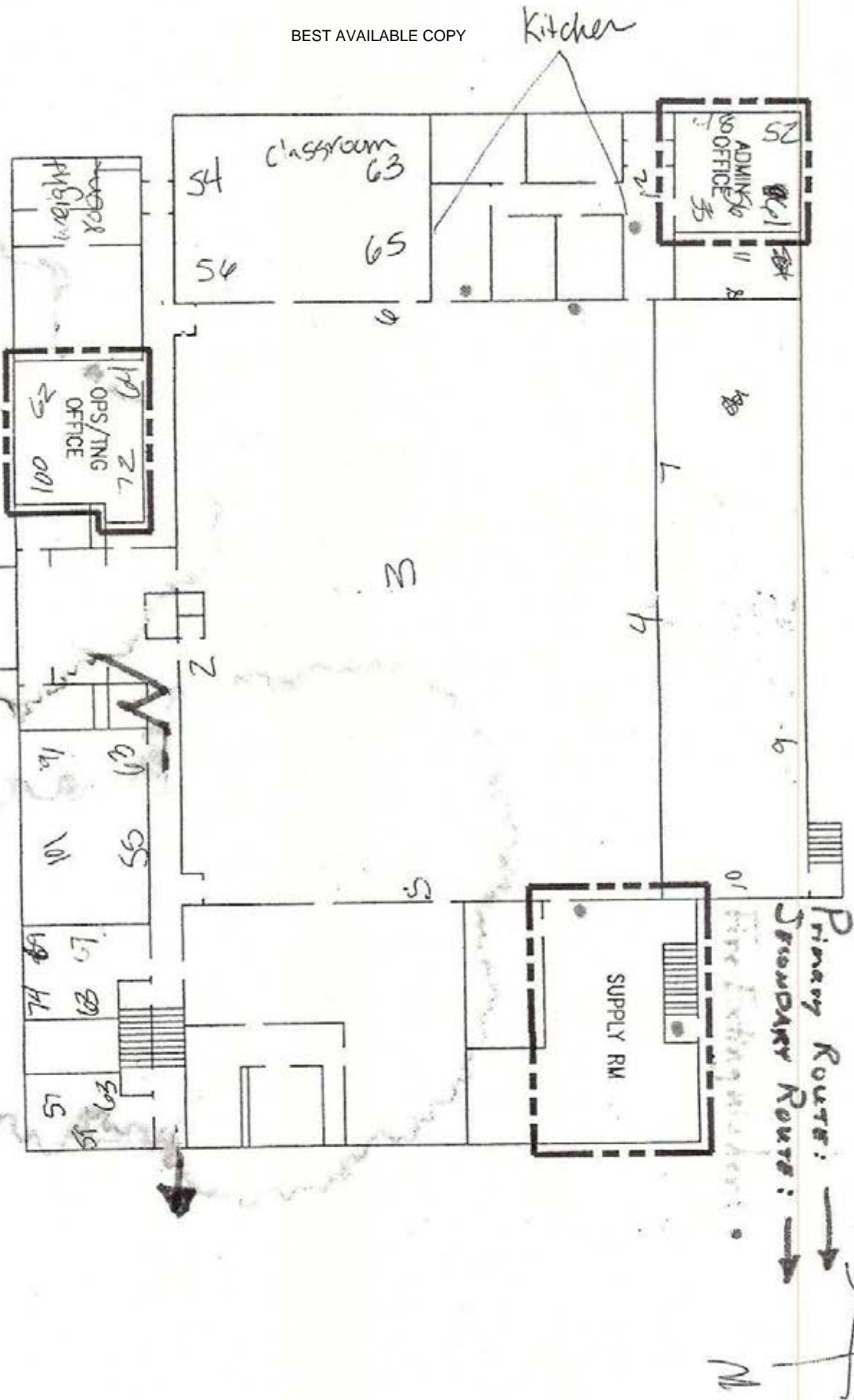
Posted to NGB FOIA Reading Room
May, 2018

FOIA Requested Record #J-15-0085 (UT)
Released by National Guard Bureau
Page 865 of 1683

Non-Responsive

Data Q

www.reitab.com



Appendix F

Full-Time Personnel Listing

Aloha World

Army National Guard Armory Survey **(To Be Included In Report)**

Five lead wipe samples collected from drill floor (take samples from dusty horizontal floor surfaces)	✓
Are any weapons cleaned in the facility, if yes where are they cleaned?	✓
Additional lead wipe samples taken from 25% of the rest of the building - (on floor areas only)	✓
Is there a converted indoor firing range? If so collect additional wipe samples IAW the SOW.	yes
Is there any peeling paint? Take bulk sample if able.	n/a
Are there any signs of water damage or mold?	no
Any suspected ACM? Where and what condition is it in. Bulk sample if able.	asbestos - tested @ end
Quality of housekeeping	good
HVAC maintenance plan in place?	DCFM
Overall condition of HVAC system	A/C inea room heat - steam
Obtained CO2, Temp, RH monitoring	✓
HAZMAT inventory on hand (make copies for the report), MSDS available for all materials.	✓
HAZMAT storage , Condition of lockers, if outside storage building is used is it ventilated and does it meet OSHA standards.	✓

Evaluate Kitchen Stove Hood Flow if Present IAW NFPA Standard 96.	✓
Collect Source Noise Measurements of Kitchen Appliances and Document Using DD 2214	n/a
Conduct a safety walkthrough of entire facility document any safety deficiencies found.	✓
Take photos of outside of building, all sample points and any pertinent hazards or concerns.	✓
Name of Armory, POC, phone #, address and organizations in Armory	<div style="background-color: black; color: red; text-align: center; padding: 10px;"> Non-Responsive </div>
(Add Checklist to Report)	

Appendix H

Chemical List

Aloha World



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UTAH NATIONAL GUARD
1ST BATTALION 145TH FIELD ARTILLERY
85 WEST UNION STREET
MANTI, UT 84020-9286

NGUT-FAA-BL

13 June 2014

MEMORANDUM FOR RECORD

SUBJECT: HAZARDOUS MATERIALS LIST IN FLAM CABINET

1. The following is a list of Hazardous Material in the possession of B-BTRY 1st Bn 145th FA located in the Manti Armory.

9150-01-102-1473	CLP	30EA
9150-01-054-6453	CLP	30EA
9150-01-053-6688	CLP	10EA
6810-00-201-0906	DENATURED ALCOHOL	2EA
N/A	DESK AND OFFICE CLEANER	4EA
9150-01-438-6076	ENGINE OIL	2EA
9150-01-262-3358	GREASE, AIRCRAFT	4EA
9150-00-935-9807	HYDRAULIC FLUID	1EA
9150-00-252-6380	HYDRAULIC FLUID	1EA
9150-00-292-9689	LOW TEMP WEAPONS OIL	4EA
9150-01-260-2534	LUBRICANT SOLID FILM	1EA
N/A	MARKING PAINT ORANGE	1EA
N/A	MEK	1EA
7930-01-398-2743	POWER DUSTER	40EA
8010-00-582-4743	SKILLCRAFT PAINT TAN	6EA
8010-00-910-8154	SKILLCRAFT PAINT BLACK	12EA
8010-00-848-9272	SKILLCRAFT PAINT OLIVE DRAB	36EA
8010-01-332-3745	SKILLCRAFT PAINT YELLOW	1EA
8010-00-582-4743	SKILLCRAFT PAINT BROWN	48EA
8010-01-331-6109	ECO SURE PAINT RED	6EA
8010-01-332-3745	ECO SURE PAINT YELLOW	6EA
8010-01-380-1773	ECO SURE PAINT WHITE	6EA
8030-01-418-9008	WD40	36EA

2. POC for this matter is the undersigned at (435) 835-5241

Non-Responsive

Supply NCO



Industrial Hygiene Southwest

Violation Inventory Log

LOG OF SCHEDULE OF CORRECTIVE ACTION - COMPLIANCE WITH SAFETY AND HEALTH STANDARDS MANTI ARMORY, UTAH 84642

CONTROL NUMBER	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/NOIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
CLOSED <input checked="" type="checkbox"/> UTMA-09302014-3.2 <input type="checkbox"/>	There was no Asbestos Management plan in place.	Armory	3	Conduct a facility survey to identify Asbestos Containing Material (ACM) within the facility and develop ACM Management Plan. Conduct awareness training to all personnel who occupy the facility regarding the finding and the ACM Management Plan. The survey may have been completed, however, at the time of this assistance visit, awareness training, ACM identification, or an ACM Management Plan was not available.					29 CFR 1910.1001
UTMA-09302014-3.5	The SDS file is still listed as MSDS since the Globally Harmonized System (GHS) Classification of Labeling Chemicals has just taken effect this year and the documents are still MSDS documents.	Armory	4	Update all MSDS for the facility with the new SDS format by June 2016					(CFR 1910.120)
UTMA-09302014-3.6	The Fire extinguishers were found to be behind on monthly inspections.	Armory	3	Properly inspect all fire extinguishers on a monthly basis. Document inspection on inspection tag placed on fire extinguisher.					29 CFR 1910.157(b)(1)].



Industrial Hygiene Southwest
Violation Inventory Log
LOG OF SCHEDULE OF CORRECTIVE ACTION - COMPLIANCE WITH SAFETY AND HEALTH STANDARDS
MANTI ARMORY, UTAH 84642

CONTROL NUMBER	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/NCIC	Estimated Costs	DATE CORRECTED	REFERENCES
UTMA-09302014-3.2 <input checked="" type="checkbox"/>	There was no Asbestos Management plan in place.	Armory	3	Conduct a facility survey to identify Asbestos Containing Material (ACM) within the facility and develop ACM Management Plan. Conduct awareness training to all personnel who occupy the facility regarding the finding and the ACM Management Plan. The survey may have been completed, however, at the time of this assistance visit, awareness training, ACM identification, or an ACM Management Plan was not available.					29 CFR 1910.1001
UTMA-10012014-3.5	Armory hasn't converted to new SDS format	Armory	4	Update all MSDS for the facility with the new SDS format by Jun 2016					29 CFR 1910.1200
UTMA-09302014-3.6	The Fire extinguishers were found to be behind on monthly inspections.	Armory	3	Properly inspect all fire extinguishers on a monthly basis. Document inspection on inspection tag placed on fire extinguisher.					29 CFR 1910.157(b)(1).

ARMORY

CLEANUP & FOLLOW-UP HOUSEKEEPING RECOMMENDATIONS

Materials Needed:

1. Cloth Mop head (s) & Mop head holder(s) with handle.
2. Mop bucket (s) with wringer.
3. Clean cotton rags and sponges.
4. Disposable gloves
5. Large barrel (55 gal.) to store wastewater in after changing out of dirty scrub water. Waste water containers.
6. Disposable overshoes or rubber boots. Personnel conducting cleaning operations should not take clothes, boots, etc., home for laundering.
7. HEPA vacuum
8. Six (6) mill plastic bags to dispose of waste.
9. Detergent with surfactant, e.g., Spic-N-Span, Mr. Clean, etc.

Disposal of Waste Water and Cleaning Materials:

1. *NOTE:* Consult with Local Army National Guard Environmental Office prior to taking any collection, disposal or wiping activities commence. Each state and territory may have additional regulatory guidance on collection, storage and disposal of wastewater.
2. Mop heads should be disposed of after initial cleanup, unless otherwise advised by Environmental office personnel. Note: thorough cleaning of mop heads may be sufficient enough to reuse on future Armory cleanups but check with local Environmental Office.
3. Disposable gloves should be treated as hazardous waste.
4. Soiled cotton rags should be treated as hazardous waste.
5. Wash water contaminated with Lead can be collected and allowed to slowly evaporate leaving Lead deposits/sludge that may be collected in plastic containers, placed in metal drums, and stored for future delivery to an authorized hazardous waste disposal site.

- a. Drums shall be properly labeled to identify contents In-Accordance With (IAW) Federal, State and local regulatory guidance.
- b. Disposal of containerized waste shall be coordinated IAW State hazardous waste program requirements.
- c. The Environmental Office shall coordinate removal and disposal of all containerized hazardous waste through established waste streams.

Post-Cleanup Precautionary Measures:

1. Thoroughly wash hands with soap and water.
2. Rinse off rubber boots with soap and water, capturing wastewater for collection into established waste stream. If personnel choose to use over shoes for protection, dispose of overshoes into waste stream. NOTE: This recommendation is for initial clean up activities and PPE requirements may be reduced after it has been determined non-hazardous levels have been achieved.
3. Wash BDU's or personal clothing separately from children's clothes.

NOTE: No eating, drinking or cosmetics allowed during cleanup procedures (these may be allowed after washing of hands/face and done outside of cleanup area)

NOTE: Avoid blowing, shaking or like actions which could potentially disperses lead dust. Dry sweeping, dusting, wiping or blowing with compressed air shall not be permitted

Initial Armory Cleanup:

1. Use a vacuum cleaner equipped with a HEPA exhaust filter. HEPA vacuum all surfaces in the room (ceiling, walls trim, and floors). Start with the ceiling and work down, moving toward the entry door. Completely clean each room before moving on.
2. Prepare water and detergent for the wipe down phase, according to manufactures recommendations.

3. Wet wipe, with cotton rags or sponge, any horizontal, diagonal or vertical surfaces up six (6) feet from floor surfaces using hot water and "Spic-n-Span" or an equivalent product.
 - a. Rinse out cleaning cloths thoroughly and frequently.
 - b. Change out cleaning water as necessary.

NOTE: If walls to be cleaned show signs of deterioration, e.g., chipping or crumbling paint, in which wiping, scrubbing, or disrupting might potentially increase or spread contamination, then this portion of the clean up should be avoided.

4. Now prepare water and detergent (e.g. Spic N Span, Mr. Clean, Pine Sol) for the mopping phase, according to manufactures recommendations, which should be found on the products label for general clean up.
 - a. Change out water frequently (when water appears dirty)
 - b. Rinse out mop heads frequently to prevent contamination of dirty water.
5. Cover entire drill floor surface with above prescribed water and detergent.
6. Final rinse should be with clean water only - -after mop heads have been cleaned.

Recommended Follow-up Housekeeping Practices *after Clearance sampling of cleaned area is performed by certified personnel:*

1. Floor cleaning and dusting should be accomplished using the wet method described in Initial Armory Cleanup SOP.

Note: Only exception to these wet cleaning procedures would be the use of a chemically treated dust floor mop. This can be used for follow-up armory cleaning by sweeping of large particles of dirt and paper.

- a. Pre-treated (chemically treated) dust floor mop will limit dust particles from being disbursed into the surround atmosphere.

- b. If treated dust mop is used - -Do Not Shake Mop head - - have mop head laundered after use. Always keep used dust mop heads in sealed double plastic bags when stored at armory/facility. Shaking of mop head could release unwanted contaminants into surrounding atmosphere.
2. Frequency of Cleanup- Armories will vary, according to usage and how often they should be cleaned. The following general cleaning schedule is provided:
- a. Only full-time technicians and traditional soldiers using facility during the month. (*Cleaned Monthly*)
 - b. Occasional activities taking place during the month, e.g., 1-2 classes or volleyball games, etc. (*Cleaned 2x's Monthly*)
 - c. Used regularly by soldiers or outside agencies/personnel. (*Cleaned Regularly - -at least Weekly*)

NOTE: Armories with adjoining Indoor Firing Ranges (IFR) should be cleaned more than weekly, again depending on use of Armory and IFR.

NOTE: Clearance sampling/testing is to be accomplished by certified personnel after these cleanup procedures are followed. If the area is an average Armory, occupied by adults only, for which you are cleaning and **is not a Converted IFR space**, you may continue to utilize the Armory space before the officials re-test this space. Please notify your Safety and/or Occupational Health personnel of the completion of this cleaning regime and they will notify the proper officials of the sampling/testing requirements needed.

If work is contracted out, a third party should do the clearance sampling.

Young children and females who are pregnant, there should be posted signs on all facilities, warning of the potential danger of exposure to lead dust.

UTAH ARMY NATIONAL GUARD

MANTI ARMORY

85 West Union St.
Manti, UT 84642
(435) 835 5241



Submitted to:

Non-Responsive

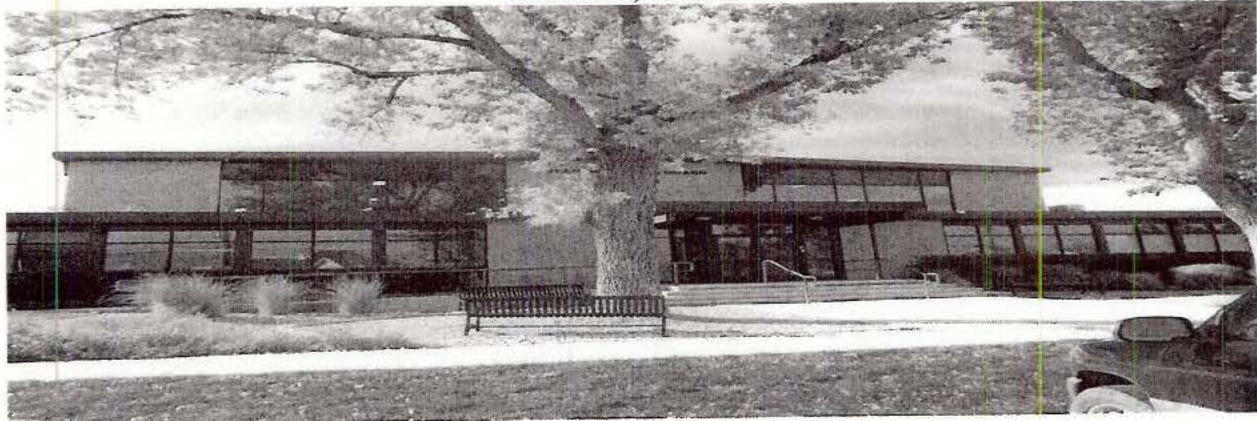
National Guard Bureau
Southwest Region Industrial Hygiene Office
10510 Superfortress Avenue
Suite C
Mather, CA 95655

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3.4	Exhaust and Ventilation Systems
3.5	Hazardous Materials Use and Storage
3.6	Physical Safety and Condition of Facility
3.7	Sound Level Survey
3.8	Illumination Survey
3.9	Safety Policies, Training, and Record Keeping
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Aloha World

INDUSTRIAL HYGIENE ASSISTANCE VISIT MANTI ARMORY MANTI, UTAH



1.0. Introduction and Background

1.1. This report summarizes the results of the Industrial Hygiene (IH) Survey conducted at the Manti Armory in Manti, UT on September 30, 2014. The Army National Guard of Industrial Hygiene Southwest Regional Manager (ARNG-IHSW) requested **Non-Responsive** to visit the Manti Armory to evaluate ventilation, lighting, noise, and verify vehicle and hazardous materials inventories. The IH Survey also included an interview with **Non-Responsive** and **Non-Responsive** regarding industrial hygiene, OSHA training compliance, personnel Federal Employees Compensation Act (FECA) claims, as well as safety standards in the work area. Finally, the IH Assessment included the development of employee profiles as baseline administrative occupational health records for employees. **Non-Responsive** from Aloha World completed this survey.

1.2. The following sections will provide details on how the IH Survey was conducted. A drawing showing the facility layout and sampling locations is included as Attachment E. The most stringent OSHA, ARNG, Corps of Engineers (COE), American National Standards Institute (ANSI), American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) and Design Guide standards in effect at the time of the survey were used to assess the workplace.

1.3. The Manti Armory supports the B Battery 1st 145th FA. The Armory has five full time guard members (**Appendix F**) and approximately 65 guardsmen and women on drill weekend. This armory was constructed in 1968 and was renovated in 2011. The armory has offices used for administrative purposes and also contains a drill floor, arms room, supply room and classroom.

Aloha World

There is a Converted Indoor Firing Range (CIFR) in this facility. The CIFR is now a storage area and part of the drill hall. Weapons are not cleaned in the armory.

Vehicle maintenance is done at FMS 4.

2.0. Survey Procedures

2.1. Lead wipe samples were collected on dusty horizontal floor surfaces in the facility including but not limited to the drill hall floor, storage room and the hall behind the storage room. "Ghost Wipe" brand wipes was used with a 16 square inch template. The wipes used conform to American Standards for Testing Materials E1792-96A, *Standard Specification for Wipe Sampling Materials for Lead in Surface Dust*. The collected wipe samples were placed in clean, labeled centrifuge tubes. Samples were submitted to Reservoir Environmental Services, Inc for analysis via Flame Atomic Absorption, USEPA Method SW846 3050B. Laboratory results are listed in micrograms of lead per square foot ($\mu\text{g}/\text{ft}^2$). Copies of the raw analytical data are presented in **Appendix E**.

A visual inspection of materials utilized in this 1968 constructed building was performed. All accessible areas of the facility were visually inspected to identify suspect asbestos-containing materials (ACM).

Illumination measurements were taken in several areas of the armory using an ExTech Light Meter, Model EA 31. Measurements in the office and classroom areas were taken at typical work locations, such as the tops of desks and near computer workstations.

Exhaust ventilation was measured on the industrial kitchen hood.

Equipment Used

Type	Model Number	Serial Number	Calibration Date
VelociCalc	8386A	54110581	March, 2014
Type	Model Number	Serial Number	Calibration Date
Extech Light Meter	EA31	Z301903	September 2013

3.0. Findings and Recommendations

3.1 **Lead wipe sampling-** Analytical results from the lead wipe sampling obtained from the armory are found in Table 3.1.A. A graphical and written representation of sampling locations can be found in Appendix E along with analytical reports. Photographs were taken of each sample point and are presented in Appendix C. There are currently no standards that dictate what a safe level of lead is from a wipe sample. Lead sampling results can be compared to the protocol outlined in the U.S. Department of Housing and Urban

Aloha World

Army National Guard Armory Survey **(To Be Included In Report)**

Five lead wipe samples collected from drill floor (take samples from dusty horizontal floor surfaces)	✓
Are any weapons cleaned in the facility, if yes where are they cleaned?	✓
Additional lead wipe samples taken from 25% of the rest of the building - (on floor areas only)	✓
Is there a converted indoor firing range ? If so collect additional wipe samples IAW the SOW.	yes
Is there any peeling paint? Take bulk sample if able.	n/a
Are there any signs of water damage or mold?	no
Any suspected ACM ? Where and what condition is it in. Bulk sample if able.	asbestos - tested @ end
Quality of housekeeping	good
HVAC maintenance plan in place?	DCFM
Overall condition of HVAC system	A/C inea room heat - steam
Obtained CO2, Temp, RH monitoring	✓
HAZMAT inventory on hand (make copies for the report), MSDS available for all materials.	✓
HAZMAT storage, Condition of lockers, if outside storage building is used is it ventilated and does it meet OSHA standards.	✓

Fire alarm in working condition - -not usually in place in older armories	yes
Fire extinguishers in place and properly identified and mounted	yes
Evidence of monthly fire extinguisher inspections	no
Annual fire extinguisher inspections tags current	yes
Are eye wash stations available in areas where hazardous materials are used and are they inspected weekly (inspections must be documented)	n/a FMS 4
Egress routes accessible and properly marked - -noted on <u>Fire Evacuation Plan</u>	yes
Training programs in place; Hazcom, Respiratory Protection, Confined Spaces, Hearing conservation, PPE (if applicable)	Hazcom 2x year hearing brief 1 year
Any Photo labs	n/a
Any hazardous noise sources	no
Light levels checked throughout building	✓
Breaker panels properly labeled with no exposed wiring	good
Check building occupancy 1. How many military personnel, how many civilian personnel 2. What types of units occupy facility, i.e. Administrative, Maintenance, etc.?	✓
Any civilian activities in armory (cub scouts, classes, day care, parties etc)	yes
Obtain two lead air samples	On IHSW Request Only



ARMY NATIONAL GUARD INDUSTRIAL HYGIENE - SOUTHWEST

Guam • Hawaii • California • Oregon • Washington • Nevada • Arizona • Idaho • Utah • Wyoming • Montana • New Mexico • Nebraska

Industrial Hygiene Site Assistance Visit

Manti Armory-Converted Indoor Firing Range (CIFR)

85 West Union Street

Manti, UT 84642

30 Sept 14

10510 Superfortress Avenue, Suite C, Mather, CA 95655

(916) 854-1494

Industrial Hygiene Southwest's mission is to ensure all military personnel and military leadership is provided the specialized technical expertise, consultation and assistance to ensure all military operations and processes are conducted in a healthy manner

10510 Superfortress Avenue, Suite C, Mather, CA 95655 (916) 854-1494



DEPARTMENT OF THE ARMY AND AIRFORCE
NATIONAL GUARD BUREAU
INDUSTRIAL HYGIENE SOUTHWEST
10510 Superfortress Ave, Ste. C
Mather, CA 95655

ARNG-CSG-P

19 OCT 2014

MEMORANDUM THRU **Non-Responsive** 12953 Minuteman Dr., ATTN: Deputy State Surgeon,
Draper, UT 84020

FOR Commander, Manti Armory Indoor Firing Range (IFR) 85 West Union Street, Manti, UT 84642

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for Manti Armory Indoor Firing Range (IFR) 85 West Union Street, Manti, UT on 30 SEP 2014

1. References. See survey report.

2. General.

a. At the request of the NGB Industrial Hygiene, Southwest (IHSW) Region, an Industrial Hygiene Site Assistance Visit and cursory review of safety related items and programs was conducted at the Manti Armory Indoor Firing Range (IFR) 85 West Union Street, Manti, UT on 30 SEP 2014.

b. The findings and recommendations in this Executive Summary are controlling and supersede all recommendations in the Industrial Hygiene (IH) report (reference Attachment II). However, IHSW concurs with the observations and findings within the attached IH report.

c. Risk Assessment Codes (RAC) provided in this report have been derived from two sources: Deriving Risk Assessment Codes (RAC's) for Health Hazards (Ref: DOD Instruction 6055.1) and AR 385-10, The Army Safety Program.

d. Use of trademark names in the attached report, or this Executive Summary, does not imply Army National Guard endorsement of any product.

3. Findings. See survey report.

4. Commendable.

a. The facility was generally clean and orderly and personnel were helpful during this IHSAV.

5. Observations / Recommendations.

NOTE: This section provides conclusions and recommendations for the findings and observations made within the attached contractors report. The paragraphs are numbered to correspond to the sections where they were first noted. (i.e., paragraph 2.1a represents the 2.1a located within the contractors report.

a. Conduct annual and monthly inspection of the Fire Extinguishers and record on the tag attached to each fire extinguisher. (para. 3.6) (RAC 3)

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for Manti Armory Indoor Firing Range (IFR) 85 West Union Street, Manti, UT on 30 SEP 2014

6. Violation Correction Log.

a. IHSW has provided a Violation Correction Log derived from the observations from this visit. IHSW recommends the following:

(1) Commander(s) assign an Action OIC/NCOIC, Suspense Date for completion, and Estimated Cost(s) to ensure item completion and corrective status is briefed during quarterly (or monthly) Safety Meetings/Councils until resolved.

(2) Corrective measures should be implemented and accomplished at the lowest levels possible. Hazards and Corrective Measures that cannot be corrected at the facility level, and require assistance from higher headquarters or from the state level, should be elevated to the Quarterly State/BN Safety Council Meeting for resolution.

(3) Recommend a representative from the facility attend all quarterly/monthly meetings to ensure the appropriate emphasis and corrective actions are followed for hazard resolution and abatement of the observations made during this visit.

(4) Retain entries of the items corrected, or closed, for future reference. This may be accomplished by posting completed items within the Corrected Hazard Sheet portion of the Excel Violation Correction Log Workbook we've provided.

(5) The preferred method to document and track identified hazards for resolution is for their entry into the Reserve Component Automation System – Safety and Occupational Health (RCAS-SOH) Program.

b. IHSW recommends further program refinement through written documentation for standardized guidance to the personnel performing the processes. Conducting Hazard Assessments consistent with 29 Code of Federal Regulations (CFR) 1910.132, General Requirements for Personal Protective Equipment and AR 40-5, Preventive Medicine, would provide this continued program refinement.

7. Hazard Assessment/Job Safety Analysis (JSA).

a. Documenting the Hazard Assessments provides a method to obtain initial and periodic review from the Industrial Hygiene, Occupational Health and Safety Professions located at the JFHQ/HQ/state level.

b. The Hazard Assessments should be used as written training materials for the new, transfer and unit personnel working under the auspice of the facility.

c. IHSW recommends facility supervisory staff and facility personnel conduct initial Hazard Assessments outlined in AR 40-5, Army Preventive Medicine (Section V) and 29 CFR 1910.132 and submit for review and obtain approval from the state Industrial Hygiene, Occupational Health and Safety Professions.

d. We have provided an appendix with Hazard Assessments (HA) examples of some of this facilities operations. Additional operations can utilize this format to design HA not observed during this IHSAV.

ARNG-CSG-P

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHS AV) for Manti Armory Indoor Firing Range (IFR) 85 West Union Street, Manti, UT on 30 SEP 2014

e. An integral and important factor of the Hazard Assessment/JSA process is for the review and guidance from qualified Safety, Occupational Health and Industrial Hygiene professions located at the higher headquarters level or state level. For this reason, the Hazard Assessments (to include all pertinent and supporting documents) should be completed by the facility personnel and forward to the Utah Army National Guard Industrial Hygiene, Occupational Health and Safety Office for final review and approval (signature).

f. Job Safety Analysis (JSA's)/Hazard Assessments.

NOTE: The Hazard Assessments can be used for monthly meetings to brief/train, and document large group training events and activities.

8. IHSW recommends the Senior Unit Commander of this Facility and any Co-Tenant Organizations or Units, review and provide assistance with implementation of these recommendations. This will educate the chain of command and allow the unit or co-tenant organizations to take any necessary precautions or actions required by them and their personnel.

9. To assist you with execution of your responsibilities in correcting the observations noted, we encourage you to consult with the State Safety Manager, Occupational Health Manager and Industrial Hygiene professions located and/or authorized within the State Safety and Occupational Health Office.

10. For additional information please contact the NGB-IHSW office at (916) 854-1491 or via email at

Non-Responsive

Non-Responsive

NGB, IHSW, CIV
Regional Industrial
Hygiene Manager



Industrial Hygiene Southwest

Violation Inventory Log

LOG OF SCHEDULE OF CORRECTIVE ACTION - COMPLIANCE WITH SAFETY AND HEALTH STANDARDS

MANTI ARMORY CIFR, UTAH 84642

CONTROL NUMBER	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/NCOIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
CLOSED <input checked="" type="checkbox"/> UTMA-09302014- 3.6	The Fire extinguishers were found to be behind on monthly inspections.	Armory	3	Properly inspect all fire extinguishers on a monthly basis. Document inspection on inspection tag placed on fire extinguisher.					29 CFR 1910.157(b)(1).

- IV. Wastewater in containers can be left to evaporate. Any waste left in the buckets and applicators should be disposed of as hazardous waste. Consult the Environmental Office for appropriate disposal instructions.
- V. Personnel responsible for decontamination of the range and stored items be provided with a full face air purifying respirator with a N100 filter or HEPA filter cartridge providing that all requirements for placing employees in respiratory protection have been met as detailed in 29 1910.134. Employees should be provided with protective coveralls with hood and shoe covers (i.e. Tyvex TM full body suite). If cotton coveralls are provided then the employer must provide for laundering of protective clothing. Protective clothing should not be taken home. Prior to leaving the area, personnel should thoroughly HEPA vacuum the clothing to prevent lead dust from leaving the area. Work and street clothing should not be stored together.

4. Order of Cleaning

- I. A progression of cleaning from top to bottom and from behind the steel backstop to the firing line should be used. All surface areas in the range must be cleaned. Stored items must be decontaminated prior to removal.
- II. After removing the sand/or the steel backstop, areas in front of and behind the bullet trap, along with the steel backstop plates should be cleaned.
- III. The ceilings, lights, baffles, retrieval system, heating system, and ventilation ducts should be cleaned.

- IV. Acoustical material should be vacuumed and removed instead of being painted over. A toxic Characteristic Leaching Procedure (TCLP) test may be used for acoustical material to determine if the material needs to be classified as hazardous and disposed of according to it. The Environmental Office should be contacted regarding this testing.
- V. The floor should be the last surface cleaned starting at the bullet trap and ending behind the firing line, to include the plenum area. Concrete floors should be sealed with deck enamel, or lead paint sealant.
- VI. All walls should be painted, preferably with a lead sealant paint, which will help prevent any leaching of lead after covering.
- VII. Following the wet cleaning of the area and after all surfaces have been allowed to dry thoroughly, a HEPA vacuum should be used on all surfaces, until no dust or residue can be seen. A thorough inspection to detect surface lead dust should be made following cleanup.
- VIII. The Regional Industrial Hygiene Office should be contacted for clearance sampling and to approve the range for converted use.

5. Decontamination of Stored Items

- I. All stored items must be decontaminated before removing from the range, stored equipment next to the bullet trap and firing line should be decontaminated first.

- II. A HEPA vacuum or wet cleaning method should be used. Every attempt should be made to clean the item before disposing as hazardous waste to reduce cost and waste.
- III. Porous items such as canvas tents or other fabrics may be laundered at companies, which specialize in industrial laundry services. Office partitions and carpeting present during firing should be considered grossly contaminated and disposed of as hazardous waste. Consult the Environmental Office before removing and disposing of items.

6. Medical Surveillance

A pre-placement medical examination is required for all individuals involved with range cleanup operations.

7. Air Monitoring

Worker breathing zone air samples must be collected during range cleanup to ensure that workers are not overexposed and to evaluate clean-up procedures.

8. Hazard Training

A training program must be instituted for all individuals who are subject to exposure to lead at or above the action levels, or for whom the possibility of skin or eye irritations exists. This training should be provided for all personnel currently involved in range cleanup operations, at least annually. As required by 29 CFR 1910.1025(l)

*ARMORY*CLEANUP & FOLLOW-UP HOUSEKEEPING
RECOMMENDATIONSMaterials Needed:

1. Cloth Mop head (s) & Mop head holder(s) with handle.
2. Mop bucket (s) with wringer.
3. Clean cotton rags and sponges.
4. Disposable gloves
5. Large barrel (55 gal.) to store wastewater in after changing out of dirty scrub water. Waste water containers.
6. Disposable overshoes or rubber boots. Personnel conducting cleaning operations should not take clothes, boots, etc., home for laundering.
7. HEPA vacuum
8. Six (6) mill plastic bags to dispose of waste.
9. Detergent with surfactant, e.g., Spic-N-Span, Mr. Clean, etc.

Disposal of Waste Water and Cleaning Materials:

1. *NOTE:* Consult with Local Army National Guard Environmental Office prior to taking any collection, disposal or wiping activities commence. Each state and territory may have additional regulatory guidance on collection, storage and disposal of wastewater.
2. Mop heads should be disposed of after initial cleanup, unless otherwise advised by Environmental office personnel. Note: thorough cleaning of mop heads may be sufficient enough to reuse on future Armory cleanups but check with local Environmental Office.
3. Disposable gloves should be treated as hazardous waste.
4. Soiled cotton rags should be treated as hazardous waste.
5. Wash water contaminated with Lead can be collected and allowed to slowly evaporate leaving Lead deposits/sludge that may be collected in plastic containers, placed in metal drums, and stored for future delivery to an authorized hazardous waste disposal site.

- a. Drums shall be properly labeled to identify contents In-Accordance With (IAW) Federal, State and local regulatory guidance.
- b. Disposal of containerized waste shall be coordinated IAW State hazardous waste program requirements.
- c. The Environmental Office shall coordinate removal and disposal of all containerized hazardous waste through established waste streams.

Post-Cleanup Precautionary Measures:

1. Thoroughly wash hands with soap and water.
2. Rinse off rubber boots with soap and water, capturing wastewater for collection into established waste stream. If personnel choose to use over shoes for protection, dispose of overshoes into waste stream. NOTE: This recommendation is for initial clean up activities and PPE requirements may be reduced after it has been determined non-hazardous levels have been achieved.
3. Wash BDU's or personal clothing separately from children's clothes.

NOTE: No eating, drinking or cosmetics allowed during cleanup procedures (these may be allowed after washing of hands/face and done outside of cleanup area)

NOTE: Avoid blowing, shaking or like actions which could potentially disperse lead dust. Dry sweeping, dusting, wiping or blowing with compressed air shall not be permitted

Initial Armory Cleanup:

1. Use a vacuum cleaner equipped with a HEPA exhaust filter. HEPA vacuum all surfaces in the room (ceiling, walls trim, and floors). Start with the ceiling and work down, moving toward the entry door. Completely clean each room before moving on.
2. Prepare water and detergent for the wipe down phase, according to manufactures recommendations.

3. Wet wipe, with cotton rags or sponge, any horizontal, diagonal or vertical surfaces up six (6) feet from floor surfaces using hot water and "Spic-n-Span" or an equivalent product.
 - a. Rinse out cleaning cloths thoroughly and frequently.
 - b. Change out cleaning water as necessary.

NOTE: If walls to be cleaned show signs of deterioration, e.g., chipping or crumbling paint, in which wiping, scrubbing, or disrupting might potentially increase or spread contamination, then this portion of the clean up should be avoided.

4. Now prepare water and detergent (e.g. Spic N Span, Mr. Clean, Pine Sol) for the mopping phase, according to manufactures recommendations, which should be found on the products label for general clean up.
 - a. Change out water frequently (when water appears dirty)
 - b. Rinse out mop heads frequently to prevent contamination of dirty water.
5. Cover entire drill floor surface with above prescribed water and detergent.
6. Final rinse should be with clean water only - -after mop heads have been cleaned.

Recommended Follow-up Housekeeping Practices *after Clearance sampling of cleaned area is performed by certified personnel:*

1. Floor cleaning and dusting should be accomplished using the wet method described in Initial Armory Cleanup SOP.

Note: Only exception to these wet cleaning procedures would be the use of a chemically treated dust floor mop. This can be used for follow-up armory cleaning by sweeping of large particles of dirt and paper.

- a. Pre-treated (chemically treated) dust floor mop will limit dust particles from being disbursed into the surround atmosphere.

- b. If treated dust mop is used - -Do Not Shake Mop head - - have mop head laundered after use. Always keep used dust mop heads in sealed double plastic bags when stored at armory/facility. Shaking of mop head could release unwanted contaminants into surrounding atmosphere.
2. Frequency of Cleanup- Armories will vary, according to usage and how often they should be cleaned. The following general cleaning schedule is provided:
 - a. Only full-time technicians and traditional soldiers using facility during the month. (*Cleaned Monthly*)
 - b. Occasional activities taking place during the month, e.g., 1-2 classes or volleyball games, etc. (*Cleaned 2x's Monthly*)
 - c. Used regularly by soldiers or outside agencies/personnel. (*Cleaned Regularly - -at least Weekly*)

NOTE: Armories with adjoining Indoor Firing Ranges (IFR) should be cleaned more than weekly, again depending on use of Armory and IFR.

NOTE: Clearance sampling/testing is to be accomplished by certified personnel after these cleanup procedures are followed. If the area is an average Armory, occupied by adults only, for which you are cleaning and **is not a Converted IFR space**, you may continue to utilize the Armory space before the officials re-test this space. Please notify your Safety and/or Occupational Health personnel of the completion of this cleaning regime and they will notify the proper officials of the sampling/testing requirements needed.

If work is contracted out, a third party should do the clearance sampling.

Young children and females who are pregnant, there should be posted signs on all facilities, warning of the potential danger of exposure to lead dust.

UTAH ARMY NATIONAL GUARD

MANTI ARMORY

85 West Union St.
Manti, UT 84642
(435) 835 5241



Submitted to:

Non-Responsive

National Guard Bureau
Southwest Region Industrial Hygiene Office
10510 Superfortress Avenue
Suite C
Mather, CA 95655

INDUSTRIAL HYGIENE ASSISTANCE VISIT MANTI ARMORY MANTI, UTAH



1.0 Introduction and Background

1.1. This report summarizes the results of the Industrial Hygiene (IH) Site Assistant Visit (SAV) conducted at the Manti Armory in Manti, Utah on September 30, 2014. The Army National Guard Industrial Hygiene Southwest (ARNG-IHSW) requested **Non-Responsive** to visit the Manti Armory to follow-up and evaluate potential high lead. This IH SAV also includes interviews with **Non-Responsive** regarding industrial hygiene issues as well as any change in operations in the work area that might affect the workers health and safety. **Non-Responsive** from Aloha World completed this survey.

1.2. The following sections will provide details on how the IH Survey was conducted. A drawing showing the facility layout and sampling locations is included as **Attachment D**. The most stringent OSHA, ARNG, Corps of Engineers (COE), American National Standards Institute (ANSI), American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) and Design Guide standards in effect at the time of the survey were used to assess the workplace.

1.3. The Manti Armory has five full time guard members. This armory was constructed in 1968. This armory has offices used for administrative purposes and also contains a drill floor, arms room, classrooms, industrial kitchen and storage. Maintenance service is not done at this site. Maintenance is done in FMS 4.

1.4 There is a Converted Indoor Firing Range (CIFR) in this facility. The ventilation system, firing lines, lighting and bullet stop have all been removed. The firing range is now part of the Drill Hall and a storage area. The armory was renovated in 2011. Lead samples were taken in the storage room, the drill hall and the hallway behind the storage room. Lead wipe samples results could not be obtained from the time of conversion.

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2.0 Survey Procedures and Equipment Used

Lead wipe samples were collected on dusty horizontal floor surfaces in the facility including but not limited to the drill floor and the CIFR area (the two storage rooms and the entrance to the weight room). "Ghost Wipe" brand wipes were used with a 16 square inch template. The wipes used conform to American Standards for Testing Materials E1792-96A, *Standard Specification for Wipe Sampling Materials for Lead in Surface Dust*. The collected wipe samples were placed in clean, labeled centrifuge tubes. Samples were submitted to Reservoir Environmental Services, Inc for analysis via Flame Atomic Absorption, USEPA Method SW846 3050B. Laboratory results are listed in micrograms of lead per square foot ($\mu\text{g}/\text{ft}^2$). Copies of the raw analytical data are presented in **Appendix D**.

Samples were submitted to Reservoir Environmental Services, Inc, Denver, Colorado, for analysis via Flame Atomic Absorption.

3.0. Findings and Recommendations

3.1. Lead wipe sampling- Analytical results from the lead wipe sampling obtained from the armory are found in Table 3.1.A. A graphical and written representation of sampling locations can be found in **Appendix D** along with analytical reports. Photographs were taken of each sample point and are presented in **Appendix C**. There are currently no standards that dictate what a safe level of lead is from a wipe sample. Lead sampling results can be compared to the protocol outlined in the U.S. Department of Housing and Urban Development's (HUD's) *Guidelines For The Evaluation And Control Of Lead-Based Paint Hazards In Housing*, June 1997. HUD currently recommends an exposure limit of $40 \mu\text{g}/\text{ft}^2$. This guideline was established to prevent lead exposure to children in domestic homes, along with females who are pregnant. Areas that have levels that exceed $40 \mu\text{g}/\text{ft}^2$ should be thoroughly cleaned and employees that may come into contact with those areas should be properly trained in the hazards of lead exposure

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**Table 3.1.A.
Lead Wipe**

Sample ID	AREA	Photo #	Result ug/ft2
093014-1	Control	NA	BDL
093014-2	North drill hall	2	BDL
093014-3	Center drill hall	3	BDL
093014-4	South drill hall	4	BDL
093014-5	West drill hall	5	BDL
093014-6	East drill hall	6	BDL
093014-7	North CFR	7	BDL
093014-8	Center CFR	8	BDL
093014-9	South CFR	9	BDL
093014-10	West CFR	10	BDL
093014-11	East CFR	11	BDL
093014-12	Behind storage CFR	12	BDL

BDL= Below Detection Limits

ug/ ft2= Micrograms per Square Foot

NOTE: Cleaning of working environment should be continued throughout the armory, especially in the CFR and weapons cleaning areas. Please utilize the attached SOP and general information paper provided for cleaning procedures.

3.2. Operational Changes Noted- None found.

3.3. Physical Safety and Condition of Facility- A physical walk through of the facility was conducted. Overall, housekeeping was found to be in above average condition. The Manti Armory was renovated in 2011.

This 1968 building is of concrete block and brick construction. No water leakage was detected.

A fire evacuation plan was posted throughout the armory.

The fire extinguishers within this facility are part of the fire suppression available and should be tested annually and inspected monthly. NFPA 10, 27-3.4.1 addresses alarm systems and 29 CFR 1910.157 addresses inspection requirements for fire extinguishers. Annual inspections should be accomplished by a qualified organization, e.g., fire department, and checked and documented monthly by the facilities personnel. The fire extinguishers were found to be current on annual but behind on monthly inspections. A fire alarm system is in place and per SFC Anderson is in working order.

Recommendation: The Fire extinguishers were found to be behind on monthly inspections. Properly inspect all fire extinguishers on an annual and monthly basis. [29 CFR 1910.157(b)(1)].

3.4. **Recurring Events:** We were unable to obtain any previous surveys for this armory.

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4.0 Industrial Hygienist Certification/Project Limitations

All Industrial Hygiene Assessment techniques and tests used in the Industrial Hygiene survey of the Army National Guard Armories were reviewed by **Non-Responsive** Industrial Hygiene Southwest, National Guard Bureau at (916) 854-1492

This Project was performed using, as a minimum, practices consistent with standards acceptable within the industry at this time, and a level of diligence typically exercised by industrial hygiene and environmental consultants performing similar services.

The procedures used in this investigation attempt to establish a balance between the competing goals of limiting investigative and reporting costs and time, and reducing the uncertainty about unknown conditions. Therefore, because the findings of this report were derived from the scope, costs, time, and other limitations, the conclusions should not be construed as a guarantee that all environmental or occupational hazards have been identified and fully evaluated. Where sample collection and testing have been performed, Aloha World's professional opinions are based in part on the interpretation of data from discrete sampling locations that may not represent conditions at non-sampled locations. Aloha World assumes no responsibility for omissions or errors resulting from inaccurate information or data provided by sources outside of Aloha World, or from omissions or errors in public records.

Furthermore, it is emphasized that the final decision on how much risk to accept always remains with the client since Aloha World is not in a position to fully understand all of the client's needs. Clients with a greater aversion to risk may want to take additional actions while others, with less aversion to risk, may want to take no further action

5.0 Technical Assistance

For technical assistance regarding information found in this report or the performed survey, please contact **Non-Responsive** of the Southwest Regional Industrial Hygiene Office, (916) 854-1491. Contact the State Safety, State Industrial Hygiene and Occupational Health Office and/or the Regional Industrial Hygienist should any of the operations change, or should the personnel become incapable of following the previous recommendations and subsequent recommendations are needed.

Non-Responsive

Aloha World

Aloha World

Appendix A References

American Conference of Governmental Industrial Hygienists (ACGIH), Industrial Ventilation, A Manual of Recommended Practice, 23 Edition, 1998.

American Conference of Governmental Industrial Hygienists (ACGIH), Threshold Limit Values for Chemical Substances and Physical Agents and Biological Indices for 1998.

American National Standards Institute (ANSI)/Illuminating Engineering Society (IES), Industrial Lighting 1991.

American National Standards Institute, Z358. 1-1998. Emergency Eyewash and Shower Equipment 1998.

AR 40-5, Preventative Medicine, 15 October 1990.

AR 385-10, The Army Safety Program, 23 May 1988.

Corps of Engineers Guide Specification, CEGS-1585 1, Overhead vehicle tailpipe (and welding fume) Exhaust Systems, May 1984.

DA PAM 40-ERG, Ergonomics

DA PAM 40-501, Hearing Conservation, 27 August 1991.

National Safety Council, Fundamentals of Industrial Hygiene, 4~ edition, 1996.

NOR 385-10, Army National Guard Safety and Occupational Health Program, 29 December 1989.

TB MED 503, The Army Industrial Hygiene Program, February 1985.

TG022, US Army Environmental Hygiene Agency (USAEHA), Industrial Hygiene Evaluation Guide, October 1975

TG 141, US Army for Health Promotion and Preventive Medicine (USACHPPM) Industrial Hygiene Air Sampling Guide, Nov. 1997

Title 29, Code of Federal Regulations (CFR), 1998, revision Part 1910, Occupational Safety and Health Standards

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Recommendations

1. The Fire extinguishers were found to be behind on monthly inspections. Properly inspect all fire extinguishers on an annual and monthly basis. [29 CFR 1910.157(b)(1)].

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Appendix C

Photograph Log

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Photo Log



Photo #1 – Manti Armory

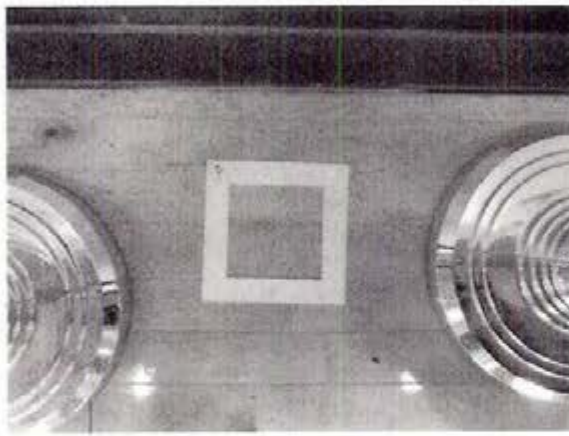


Photo #2- North drill hall wipe

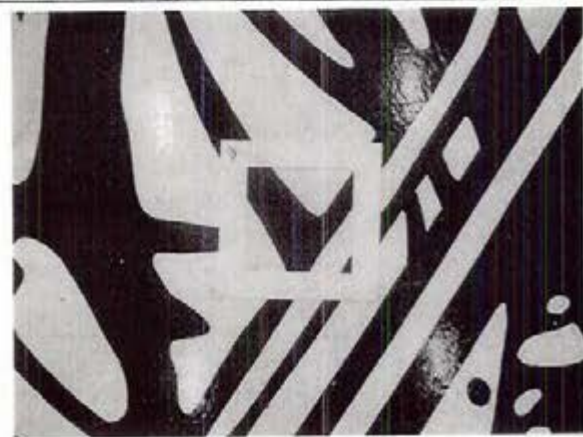


Photo #3- Center drill hall wipe

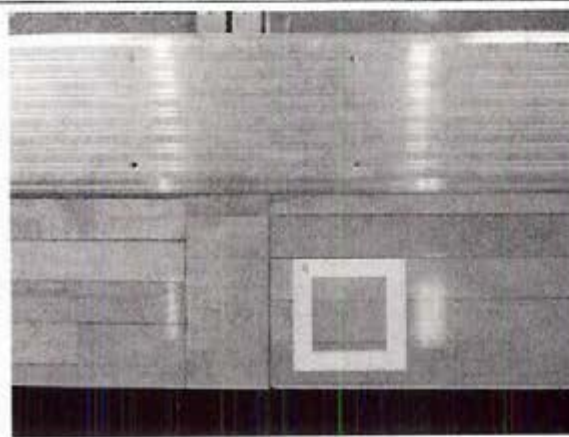


Photo #4- South drill hall wipe

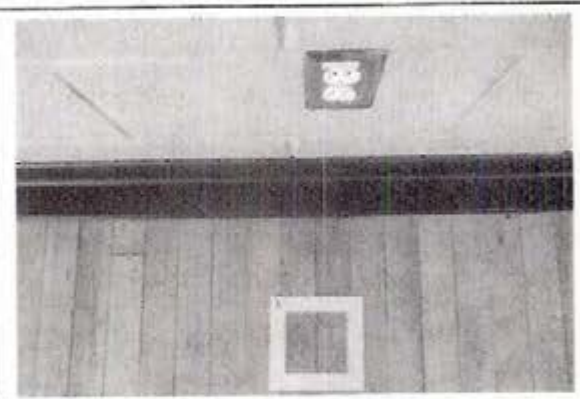


Photo #5 – West drill hall wipe

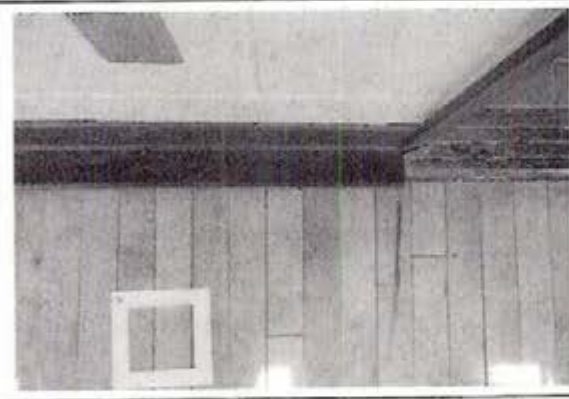


Photo #6 – East drill hall wipe

Photo Log

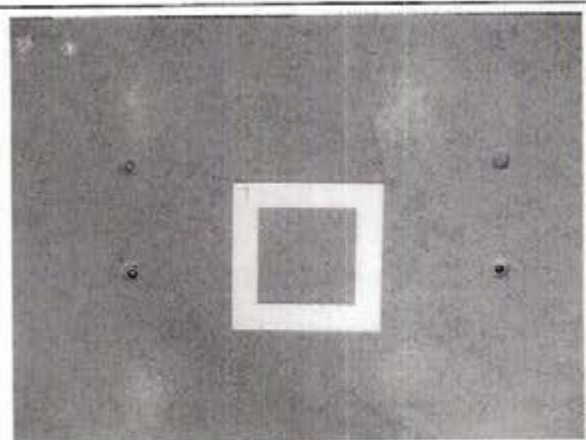


Photo #7 – North CIFR wipe

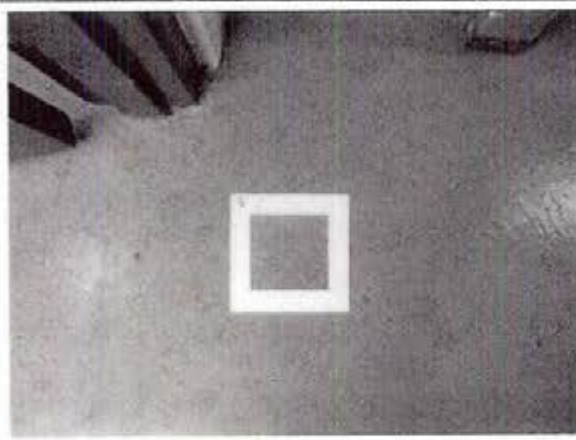


Photo #8- Center CIFR wipe

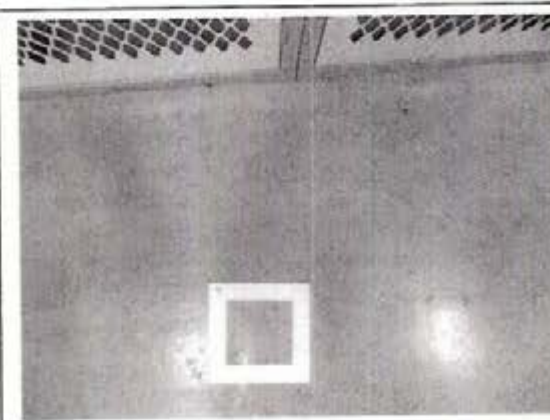


Photo #9 – South CIFR wipe

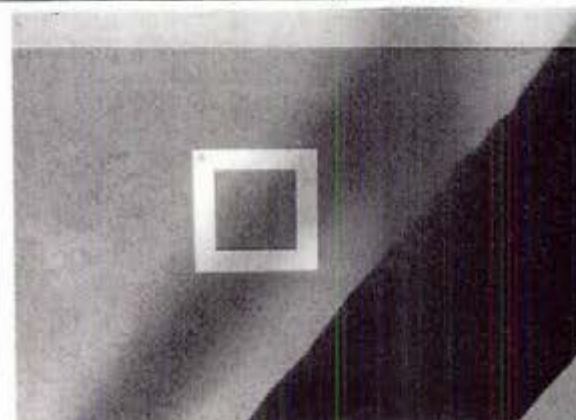


Photo #10 – West CIFR wipe

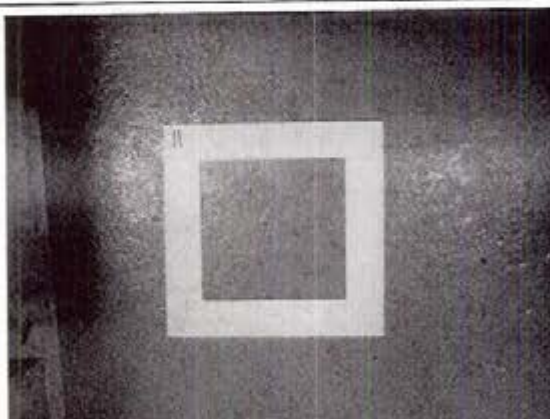


Photo #11 –East CIFR wipe

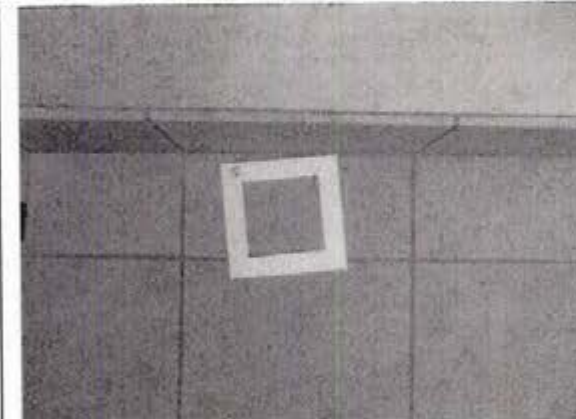


Photo #12 –Behind CIFR wipe

Photo Log



Photo #13-Drill Hall/CIFR

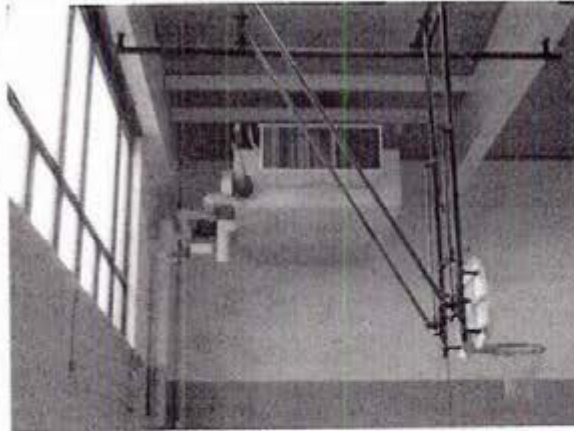


Photo #14-Heating System

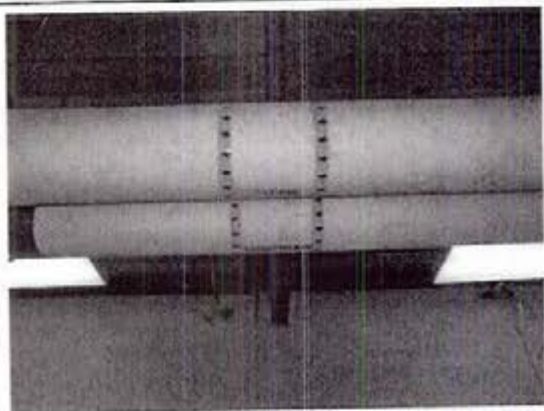


Photo #15-Heating in CIFR storage



Photo #16-Flammable lockers



Phot #17-Janitorial storage

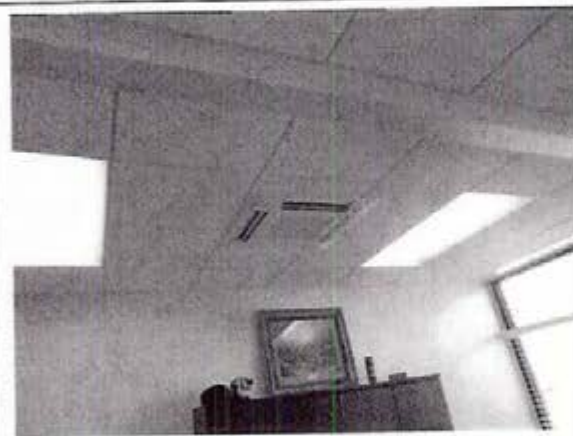


Photo #18-A/C offices

Appendix D

Laboratory Analysis Reports Sample Location & Log

Aloha World

RESERVOIRS ENVIRONMENTAL, INC.

5801 Logan St., Suite 100
Denver CO 80216

TABLE ANALYSIS: LEAD BY WIPE SAMPLING

RES Job Number: RES 302219-1
Client: Aloha World
Client Project Number / P.O.: 093014
Client Project Description: Manti Armory
Date Samples Received: October 4, 2014
Analysis Type: USEPA SW846 3050B / AA (7420)
Turnaround: 3-5 Day
Date Samples Analyzed: October 8, 2014

Client ID Number	Lab ID Number	Sample Area (sq.ft.)	LEAD (µg)	Reporting Limit (µg/ft ²)	LEAD CONCENTRATION (µg/ft ²)
093014-1 Bathroom	EM 1270404	0.11	BRL	56.8	BRL
093014-2 Drill Hall North	EM 1270405	0.11	BRL	56.8	BRL
093014-3 Drill Hall Center	EM 1270406	0.11	BRL	56.8	BRL
093014-4 Drill Hall South	EM 1270407	0.11	BRL	56.8	BRL
093014-5 Drill Hall West	EM 1270408	0.11	BRL	56.8	BRL
093014-6 Drill Hall East	EM 1270409	0.11	BRL	56.8	BRL
093014-7 CIFR North	EM 1270410	0.11	BRL	56.8	BRL
093014-8 Center	EM 1270411	0.11	BRL	56.8	BRL
093014-9 South	EM 1270412	0.11	BRL	56.8	BRL
093014-10 West	EM 1270413	0.11	BRL	56.8	BRL
093014-11 East	EM 1270414	0.11	BRL	56.8	BRL
093014-12 Behind CIFR	EM 1270415	0.11	BRL	56.8	BRL

*Calculations Based On A 1 sq.ft. Sample Area Unless Otherwise Noted

* Unless otherwise noted all quality control samples performed within specifications established by the laboratory.

BRL = Below Reporting Limit

P: 303-964-1986
F: 303-477-4275

5801 Logan Street, Suite 100 Denver, CO 80216

Page 2 of 2

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May, 2018

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Page 909 of 1683

Data



Appendix E

Violation Inventory Log

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Industrial Hygiene Southwest

Violation Inventory Log

LOG OF SCHEDULE OF CORRECTIVE ACTION - COMPLIANCE WITH SAFETY AND HEALTH STANDARDS

MANTI ARMORY CIFR, UTAH 84642

CONTROL NUMBER	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/NCOIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
UTMA-09302014- 3.6 CLOSED <input checked="" type="checkbox"/>	The Fire extinguishers were found to be behind on monthly inspections.	Armory	3	Properly inspect all fire extinguishers on a monthly basis. Document inspection on inspection tag placed on fire extinguisher.					29 CFR 1910.157(b)(1)]



ARMY NATIONAL GUARD INDUSTRIAL HYGIENE - SOUTHWEST

Guam • Hawaii • California • Oregon • Washington • Nevada • Arizona • Idaho • Utah • Wyoming • Montana • New Mexico • Nebraska

Industrial Hygiene Site Assistance Visit

Mount Pleasant Armory
525 West 1000 South
Mount Pleasant, UT 84647

10510 Superfortress Avenue, Suite C, Mather, CA 95655 (916) 854-1491

81



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DEPARTMENT OF THE ARMY AND AIRFORCE
NATIONAL GUARD BUREAU
INDUSTRIAL HYGIENE SOUTHWEST
10510 Superfortress Ave, Ste. C
Mather, CA 95655

6 February 2013

ARNG-CSG-IHSW

MEMORANDUM THRU Utah Army National Guard, ATTN:
12953 S. Minuteman Drive, Draper, UT 84020-1776

Non-Responsive (OHN),

FOR Commander, Mount Pleasant Armory 525 West 1000 South, Mount Pleasant, UT 84647

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHSW) for the Mount Pleasant Armory, 525 West 1000 South, Mount Pleasant, Utah conducted on 30 July 2012.

1. References. See survey report.

2. General.

a. At the request of the NGB Industrial Hygiene, Southwest (IHSW) Region, an Industrial Hygiene Site Assistance Visit and cursory review of safety related items and programs was conducted at the Mount Pleasant Armory, 525 West 1000 South, Mount Pleasant, UT on 30 JUL 2012.

b. The findings and recommendations in this Executive Summary are controlling and supersede all recommendations in the contractor report (reference Attachment II). However, IHSW concurs with the observations and findings within the attached contractor report.

c. Risk Assessment Codes (RAC) provided in this report have been derived from two sources: Deriving Risk Assessment Codes (RAC's) for Health Hazards (Ref: DOD Instruction 6055.1) and AR 385-10, The Army Safety Program.

d. Use of trademark names in the attached report, or this Executive Summary, does not imply Army National Guard endorsement of any product.

3. Findings. See survey report.

4. Commendable.

a. The facility was generally clean and orderly and personnel were helpful during this SAV.

5. Observations / Recommendations.

NOTE: This section provides conclusions and recommendations for the findings and observations made within the attached contractors report. The paragraphs are numbered to

ARNG-CSG-IHSW

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for the Mount Pleasant Armory, 525 West 1000 South, Mount Pleasant, Utah conducted on 30 July 2012.

correspond to the sections where they were first noted. (i.e., paragraph 2.1a represents the 2.1a located within the contractors report.

- a. Lead Paint was found within the hallway of 32 Potter and garage of 31 Potter areas. Construction personnel must follow the requirements of the OSHA Lead in Construction Standard 29 CFR 1926.62 before performing construction activities that affect this painted surface. (para. 4.2) (RAC 3)
- b. Assure construction personnel and allied trades personnel are given awareness training on lead paint and asbestos materials associated with the buildings they are working in. (para. 4.4) (RAC 4)
- c. Find asbestos survey or have one accomplished and provide assigned personnel with asbestos awareness training. (para. 4.4) (RAC 3)
- d. Clean and decontaminate the lead dust in Converted Indoor Firing Range by utilizing Armory Clean-Up SOP. Improve housekeeping practices so migration of heavy metals will be prevented. (para. 4.1) (RAC 3)
- e. Repair and replace the GFCI outlets that are within 6 feet of a water source. (para. 4-10) (RAC 4)
- f. Ensure all fire extinguishers are provided a monthly inspection and document these inspections on the attach tag. (para. 4.10) (RAC 4)

6. Violation Correction Log.

a. IHSW has provided a Violation Correction Log derived from the observations from this visit. IHSW recommends the following:

1. Commander(s) assign an Action OIC/NCOIC, Suspense Date for completion, and Estimated Cost(s) to ensure item completion and corrective status is briefed during quarterly (or monthly) Safety Meetings/Councils until resolved.
2. Corrective measures should be implemented and accomplished at the lowest levels possible. Hazards and Corrective Measures that cannot be corrected at the facility level, and require assistance from higher headquarters or from the state level, should be elevated to the Quarterly State/BN Safety Council Meeting for resolution.
3. Recommend a representative from the facility attend all quarterly/monthly meetings to ensure the appropriate emphasis and corrective actions are followed for hazard resolution and abatement of the observations made during this visit.

ARNG-CSG-IHSW

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for the Mount Pleasant Armory, 525 West 1000 South, Mount Pleasant, Utah conducted on 30 July 2012.

4. Retain entries of the items corrected, or closed, for future reference. This may be accomplished by posting completed items within the Corrected Hazard Sheet portion of the Excel Violation Correction Log Workbook we've provided.

5. The preferred method to document and track identified hazards for resolution is for their entry into the Reserve Component Automation System – Safety and Occupational Health (RCAS-SOH) Program.

b. IHSW recommends further program refinement through written documentation for standardized guidance to the personnel performing the processes. Conducting Hazard Assessments consistent with 29 Code of Federal Regulations (CFR) 1910.132, General Requirements for Personal Protective Equipment and AR 40-5, Preventive Medicine, would provide this continued program refinement.

7. Hazard Assessment/Job Safety Analysis (JSA).

a. Documenting the Hazard Assessments provides a method to obtain initial and periodic review from the Industrial Hygiene, Occupational Health and Safety Professions located at the JFHQ/HQ/state level.

b. The Hazard Assessments should be used as written training materials for the new, transfer and unit personnel working under the auspice of the facility.

c. IHSW recommends facility supervisory staff and facility personnel conduct initial Hazard Assessments outlined in AR 40-5, Army Preventive Medicine (Section V) and 29 CFR 1910.132 and submit for review and obtain approval from the state Industrial Hygiene, Occupational Health and Safety Professions.

d. We have provided an appendix with Hazard Assessments (HA) examples of some of this facilities operations. Additional operations can utilize this format to design HA not observed during this SAV.

e. An integral and important factor of the Hazard Assessment/JSA process is for the review and guidance from qualified Safety, Occupational Health and Industrial Hygiene professions located at the higher headquarters level or state level. For this reason, the Hazard Assessments (to include all pertinent and supporting documents) should be completed by the facility personnel and forward to the Utah Army National Guard Industrial Hygiene, Occupational Health and Safety Office for final review and approval (signature).

f. Job Safety Analysis (JSA's)/Hazard Assessments.

NOTE: The Hazard Assessments can be used for monthly meetings to brief/train, and document large group training events and activities.

ARNG-CSG-IHSW

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for the Mount Pleasant Armory, 525 West 1000 South, Mount Pleasant, Utah conducted on 30 July 2012.

8. IHSW recommends the **Senior Unit Commander of this Facility and any Co-Tenant Organizations or Units, review and provide assistance with implementation of these recommendations.** This will educate the chain of command and allow the unit or co-tenant organizations to take any necessary precautions or actions required by them and their personnel.

9. To assist you with execution of your responsibilities in correcting the observations noted, we encourage you to consult with the State Safety Manager, Occupational Health Manager and Industrial Hygiene professions located and/or authorized within the State Safety and Occupational Health Office.

10. For additional information please contact the undersigned at (916) 854-1491 or via email at

Non-Responsive

Non-Responsive

FOR
NGB, IHSW, CIV
Industrial Hygiene



Industrial Hygiene Southwest

Violation Inventory Log

LOG OF SCHEDULE OF CORRECTIVE ACTION - COMPLIANCE WITH SAFETY AND HEALTH STANDARDS Mount Pleasant Armory, Mount Pleasant, Utah

CONTROL NUMBER	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/INCOIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
UTMPA-073012-4.1 <input type="checkbox"/>	The analytical results for lead on the former indoor firing range room floor was 310 µg/ft ² .	Mount Pleasant Armory	3	Clean the floor of the former indoor firing range to a lead concentration of less than 40 mg/ft ² following the guidance in the attached SOPs.					IHSW SOP Lead, 29 CFR 1910.1025 (h)(1)
UTMPA-073012-4.4 <input type="checkbox"/>	An asbestos survey could not be located during this IH Assistance Visit.	Mount Pleasant Armory	3	Either locate the asbestos survey for this building or contract with a licensed firm to perform an asbestos survey and assessment.					29 CFR 1910.1001(j)(3)(i)
UTMPA-073012-4.4 <input type="checkbox"/>	Personnel have not been provided with asbestos awareness training.	Mount Pleasant Armory	4	Based on the findings of this survey, provide awareness training to assigned personnel for the specific types of asbestos in this Armory.					29 CFR 1910.1001
UTMPA-073012-4.7 <input type="checkbox"/>	Safety Training could not be located at this facility.	Mount Pleasant Armory	4	At a minimum, provide hazard communication training to those who use chemicals in the work place and fire prevention training, fire safety, and fire extinguisher training to all personnel who occupy the facility.					29 CFR 1910.1200 (h), 29 CFR 1910.157 (g), 29 CFR 1910.39 (b)
UTMPA-073012-4.10 <input type="checkbox"/>	Fire extinguishers have not been inspected monthly.	Mount Pleasant Armory	4	Ensure all fire extinguishers are provided a monthly inspection and document these inspections on the attached inspection cards.					29 CFR 1910.157 (e) (2) & (3) and NFPA-10-2007, Para 7.2.1.2 & 7.3.1.1.1
UTMPA-073012-4.10 <input type="checkbox"/>	Three outlets in the dish wash room, two on the west wall of Room 135, one under the fire extinguisher by the door to Room 136, and one on the south wall of Room 136 are marked GFCI protected but are not GFCI protected.	Mount Pleasant Armory	4	Repair or replace the GFCI outlets that are within six feet of a water source.					NFPA 70, Article 210-8

- a. Drums shall be properly labeled to identify contents In-Accordance With (IAW) Federal, State and local regulatory guidance.
- b. Disposal of containerized waste shall be coordinated IAW State hazardous waste program requirements.
- c. The Environmental Office shall coordinate removal and disposal of all containerized hazardous waste through established waste streams.

Post-Cleanup Precautionary Measures:

1. Thoroughly wash hands with soap and water.
2. Rinse off rubber boots with soap and water, capturing wastewater for collection into established waste stream. If personnel choose to use over shoes for protection, dispose of overshoes into waste stream. NOTE: This recommendation is for initial clean up activities and PPE requirements may be reduced after it has been determined non-hazardous levels have been achieved.
3. Wash BDU's or personal clothing separately from children's clothes.

NOTE: No eating, drinking or cosmetics allowed during cleanup procedures (these may be allowed after washing of hands/face and done outside of cleanup area)

NOTE: Avoid blowing, shaking or like actions which could potentially disperses lead dust. Dry sweeping, dusting, wiping or blowing with compressed air shall not be permitted

Initial Armory Cleanup:

1. Use a vacuum cleaner equipped with a HEPA exhaust filter. HEPA vacuum all surfaces in the room (ceiling, walls trim, and floors). Start with the ceiling and work down, moving toward the entry door. Completely clean each room before moving on.
2. Prepare water and detergent for the wipe down phase, according to manufactures recommendations.

3. Wet wipe, with cotton rags or sponge, any horizontal, diagonal or vertical surfaces up six (6) feet from floor surfaces using hot water and "Spic-n-Span" or an equivalent product.
 - a. Rinse out cleaning cloths thoroughly and frequently.
 - b. Change out cleaning water as necessary.

NOTE: If walls to be cleaned show signs of deterioration, e.g., chipping or crumbling paint, in which wiping, scrubbing, or disrupting might potentially increase or spread contamination, then this portion of the clean up should be avoided.

4. Now prepare water and detergent (e.g. Spic N Span, Mr. Clean, Pine Sol) for the mopping phase, according to manufactures recommendations, which should be found on the products label for general clean up.
 - a. Change out water frequently (when water appears dirty)
 - b. Rinse out mop heads frequently to prevent contamination of dirty water.
5. Cover entire drill floor surface with above prescribed water and detergent.
6. Final rinse should be with clean water only - -after mop heads have been cleaned.

Recommended Follow-up Housekeeping Practices *after Clearance sampling of cleaned area is performed by certified personnel:*

1. Floor cleaning and dusting should be accomplished using the wet method described in Initial Armory Cleanup SOP.

Note: Only exception to these wet cleaning procedures would be the use of a chemically treated dust floor mop. This can be used for follow-up armory cleaning by sweeping of large particles of dirt and paper.

- a. Pre-treated (chemically treated) dust floor mop will limit dust particles from being disbursed into the surround atmosphere.

- b. If treated dust mop is used - -Do Not Shake Mop head - - have mop head laundered after use. **Always keep used dust mop heads in sealed double plastic bags when stored at armory/facility.** Shaking of mop head could release unwanted contaminants into surrounding atmosphere.
2. Frequency of Cleanup- Armories will vary, according to usage and how often they should be cleaned. The following general cleaning schedule is provided:
- a. Only full-time technicians and traditional soldiers using facility during the month. (*Cleaned Monthly*)
 - b. Occasional activities taking place during the month, e.g., 1-2 classes or volleyball games, etc. (*Cleaned 2x's Monthly*)
 - c. Used regularly by soldiers or outside agencies/personnel. (*Cleaned Regularly - -at least Weekly*)

NOTE: Armories with adjoining Indoor Firing Ranges (IFR) should be cleaned more than weekly, again depending on use of Armory and IFR.

NOTE: Clearance sampling/testing is to be accomplished by certified personnel after these cleanup procedures are followed. If the area is an average Armory, occupied by adults only, for which you are cleaning and **is not a Converted IFR space**, you may continue to utilize the Armory space before the officials re-test this space. Please notify your Safety and/or Occupational Health personnel of the completion of this cleaning regime and they will notify the proper officials of the sampling/testing requirements needed.

If work is contracted out, a third party should do the clearance sampling.

Young children and females who are pregnant, there should be posted signs on all facilities, warning of the potential danger of exposure to lead dust.

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IH ASSISTANCE VISIT

**Utah Army National Guard
Mount Pleasant Armory
525 West 1000 South
Mount Pleasant, Utah 84647**

December 4, 2012

Prepared for:

**Industrial Hygiene Southwest
10510 Superfortress Avenue, Suite C
Mather, California 95655**

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EXECUTIVE SUMMARY

On July 30, 2012, [Non-Responsive] of IHI Environmental (IHI) conducted an IH Assistance Visit at the Mount Pleasant Armory in Mount Pleasant, Utah. The primary point of contact for information gathered during this survey was [Non-Responsive] (435) 462-2515,

[Non-Responsive]

The objectives of this IH Assistance Visit were to perform the following activities:

- collect lead wipe samples;
- evaluate the condition of painted surfaces and collect paint chip samples for lead analysis where painted surfaces are peeling;
- inspect the interior rooms of the armory for water damage and the presence of fungal growth;
- review asbestos survey and assessment files and determine if documentation of asbestos awareness training is current;
- evaluate the condition of the Heating, Ventilation, and Air-Conditioning system, and collect indoor air quality data;
- review hazardous material storage and use procedures;
- review safety training and record keeping;
- perform a ventilation survey on the kitchen stove hood (if present);
- perform a noise survey on the kitchen appliances; and
- conduct a safety walk-through evaluation and note any existing safety hazards.

Significant findings for this IH Assistance Visit can be found in the Industrial Hygiene Southwest – Violation Inventory Log, located in Appendix K of this report.

The report that follows this Executive Summary should be read in its entirety because it includes important information not included in this summary, such as task descriptions, work space locations, regulatory requirements, and additional recommendations.

1.0 INTRODUCTION

On July 30, 2012, [Non-Responsive] of IHI Environmental (IHI) conducted an IH Assistance Visit at the Mount Pleasant Armory located at 525 West 1000 South, Mount Pleasant, Utah 84647. The primary point of contact for information gathered during this survey was SSG [Non-Responsive] 435) 462-2515, [Non-Responsive]

1.1 Objectives

Evaluate the occupational environment of the administrative areas in the armory to determine the presence of operational health and safety risks, and make recommendations for corrective actions or follow-up work to manage those risks.

1.2 Scope of Work

To achieve the above objectives at this facility, the survey included the following work:

- collect lead wipe samples;
- evaluate the condition of painted surfaces and collect paint chip samples for lead analysis where painted surfaces are peeling;
- inspect the interior rooms of the armory for water damage and the presence of fungal growth;
- review asbestos survey and assessment files and determine if documentation of asbestos awareness training is current;
- evaluate the condition of the Heating, Ventilation, and Air-Conditioning system and collect indoor air quality data;
- review hazardous material storage and use procedures;
- review safety training, and record keeping;
- perform a ventilation survey on the kitchen stove hood (if present);
- perform a noise survey on the kitchen appliances; and
- conduct a safety walk-through evaluation and note any existing safety hazards.

2.0 PROCESS DESCRIPTION

The Mount Pleasant Armory has three full-time guard members. The armory has offices used for administrative purposes, a training area, drill floor, a converted indoor firing range, storage rooms, restrooms and locker rooms, kitchen, gun vault, and a mechanical room. There are no civilian employees at this armory. This armory is not used for any civilian activities.

Army National Guard members do not clean weapons at this armory. Weapons are reportedly cleaned at Camp Williams, if needed.

3.0 METHODS AND APPLICABLE REGULATIONS AND STANDARDS

3.1 Lead Wipe Sampling

Lead residue (dust) wipe samples were collected on horizontal surfaces, such as the drill floor, kitchen, administrative areas, and indoor firing ranges (where present) to determine housekeeping standards. Lead Wipe™ brand wipes were used with a 100-square-centimeter template. The wipes used conform to American Society for Testing and Materials (ASTM) E1792, *Standard Specification for Wipe Sampling Materials for Lead in Surface Dust*. The collected wipe samples were placed in clean and labeled plastic containers. Samples were submitted to ALS Laboratories for analysis, using National Institute for Occupational Safety and Health (NIOSH) Method 7300. See Appendix I for sample locations and Appendix J for laboratory results.

The Mather, California, office of Industrial Hygiene Southwest has developed a Standard Operating Procedure (SOP) for lead, which is a blend of Occupational Safety and Health Administration (OSHA), U.S. Department of Housing and Urban Development (HUD), and Army regulations. Essentially, this SOP sets forth a criterion of 40 micrograms of lead per square foot ($\mu\text{g}/\text{ft}^2$) for converted indoor firing ranges, break rooms, floor surfaces, or any area that might be used for non-military functions. A $200\text{-}\mu\text{g}/\text{ft}^2$ criterion has been established for tool rooms, maintenance bays, furnace rooms, boiler rooms, storage closets, and other areas where the general public is not expected to visit.

3.2 Painted Surface Evaluation

The interior of the armory was visually inspected for peeling paint on the walls and ceilings. If peeling paint was encountered, a paint chip sample was collected by removing all paint inside a two-inch by two-inch template and placing it in a sampling vial. All samples were submitted to ALS Laboratories in Salt Lake City, Utah. ALS analyzed the samples for lead using inductively coupled plasma (ICP) and atomic emission spectroscopy (EPA SW-846, Method 6010C). See Appendix I for sample locations and Appendix J for laboratory results.

The U.S. Department of Housing and Urban Development (HUD) and EPA define "lead-based paint" as any coating that has a lead concentration of 1.0 milligram per square centimeter (mg/cm^2) or greater, or if the lead concentration is greater than 0.5 percent (%) by

weight. The Consumer Product Safety Commission (CPSC) currently considers paint to be lead-containing if the concentration of lead exceeds 600 parts per million (ppm) or 0.06% by weight. Both the CPSC and HUD definitions of lead paint are aimed at protecting the general population from exposure to lead in the residential setting.

By contrast, the mission of the Occupational Safety and Health Administration (OSHA) with respect to lead-containing paint is to protect workers during construction activities that could result in hazardous exposures. OSHA states that construction work (including renovation, maintenance, and demolition) performed on structures coated with paint that contains levels of lead lower than HUD and CPSC standards can still result in exposures that exceed the regulatory limits. For this reason, OSHA has not defined a lower threshold level of lead content for lead-containing paint, but states that paint with any measurable level of lead may pose a significant potential for overexposure.

Therefore, construction activities that create lead containing dust or fume must be performed in accordance with OSHA's Lead in Construction Standard, 29 CFR 1926.62. This standard requires, among other things, medical surveillance, lead training, initial exposure assessments, respiratory protection, and worker hygiene facilities.

3.3 Moisture Intrusion and Limited Visual Fungal Growth Evaluation

The interior of the armory was visually inspected for signs of moisture intrusion that could result in fungal growth. Any signs of moisture intrusion (e.g., discoloration, staining, blistering) were noted and documented on a drawing for a follow-up evaluation.

3.4 Asbestos Management

Armory personnel were asked if an asbestos survey and assessment had been conducted and whether there was a written Operations and Maintenance Program for the facility. IHI also reviewed any asbestos awareness training records.

3.5 Heating, Ventilation, and Air-Conditioning Systems and Indoor Air Quality

The heating, ventilation, and air-conditioning (HVAC) systems that serve the armory were evaluated. This evaluation consisted of a visual inspection of the system to note any obvious problems, and a review of the facility maintenance plan, if one was available.

Carbon dioxide (CO₂), temperature, and relative humidity were measured throughout the armory using a TSI Model 8762 IAQ-Calc™ Monitor. The unit was calibrated before use with certified zero gas and 1,000 ppm CO₂ span gas. See Appendix E for IAQ data.

Carbon dioxide is a normal constituent of exhaled breath and is commonly measured as a screening tool to evaluate whether adequate fresh, outdoor air is being provided. If typical CO₂ levels within a building are maintained at or less than 1,000 ppm, with appropriate temperature and humidity levels, complaints about indoor air quality should be minimal (American Society for Testing and Materials (ASTM) – International D6245-12, *Using Indoor Carbon Dioxide Concentrations to Evaluate Indoor Air Quality*). If a building exceeds this guideline, it should not be interpreted as an unhealthy or hazardous situation. An elevated CO₂ level is only an indication that the amount of outside air being brought into a building may be inadequate or poorly distributed and further investigation may be warranted.

In building areas where there are potential sources of CO₂ other than exhaled breath, the guidelines above cannot be used. The OSHA standard for CO₂ should be used in these instances. The OSHA standard is an eight-hour time-weighted average (TWA) of 5,000 ppm with a short-term 15-minute average limit of 30,000 ppm.

3.6 Hazard Communication and Hazardous Material Storage

A review of the armory's chemical inventory and Material Safety Data Sheet (MSDS) file was accomplished. Chemical storage areas, i.e., flammable storage cabinets/rooms, were also inspected.

3.7 Safety Training and Record Keeping

A review of safety training programs and documentation was performed to determine if the armory's site-specific training programs and annual documentation were current.

3.8 Kitchen Ventilation Survey

Duct velocity measurements were collected on facility kitchen exhaust hoods (when present) using a TSI VelociCalc, Model 9515.

The 2011 National Fire Protection Association Standard 96, Section 8.2.1.1, requires exhaust fan ducts used in commercial cooking equipment to have a duct velocity of not less than 500 feet per minute (fpm).

3.9 Kitchen Appliance Sound-Level Measurements

Sound-pressure levels of the kitchen appliances (when present) were measured using a Sound Level Meter in the dBA and dBC ranges, with the meter set on slow response. DD Forms 2214 are provided in Appendix M.

3.10 General Safety Walk-Through

A limited Fire Life Safety Code walk-through evaluation of the armory was performed to:

- document the presence of a fire alarm,
- determine if fire extinguishers are properly mounted and current on their monthly and annual inspections,
- determine if eyewash station inspections are current, and
- document any fire or safety hazards in the armory.

3.11 Equipment Used

The following equipment was used for this survey.

Type	Model Number	Serial Number	Calibration Date
TSI VelociCalc™ Meter	9515	T95150720007	10/13/2011
TSI IAQ Calc™	8732	02100504	03/19/2012
3M™ Sound Level Meter	SM-200	SD20010465	09/12/2011

The calibration certificates for these instruments are attached in Appendix H.

3.12 Quality Assurance

IHI employs, at a minimum, the following methods to help assure quality of field investigations and reports:

- Use of appropriately educated and experienced personnel;
- Documentation of pertinent field and sampling information
- Continuing education of technical personnel through attendance at training sessions and conferences, and literature review;

- Peer and supervisory review of sampling strategy, field methods, calculations, and reports;
- Strict adherence to method requirements, in particular to NIOSH and OSHA standard methods, including strict chain-of-custody protocol;
- Use of accredited laboratories, or, in cases where specific accreditation is not available, choice of laboratories of good reputation, having strong QA/QC programs.
- Calibration of instruments, including field calibration via manufacturers' recommended procedures and routine (typically annual) off-site calibration of equipment via certified third parties.

4.0 FINDINGS AND RECOMMENDATIONS

4.1 Lead Wipe Sampling

The laboratory analytical results indicate that lead concentrations for all of the lead wipe samples collected were below the standards, except for one sample collected on the northwest area of the former indoor firing range (IFR) floor. The sample in the IFR indicated that levels were above the 40 $\mu\text{g}/\text{ft}^2$ standard, which is outlined in the IHSW Standard Operating Procedure (SOP) for Armory Cleanup. See Appendix I for a data table and a drawing showing sample locations and Appendix J for the laboratory reports. Photographs were taken of each sampling point and are presented in Appendix C.

Recommendations

1. Clean the floor of the former indoor firing range to a lead concentration of less than 40 $\mu\text{g}/\text{ft}^2$ following the guidance in the attached SOPs.
2. Perform post-cleanup wipe sampling to ensure lead levels are within the criterion outlined in the IHSW SOP for Armory Cleanup.

4.2 Painted Surface Evaluation

Peeling paint was observed only on the ceiling of Room 121 in the Mount Pleasant Armory and one sample was taken of the peeling paint. The laboratory reported that the lead concentration was less than ($<$)0.0025% by weight, which is below the reporting limit for lead.

See Appendix I for a data table and a drawing showing the sample location and Appendix J for the laboratory report. A photograph was taken of the sampling point and is presented in Appendix C.

Recommendation

None

4.3 Moisture Intrusion and Limited Visual Fungal Growth Evaluation

No visual evidence of water damage, moisture intrusion, or fungal growth was observed in this armory.

Recommendation

None

4.4 Asbestos Management

An asbestos survey could not be located during this visit; however, SSG Hansen believes the Division of Facilities, Construction, and Management (DFCM) for the State of Utah may have one on file due to asbestos abatement activities that have occurred in the past. Personnel have not been provided with asbestos awareness training.

Recommendations

1. Locate the asbestos survey report for this building or contract with a licensed firm to perform an asbestos survey and assessment.
2. Once asbestos-containing materials have been identified and assessed, provide awareness training to assigned personnel for the specific material types and locations of asbestos in this armory.

4.5 Heating, Ventilation, and Air-Conditioning Systems and Indoor Air Quality

The armory is heated by a large fan-forced heater located on the drill hall ceiling and radiator and forced air central heaters in the offices. Hot water is supplied from a boiler in the boiler room. Air conditioning is provided by two refrigeration units located on the roof with fan units on the ground floor. These units supply cool air to office areas only.

The average outdoor CO₂ concentration at the time of the survey was 370 ppm. The highest CO₂ concentration measured inside the building was 380 ppm, which should not result in indoor air quality complaints.

Building air temperatures ranged from 74 to 80°F and relative humidity was between 38 and 44 percent during the testing period. Air temperatures in the office areas were within the

recommended comfort range of 68-75°F, but in the drill hall where air conditioning is not present the air temperatures were slightly above the recommended comfort range. The relative humidity was within the recommended comfort range between 30 and 60 percent. Low relative humidity is common in Utah the majority of the year. Humidity levels above 60 percent can result in proliferation of bacteria and fungi, while levels below 30 percent can cause dry eyes, skin, and mucous membranes.

The DFCM personnel maintain all HVAC units in the armory.

Recommendation

None

4.6 Hazard Communication and Hazardous Material Storage

4.6.1 Hazardous Materials Inventory and Material Safety Data Sheets (MSDS)

Hazardous materials in this armory consist of custodial products, which are stored in the cleaning closet, and flammable chemicals, which are stored in a flammable storage cabinet. Chemical inventories of all products used by the armory along with their associated MSDSs are maintained in master binders located in the janitor's closet and outside of the flammable storage cabinet. The chemical inventories and MSDS binder are arranged by room and then by alphabetical order. An inspection of the chemical inventory revealed that current products in use by the armory are all accounted for and their associated MSDSs are available.

Copies of chemical inventories are provided in Appendix D.

Recommendation

None

4.6.2 Flammable Storage Cabinets

There is a flammable storage cabinet located in the maintenance bay in this armory. There were no storage incompatibilities or leaking materials in the flammable storage cabinet. The cabinet was in good condition and the doors of flammable storage cabinet closed properly.

Recommendation

None

4.7 Safety Training and Record Keeping

Safety training records could not be located at the Mount Pleasant Armory at the time of the IH Assistance Visit.

Recommendation

1. At a minimum, provide hazard communication training to those who use chemicals in the work place and fire prevention training, fire safety, and fire extinguisher training to all personnel who occupy the facility.

4.8 Kitchen Ventilation Survey

For the single hood located in the kitchen, there are two exterior roof-mounted exhaust fans that serve the kitchen appliances. Duct velocity measurements were obtained and an average of about 2,000 and 1,700 feet per minute (fpm) was measured.

Recommendation

None

4.9 Kitchen Appliance Sound-Level Measurements

All of the kitchen appliances measured produce noise levels well below the hazardous noise criterion of 85 dBA. Based on this information, there is no need for noise reduction measures or additional noise dosimetry surveys for this area.

Recommendation

None

4.10 General Safety Walk-Through

1. Housekeeping throughout the facility was good.
2. There is a fire alarm in this facility that is maintained by the Utah DFCM.
3. Fire extinguishers are strategically located throughout the armory. All extinguishers except one in the motor pool area were current on their annual and monthly inspections.
4. There are no eyewash stations in this armory and no chemicals that would require one.
5. Fire evacuation routes are posted throughout the facility.
6. Electrical panel boxes were inspected and were found to contain no exposed wiring or openings in the panel.

7. Three outlets in the dish wash room, two on the west wall of Room 135, one under the fire extinguisher by the door to Room 136, and one on the south wall of Room 136 are marked GFCI protected but are not GFCI protected.

Recommendations

1. Ensure all fire extinguishers are provided a monthly inspection and document these inspections on the attached inspection cards.
2. Repair or replace the GFCI outlets that are within six feet of a water source.

5.0 PROJECT LIMITATIONS

This Project was performed using, as a minimum, practices consistent with standards acceptable within the industry at this time, and a level of diligence typically exercised by industrial hygiene and environmental consultants performing similar services.

The procedures used in this investigation attempt to establish a balance between the competing goals of limiting investigative and reporting costs and time, and reducing the uncertainty about unknown conditions. Therefore, because the findings of this report were derived from the scope, costs, time, and other limitations, the conclusions should not be construed as a guarantee that all environmental or occupational hazards have been identified and fully evaluated. Where sample collection and testing have been performed, IHI's professional opinions are based in part on the interpretation of data from discrete sampling locations that may not represent conditions at non-sampled locations. IHI assumes no responsibility for omissions or errors resulting from inaccurate information or data provided by sources outside of IHI, or from omissions or errors in public records.

Furthermore, it is emphasized that the final decision on how much risk to accept always remains with the client since IHI is not in a position to fully understand all of the client's needs. Clients with a greater aversion to risk may want to take additional actions while others, with less aversion to risk, may want to take no further action.

6.0 PROJECT APPROVAL

This IH Assistance Visit was reviewed and approved by:

Non-Responsive

4 December 2012

Date

Industrial Hygiene Services Manager

Technical Assistance: For technical assistance regarding information found in this report or the performed survey, please contact **Non-Responsive** at 801-466-2223, or **Non-Responsive** of the Southwest Regional Industrial Hygiene Office at 916-804-1707.

Contact the State Safety and Occupational Health Office and/or the Regional Industrial Hygienist should any of the operations change, or should the personnel become incapable of following the previous recommendations and subsequent recommendations are needed.

Appendix A

References

- American Conference of Governmental Industrial Hygienists (ACGIH), Industrial Ventilation, A Manual of Recommended Practice
- American Conference of Governmental Industrial Hygienists (ACGIH), Threshold Limit Values for Chemical Substances and Physical Agents and Biological Indices
- American National Standards Institute (ANSI)/Illuminating Engineering Society (IES), Industrial Lighting.
- American National Standards Institute, Z358. 1-1998. Emergency Eyewash and Shower Equipment
- AR 40-5, Preventative Medicine
- AR 40-10, Appendix B – Health Hazard Assessment Program in Support of Army Material Acquisition Decision Process
- AR 385-10, The Army Safety Program
- Corps of Engineers Guide Specification, CEGS-1585 1, Overhead vehicle tailpipe (and welding fume) Exhaust Systems
- DA PAM 40-ERG, Ergonomics
- DA PAM 40-501, Hearing Conservation.
- National Safety Council, Fundamentals of Industrial Hygiene
- NOR 385-10, Army National Guard Safety and Occupational Health Program
- TB MED 503, The Army Industrial Hygiene Program
- TG022, US Army Environmental Hygiene Agency (USAEHA), Industrial Hygiene Evaluation Guide
- TG 141, US Army for Health Promotion and Preventive Medicine (USACHPPM) Industrial Hygiene Air Sampling Guide, Nov. 1997
- Title 29, Code of Federal Regulations (CFR), 2011, revision Part 1910, Occupational Safety and Health Standards

Appendix B

Assessment Criteria

A. Ventilation Standards

Ventilation rates were compared to recommendations made in 29 CFR 1910, ACGIH Industrial Ventilation Manual, and Corps of Engineers specifications. See Appendix A for reference information.

B. Illumination Standards

Illumination measurements were compared with recommendations made by the Industrial Engineering Society (IES)/American National Standards Institute (ANSI) RP7-1991 Standard and MIL-STD-1472E.

C. Noise

Noise measurements were taken and compared with OSHA Standard 29 CFR 1910.95 and Department of the Army Pamphlet 40-501.

D. Air Sampling

Personal air sampling was conducted in compliance with applicable National Institute of Occupational Safety and Health (NIOSH) Analytical Methods. Sampling results were compared to relevant Occupational Safety and Health Administration (OSHA) Permissible Exposure Limits (PEL), American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLV), or NIOSH Recommended Exposure Limits (REL).

Occupational Safety and Health Administration (OSHA)

OSHA has established Permissible Exposure Limits (PELs) for workplace toxic and hazardous substances listed in 29 CFR 1910.1000 Tables Z-1, Z-2 and Z-3. Most OSHA PELs are based on 8-hour time weighted averages (TWAs); when sampling periods are less than 8 hours, the result must first be converted to an 8-hour TWA before comparing it to the OSHA PEL. Some OSHA PELs are based on Short Term Exposures Limits (STEL) of 15 minutes of worst-case exposure or Ceiling Limits of worst-case peak exposures (sampled as a 15 minute exposure if direct-reading methods are not available).

OSHA regulations are legally enforceable. Employers are required to maintain employee exposures below PELs. The best practice is to eliminate hazards and use safer substitutes. Alternatively, engineering and/or administrative (work practice) controls may reduce exposures to acceptable levels. Personal protective equipment should be the solution of last resort, implemented after all other efforts to eliminate the hazard have been exhausted or deemed infeasible. OSHA 29 CFR 1910.134 covers the use of respiratory protection in the work place.

American Conference of Governmental Industrial Hygienists (ACGIH)

Unlike the OSHA PELs, the ACGIH TLVs are not consensus standards; however, TLVs represent a scientific opinion based on a review of existing peer-reviewed scientific literature by committees of experts in public health and related sciences.

Occupational Exposure Limit

In accordance with the Department of the Army (DA) Pamphlet 40-503, Industrial Hygiene Program (DA PAM 40-503), "The DA mandates the use of ACGIH TLVs when they are more stringent than OSHA regulations or when there is no PEL." The DA defines the resulting exposure limit as the Occupational Exposure Limit (OEL).

Appendix C

Photo Log



Photograph 1
Mount Pleasant Armory, Front, Exterior



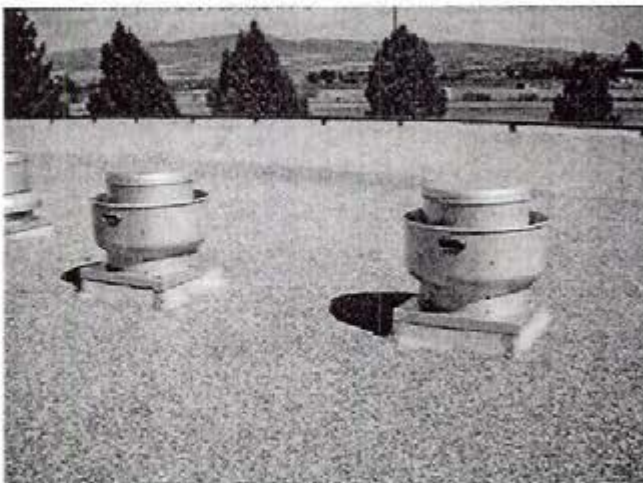
Photograph 2
Mount Pleasant Armory, Rear, Exterior



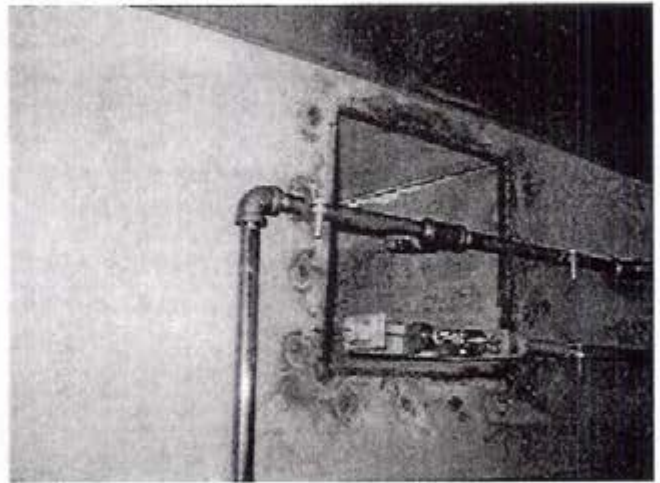
Photograph 3
Mount Pleasant Armory, Drill Hall



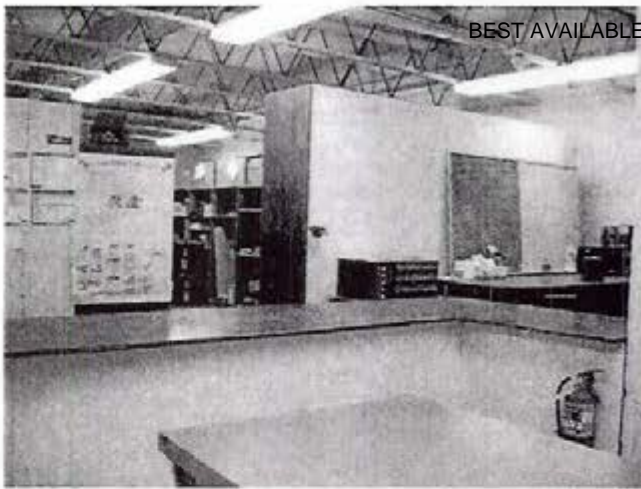
Photograph 4
Mount Pleasant Armory, Former IFR



Photograph 5
Kitchen exhaust duct, Exterior



Photograph 6
Kitchen exhaust duct, Interior Vent



Photograph 7
Weapons Vault



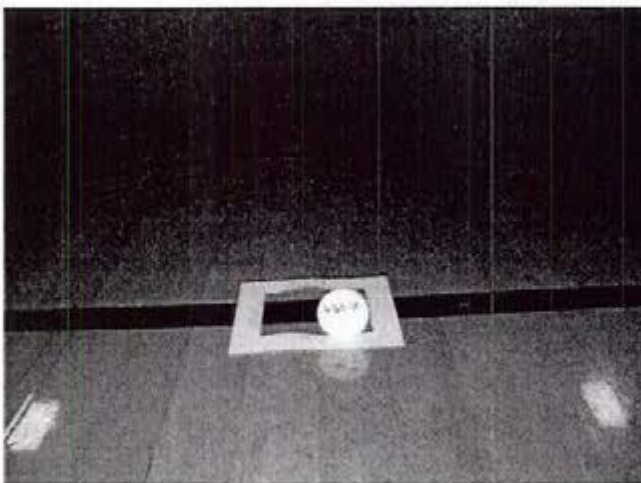
Photograph 8
Maintenance Bay



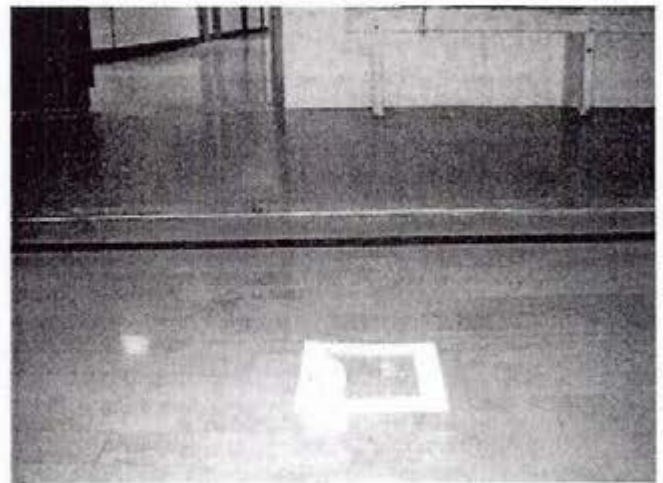
Photograph 9
Flammable Cabinet, Closed



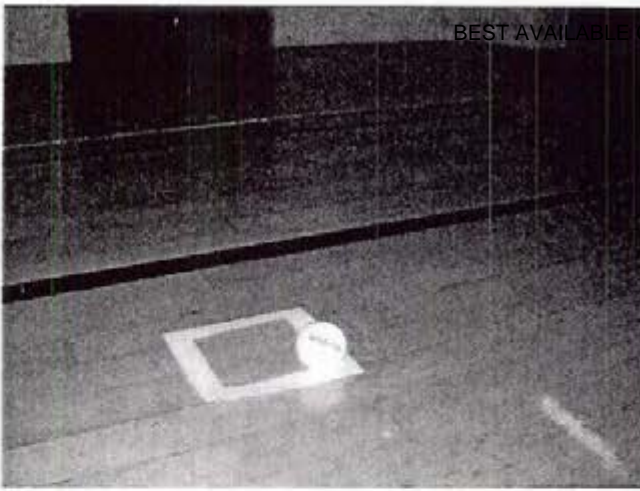
Photograph 10
Flammable Cabinet, Open



Photograph 11
Location of lead wipe sample number 6163-01



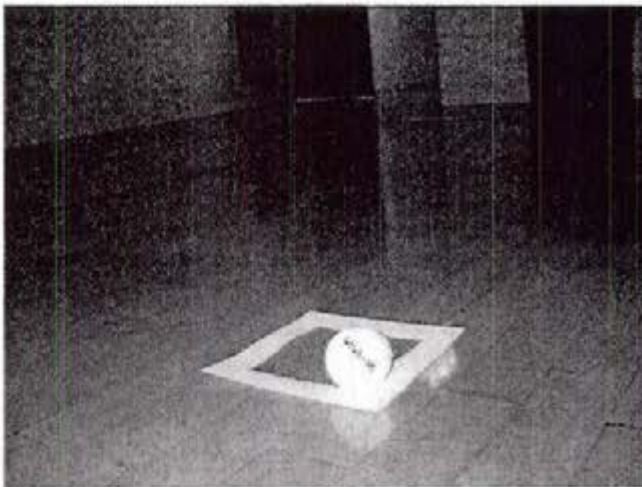
Photograph 12
Location of lead wipe sample number 6163-02



Photograph 13
Location of lead wipe sample number 6163-03



Photograph 14
Location of lead wipe sample number 6163-04



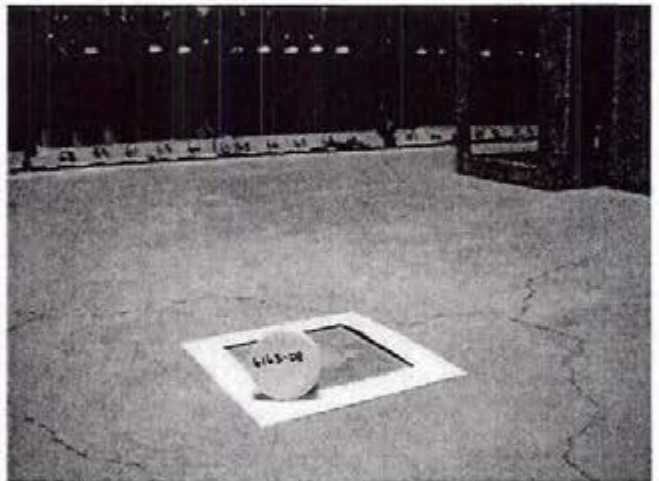
Photograph 15
Location of lead wipe sample number 6163-05



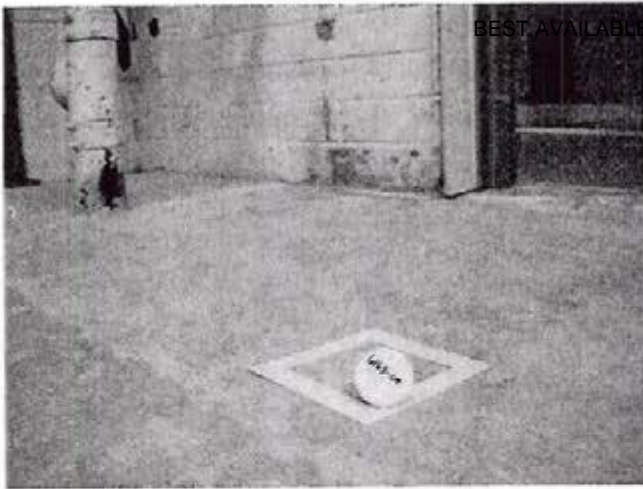
Photograph 16
Location of lead wipe sample number 6163-06



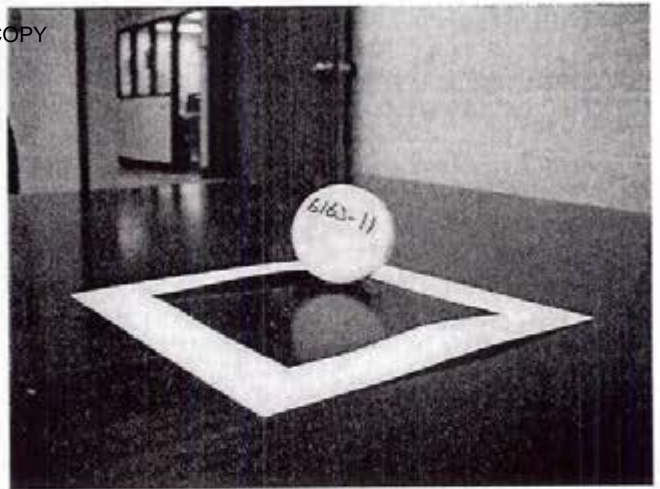
Photograph 17
Location of lead wipe sample number 6163-07



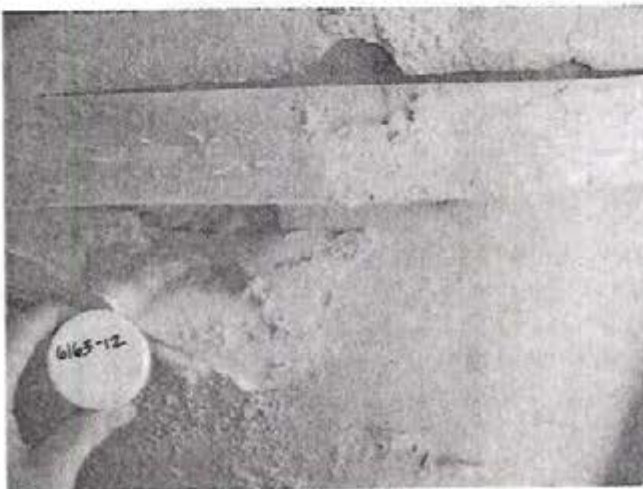
Photograph 18
Location of lead wipe sample number 6163-08



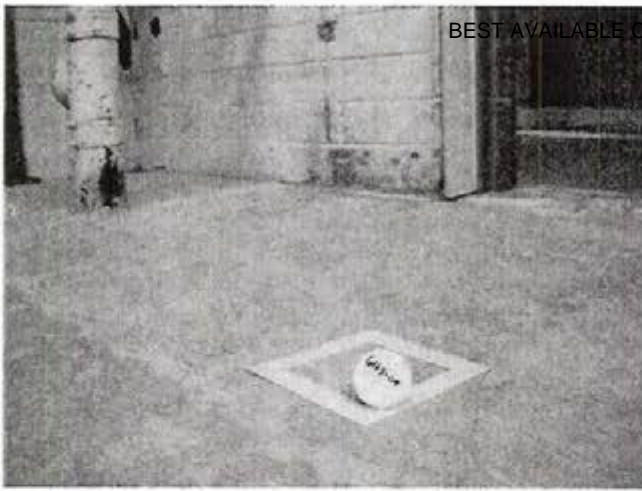
Photograph 19
Location of lead wipe sample number 6163-09



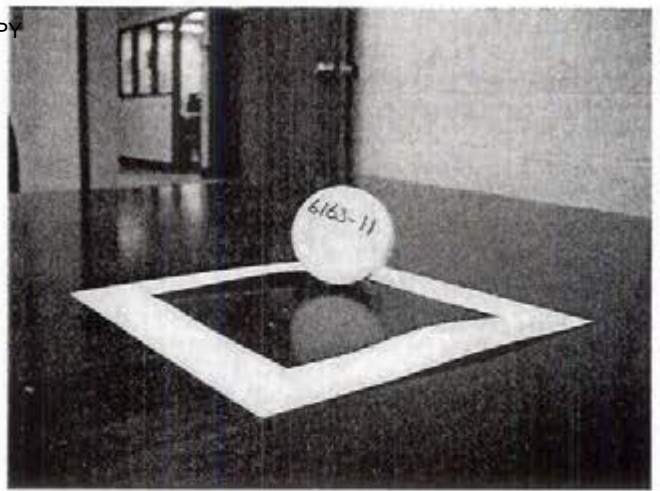
Photograph 20
Location of lead wipe sample number 6163-11



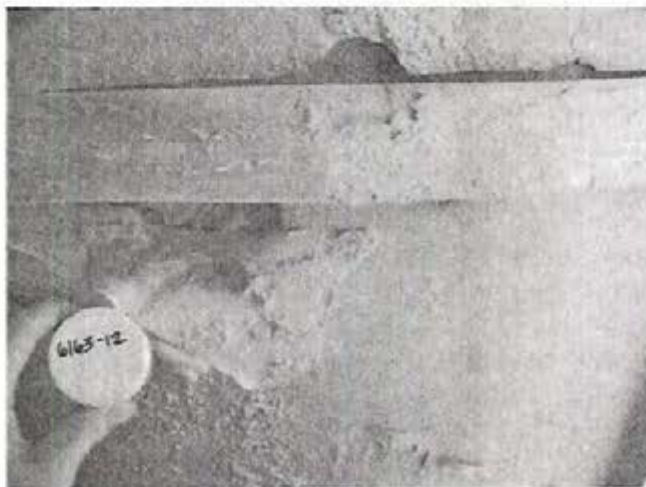
Photograph 21
Location of paint chip sample number 6163-12



Photograph 19
Location of lead wipe sample number 6163-09



Photograph 20
Location of lead wipe sample number 6163-11



Photograph 21
Location of paint chip sample number 6163-12

Appendix D
Chemical Inventory

UTAH ARMY NATIONAL GUARD
116 ENGINEER COMPANY (HORIZONTAL)
525 WEST 1000 SOUTH
MOUNT PLEASANT UTAH 84647

NGUT-MEB-BAZ

24 May 2012

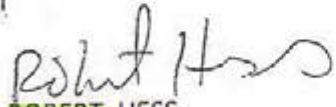
Subject: Hazardous Material Inventory

1. The following listed items are considered Hazardous Materials:

A. Cleaning Closet

1. 3M STANCE FLOOR FINISH	9 LT
2. 3M TOP LINE FLOOR COATING	
3. 3M BATHROOM CLEANER	4L
4. 3M GLASS CLEANER	1L
5. STREET SHOE FLOOR FINISH	1 GAL
6. 3M DEODORIZER, MOUNTAIN SPICE	1 BT
7. 3M GENERAL PURPOSE CLEANER	3 BT
8. 3M QUAT DISINFECTANT	5L
9. 3M TILE, GROUT & BOWL CLEANER	52L
10. BAKING SODA	1 CN
11. BATHROOM DISINFECTANT CLEANER	1 BT
12. BETCO FLOOR FINISH	1 GAL
13. BETCO FOAMING SKIN CLEANER	1 GAL
14. BLEACH	1 GAL
15. DULUX LATAK PAINT	5 GAL
16. LUBE OIL, WEAPONS LOW TEMP	1QT
17. LYSOL TOILET BOWL CLEANER	3 CN
18. MICRELL ANIBACTERIAL SOAP	1 GAL
19. POWER GREEN	9 CN
20. SIMPLE GREEN CLEANER	4 BT
21. SCOURING POWDER	1 CN
22. TOILET SOAP	
23. TRAFICARE GLASS FLOOR FINISH	1 GAL
24. URINAL CAKE	2 CN
25. WINDEX	17 BT

FOR THE COMMANDER


ROBERT HESS
SGT, ENG
SUPPLY NCO

UTAH ARMY NATIONAL GUARD
116 ENGINEER COMPANY (HORIZONTAL)
525 WEST 1000 SOUTH
MOUNT PLEASANT UTAH 84647

NGUT-MEB-BAZ

24 May 2012

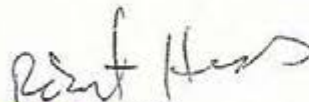
Subject: Hazardous Material Inventory

1. The following listed items are considered Hazardous Materials:

A. ~~Maintenance shed~~
flamable closet

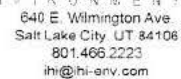
1. ADHESIVE CEMENT	6 CN
2. BENZOMATIC PROPANE	16 CN
3. CALE ANTI FREEZE VIRGIN GRADE	1 GAL
4. CLEANSAFE DUST REMOVER	7CN
5. COLOR PLACE PAINT	4 CN
6. COOLING WATER	5 GAL
7. CRC PARTS CLEANER	2 Bt
8. CLEANING COMPOUND WINDSHIELD	
9. DO-IT BEST AIROSOL ENAMEL	2 CN
10. DRY CLEANING COMPOUND ACETATE	6 GAL
11. GAA GREASE, AUTOMOTIVE, ARTILLERY	12 GAL
12. GLASS CLEANER LIQUID	1 GAL
13. GLYCOL ETHER DM	5 GAL
14. GROUND WORKS FLOOR ENAMEL	2 Gal
15. INSECTICIDE AEROSOL	2-CN
16. INSECTICIDE AEROSOL	2-CN
17. Kleen-up solvent-	5 GAL
18. LUBE OIL, WEAPONS LOW TEMP	1 QT
19. LUBRICATING GEAR OIL 80W90	10 GAL
20. MINWAX WOOD FINISH	1CN
21. NAPA ANTIFREEZE COOLANT	1 GAL
22. NCP-2 TERMINAL PROTECTOR	1 CN
23. PLASTIC POLISH	2 PT
24. RIFLE BORE CLEANER	4 CN
25. SYNTANE TENT SEALANT	2 GAL
26. WINDEX	1 CN

FOR THE COMMANDER

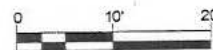

ROBERT HESS
SGT, ENG
SUPPLY NCO

Appendix E

Floor Plan/IAQ - Temp, RH, & CO₂ Monitoring



Indoor Air Quality Measurements



Record #J-15-0085 (UT)

FOIA Requested Record #J-15-0085 (UT)
Released by National Guard Bureau
Page 949 of 1683

Appendix F
Ventilation Data

BEST AVAILABLE COPY
Ventilation Survey Data and Calculations
Kitchen Exhaust Vents
Mount Pleasant, Utah Armory

Kitchen Stove/Oven Exhaust Duct Velocity

West Duct

Duct Dimensions = 10 x 10 inches

Duct Velocity Measurements

2560	2150	1790	1880
2060	1970	1750	1895
2225	2070	2015	1730

Average Flow Rate = 2008 fpm

East Duct

Duct Dimensions = 10 x 10 inches

Duct Velocity Measurements

1830	1980	1930	1640
1850	1760	1550	1417
1530	1715	1320	1875

Average Flow Rate = 1700 fpm

Appendix G

Field Notes

Army National Guard Armory Survey (To Be Included In Report)

Five lead wipe samples collected from drill floor (take samples from dusty horizontal floor surfaces)	yes.
Are any weapons cleaned in the facility, if yes where are they cleaned?	no. if needed - cleaned at Camp Williams.
Additional lead wipe samples taken from 25% of the rest of the building --(on floor areas only)	yes.
Is there a converted indoor firing range? If so collect additional wipe samples IAW the SOW.	yes.
Is there any peeling paint? Take bulk sample if able.	yes. Rm 121 ceiling
Are there any signs of water damage or mold?	no.
Any suspected ACM? Where and what condition is it in. Bulk sample if able.	yes. but doesn't have a report 2008/09.
Quality of housekeeping	good.
HVAC maintenance plan in place?	thru EMO / DPCM EMO .
Overall condition of HVAC system	good. central A/C in office areas - none in drill hall. Hot water Heat - Boiler w/ radiant heat & forced central heat.
Obtained CO2, Temp, RH monitoring	yes.
HAZMAT inventory on hand (make copies for the report), MSDS available for all materials.	yes.
HAZMAT storage, Condition of lockers, if outside storage building is used is it ventilated and does it meet OSHA standards.	yes.

Fire alarm in working condition -- not usually in place in older armories	yes. DFCM maintains. Chris Sadler ^{PEAK Alarm} Ansul system in Kitchen DFCM maintained.
Fire extinguishers in place and properly identified and mounted	signed off monthly by DFCM, Chris Sadler.
Evidence of monthly fire extinguisher inspections	A few w/o current monthly insp
Annual fire extinguisher inspections tags current	yes. 1/2012
Are eye wash stations available in areas where hazardous materials are used and are they inspected weekly (inspections must be documented)	N/A
Egress routes accessible and properly marked - - noted on <u>Fire Evacuation Plan</u>	yes.
Training programs in place; Hazcom, Respiratory Protection, Confined Spaces, Hearing conservation, PPE (if applicable)	
Any Photo labs	no.
Any hazardous noise sources	no.
Light levels checked throughout building	N/A
Breaker panels properly labeled with no exposed wiring	yes.
Check building occupancy 1. How many military personnel, how many civilian personnel 2. What types of units occupy facility, i.e. Administrative, Maintenance, etc.?	1. 3 military (AGR) 0 civilian 2. Administrative
Any civilian activities in armory (cub scouts, classes, day care, parties etc)	no.
Obtain two lead air samples	On IHSW Request Only

Evaluate Kitchen Stove Hood Flow if Present IAW NFPA Standard 96.	1394 fpm (left) , 2077 fpm 1701 fpm (right)
Collect Source Noise Measurements of Kitchen Appliances and Document Using DD 2214	OK.
Conduct a safety walkthrough of entire facility document any safety deficiencies found.	Four outlets in the kitchen were labeled GFCI protected, but were not.
<u>Take photos</u> of outside of building, all sample points and any pertinent hazards or concerns.	yes.
Name of Armory, POC, phone #, address and organizations in Armory (Add Checklist to Report)	Mt. Pleasant UT Armory Non-Responsive (435) 462-2515 525 W. 1000 S., Mt. Pleasant, UT 84647 (Add Checklist to Report)

FACILITY INFORMATION

(Information listed in First Section)
(1st Few Paragraphs/Pages of Report)

1. Date Prepared: **7/30/2012**
2. Names (and Company Name) of Personnel Conducting Industrial Hygiene Site Assistance Visit: **Non-Responsive** **HI Environmental**
3. Facility Name and Brief Summary of Primary Activities Conducted at Facility:
Mount Pleasant Armory, Utah Army National Guard
Drill Periods Monthly
4. Facility Address: **525 West 1000 South, Mount Pleasant, UT 84647**
5. Primary Unit Assigned to Facility: **DET 1 116th EN CO** **Non-Responsive**
6. Co-Tenant Units Assigned or Working Within Facility (LIST ALL): **Recruiting**
7. Square Ft. Area of Facility: **approximately 12,500 sq. ft**
8. Work Schedule: **0600 – 1630; Monday through Thursday**
9. Number of work bays: **0**
10. Equipment Density and Type: **N/A**
 - a. List Equipment Nomenclature Serviced or Maintained at Facility: **N/A**
 - b. List Total # for Each Nomenclature Serviced or Maintained at Facility: **N/A**
11. Total Number of Personnel: **3**
12. No. of Admin. Personnel (Include Status – AGR, Fed. Tech., IDT, State or Contract Employee): **3 AGR**
13. No. of Maintenance Personnel (Include Status – AGR, Fed. Tech., IDT, State or Contract Employee): **0**
14. Total Number of Personnel Enrolled in the Hearing Conservation Program: **0**

15. Total Number of Personnel Enrolled in the Respiratory Protection Program: 0
16. Total Number of Personnel Enrolled in the Medical Surveillance Program: 0
17. Total Number of Personnel Enrolled in the Vision Program: 0
18. Facility Commander **Non-Responsive**
 - a. Email address, Commercial Telephone Number and Unit Assigned to:
Non-Responsive 801-763-6301 – Assigned to 1457th EN BN
19. Safety Officer: **Non-Responsive**
 - a. Email Address, Commercial Telephone Number and Unit Assigned to:
Non-Responsive 801-763-6311, assigned to 1457th EN BN
20. Facility Telephone Number: 435-462-2515

Appendix H
Calibration Certificates

Certificate of Calibration

Certificate Number: 265801SD20010465

Model: SD-200 Class 2 Integrating SLM

Date Issued: 12-Sep-2011

S/N: SD20010465

On this day of manufacture and calibration 3M certifies that the above listed product meets or exceeds the performance requirements of the following acoustic standard(s)

ANSI S1.4 1983 (R 2006) - Type 2 / Specification for Sound Level Meters

ANSI S1.43 1997 (R 2007) - Type 2 / Integrating-Averaging Sound Level Meter

IEC 61672-1 (2002) - Class 2/Electro Acoustics - SLMs - Pt1: Specifications

Test Conditions: Temp: 18-25°C Humidity: 20-80% R.H. Barometer: 950-1050 mBar

Test Procedure: S053-771

Reference Standard(s):

Device	Ref Standard Cal Due	Uncertainty - Estimated at 95% Confidence Level (k=2)
B&K Ensemble	10/7/2011	+/- 2.2% Acoustic (0.19dB)

Calibrated By:

Non-Responsive

In order to maintain best instrument performance over time, we recommend the instrument be recalibrated annually.
Any number of factors may cause the calibration to drift before the recommended interval has expired.
See user manual for more information.

All test equipment used in the test and calibration of this instrument is traceable to NIST, and applies only to the unit identified above.
This report must not be reproduced except in its entirety without the written approval of 3M, Inc.



Declaration of Conformity

Product/Model: SD-200 / Sound Detector - Class 2 Integrating SLM

Directives Covered:

- > EMC / Council Directive 2004/108/EC on Electromagnetic Compatibility.
- > Safety / Council Directive 2006/95/EC on Low Voltage Equipment Safety.
- > RoHS / Council Directive 2002/95/EC Restriction of Hazardous Substances.
- > WEEE / Council Directive 2002/96/EC Waste electrical and electronic equipment.
- > Performance / Council Directive 2004/22/EC Measuring Instruments.

The basis on which conformity is declared:

EN 61326-1 (2005) Electrical equipment for measurement, control and laboratory use
EMC requirements, Group 1, Class B Equipment (emissions)

CFR:47 (2008) Code of Federal Regulations: Part 15 Subpart B - Radio Frequency Devices - Unintentional Radiators.

EN 61326-1 (2005) Electrical equipment for measurement, control and laboratory use
EMC requirements, Industrial Location Immunity.

ANSI S1.4 1983 (R 2006) - Type 2 / Specification for Sound Level Meters

ANSI S1.43 1997 (R 2007) - Type 2 / Integrating-Averaging Sound Level Meter

IEC 61672-1 (2002) - Class 2/Electro Acoustics - SLMs - Pt1: Specifications

IEC 61010-1 (2010) Safety requirements for electrical equipment for measurement, control and laboratory use
Part 1: General Requirements

This instrument is considered WEEE Category 6 (Electrical and electronic tools), and therefore falls within the scope of the RoHS Directive. These units are RoHS compliant.

Note: This certification applies to all standard options and accessories supplied with the SD-200.

At the end of it's life cycle, this product and internal power cell must be sent to a WEEE recycling center, and is marked accordingly.

The technical construction file required by this directive is maintained in Oconomowoc, WI USA

Non-Responsive

ologies, Inc.

CERTIFICATE OF CALIBRATION AND TESTING

TSI Model 8732

TSI Serial No. 02100504

Description	IAQ Meter with CO2
-------------	--------------------

Calibration Standard Multi-Gas Calibration Bench #127

CALIBRATION VERIFICATION RESULTS

CALIBRATION VERIFICATION RESULTS					
Calibration Standard	Instrument Output	Difference	Error Compared to Tolerance		
			Tolerance Limit-	0	Tolerance Limit+
5001 PPM	4990 PPM	-0.2 %		*	
3000 PPM	3012 PPM	0.4 %		* *	
1000 PPM	1001 PPM	1 PPM		*	
500 PPM	496 PPM	-4 PPM		*	
0 PPM	-15 PPM	-15 PPM		*	
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				.	

Tolerance Limits:

CO2: 50PPM or 3% of reading

TSI Incorporated does hereby certify that all materials, components, and workmanship used in the manufacture of this equipment are in strict accordance with the applicable specifications agreed upon by TSI and the customer and with all published specifications. All performance and acceptance tests required under this contract were successfully conducted according to required specifications. Furthermore, all test and calibration data supplied by TSI has been obtained using standards whose accuracies are traceable to the National Institute of Standards and Technology (NIST) or has been verified with respect to instrumentation whose accuracy is traceable to NIST, or is derived from accepted values of physical constants. Calibration procedures for this instrument comply with MIL-STD-45662A. The accuracy of the calibration facilities is greater than a ratio of 1:1 with respect to the accuracy specifications of the instrument being calibrated.

<u>Applicable Test Report</u>	<u>Report Number</u>	<u>Date Last Verified</u>
DC Voltage	E002415	06-21-11
Barometric Pressure	E001992	04-08-11
Pure Nitrogen	UT-230	03-02-12
CO2 1000 PPM in N2	EB0013815	01-21-10
CO2 5000 PPM in N2	EB0020543	02-01-12

Non-Responsive

☒ Final

Function Check

Mar 19, 2012

Calibration Date

TSI Incorporated, 500 Cardigan Road, Shoreview, MN 55126 USA

Tel: 800-874-2811 651-490-2874 FAX: 651-490-2121 www.tsi.com



CERTIFICATE OF CALIBRATION AND TESTING

TSI Model 8732

TSI Serial No. 02100504

Description IAQ Meter with CO2

Calibration Standard Multi-Gas Calibration Bench #127

CALIBRATION VERIFICATION RESULTS

Calibration Standard	Instrument Output	Difference	Error Compared to Tolerance		
			Tolerance Limit-	0	Tolerance Limit+
5001 PPM	5895 PPM	17.9 %		.	X
3000 PPM	3762 PPM	25.4 %		.	X
1000 PPM	1243 PPM	243 PPM		.	X
500 PPM	614 PPM	114 PPM		.	X
0 PPM	-15 PPM	-15 PPM		*	
<div style="border: 1px solid black; padding: 5px; text-align: center;"> ***** AS FOUND DATA ***** (INITIAL CALIBRATION CHECK) </div>				.	
				.	
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				.	
				.	
				.	
				.	
			Tolerance Limits: CO2: 50PPM or 3% of reading		

TSI Incorporated does hereby certify that all materials, components, and workmanship used in the manufacture of this equipment are in strict accordance with the applicable specifications agreed upon by TSI and the customer and with all published specifications. All performance and acceptance tests required under this contract were successfully conducted according to required specifications. Furthermore, all test and calibration data supplied by TSI has been obtained using standards whose accuracies are traceable to the National Institute of Standards and Technology (NIST) or has been verified with respect to instrumentation whose accuracy is traceable to NIST, or is derived from accepted values of physical constants. Calibration procedures for this instrument comply with MIL-STD-45662A. The accuracy of the calibration facilities is greater than a ratio of 1:1 with respect to the accuracy specifications of the instrument being calibrated.

Applicable Test Report	Report Number	Date Last Verified
DC Voltage	E002415	06-21-11
Barometric Pressure	E001992	04-08-11
Pure Nitrogen	UT-230	03-02-12
CO2 1000 PPM in N2	EB0013815	01-21-10
CO2 5000 PPM in N2	EB0020543	02-01-12

Non-Responsive

☐ Final
Function Check

Mar 19, 2012
Calibration Date

TSI Incorporated, 500 Cardigan Road, Shoreview, MN 55126 USA
Tel: 800-874-2811 651-490-2874 FAX: 651-490-2121 www.tsi.com



CERTIFICATE OF CALIBRATION AND TESTING

TSI Incorporated, 500 Cardigan Road, Shoreview, MN 55126 USA
Tel: 1-800-874-2811 1-651-490-2811 Fax: 1-651-490-3824 <http://www.tsi.com>

ENVIRONMENT CONDITION			MODEL	8345
TEMPERATURE	68.5 (20.3)	°F (°C)	SERIAL NUMBER	98060408
RELATIVE HUMIDITY	53	%RH		
BAROMETRIC PRESSURE	28.95 (980.4)	inHg (hPa)		

☒ AS LEFT
☐ AS FOUND

☒ IN TOLERANCE
☐ OUT OF TOLERANCE

- CALIBRATION VERIFICATION RESULTS -

VELOCITY VERIFICATION				SYSTEM V-110			Unit: ft/min (m/s)
#	STANDARD	MEASURED	ALLOWABLE RANGE	#	STANDARD	MEASURED	ALLOWABLE RANGE
1	0 (0.00)	0 (0.00)	-3~3 (-0.02~0.02)	7	648 (3.29)	644 (3.27)	628~667 (3.19~3.39)
2	35 (0.18)	34 (0.17)	32~38 (0.16~0.19)	8	996 (5.06)	991 (5.03)	966~1026 (4.91~5.21)
3	65 (0.33)	65 (0.33)	62~68 (0.32~0.35)	9	1473 (7.48)	1476 (7.50)	1428~1517 (7.26~7.70)
4	99 (0.50)	98 (0.50)	96~102 (0.49~0.52)	10	2473 (12.56)	2484 (12.62)	2399~2547 (12.18~12.94)
5	160 (0.81)	158 (0.80)	155~165 (0.79~0.84)	11	4493 (22.82)	4514 (22.93)	4358~4627 (22.14~23.51)
6	334 (1.70)	333 (1.69)	324~344 (1.64~1.75)	12	5903 (29.99)	5902 (29.98)	5726~6080 (29.09~30.89)

TEMPERATURE VERIFICATION				SYSTEM T-119			Unit: °F (°C)
#	STANDARD	MEASURED	ALLOWABLE RANGE	#	STANDARD	MEASURED	ALLOWABLE RANGE
1	32.0 (0.0)	32.1 (0.1)	31.5~32.5 (-0.3~0.3)	2	140.0 (60.0)	140.2 (60.1)	139.5~140.5 (59.7~60.3)

TSI does hereby certify that the above described instrument conforms to the original manufacturer's specification (not applicable to As Found data) and has been calibrated using standards whose accuracies are traceable to the United States National Institute of Standards and Technology (NIST) or has been verified with respect to instrumentation whose accuracy is traceable to NIST, or is derived from accepted values of physical constants. TSI's calibration system is registered to ISO 9001:2008 and meets the requirements of ISO 10012:2003.

Measurement Variable	System ID	Last Cal.	Cal. Due
Temperature	E001800	01-19-12	07-19-12
DC Voltage	E001658	06-28-11	12-28-12
Pressure	E001719	12-13-11	06-13-12
Barometric Pressure	E001992	04-06-12	04-06-13

Measurement Variable	System ID	Last Cal.	Cal. Due
Temperature	E001799	01-19-12	07-19-12
Temperature	E004402	12-08-11	06-08-12
Pressure	E001721	12-13-11	06-13-12
Velocity	E003327	09-19-07	09-19-12

Non-Responsive

June 5, 2012

CALIBRATED

DATE

Doc. ID: CERT-DEFAULT



CERTIFICATE OF CALIBRATION AND TESTING

TSI Incorporated, 500 Cardigan Road, Shoreview, MN 55126 USA
Tel: 1-800-874-2811-1-651-490-2811 Fax: 1-651-490-3824 <http://www.tsi.com>

ENVIRONMENT CONDITION			MODEL	8345
TEMPERATURE	67.8 (19.9)	°F (°C)	SERIAL NUMBER	98060408
RELATIVE HUMIDITY	53	%RH		
BAROMETRIC PRESSURE	28.93 (979.7)	inHg (hPa)		

☐ AS LEFT ☐ IN TOLERANCE
☒ AS FOUND ☒ OUT OF TOLERANCE

CALIBRATION VERIFICATION RESULTS

VELOCITY VERIFICATION				SYSTEM V-106			Unit: ft/min (m/s)
#	STANDARD	MEASURED	ALLOWABLE RANGE	#	STANDARD	MEASURED	ALLOWABLE RANGE
1	0 (0.00)	0 (0.00)	-3~3 (-0.02~0.02)	7	645 (3.28)	626 (3.18)	626~664 (3.18~3.37)
2	35 (0.18)	36 (0.18)	32~38 (0.16~0.19)	8	996.3 (5.062)	* 961.5 (4.884)	966.6~1026.4 (4.91~5.214)
3	65 (0.33)	66 (0.33)	62~68 (0.31~0.34)	9	1473.3 (7.484)	* 1386.8 (7.045)	1429.1~1517.5 (7.26~7.709)
4	100 (0.51)	101 (0.51)	97~103 (0.49~0.52)	10	2507.6 (12.718)	* 2344.6 (11.911)	2428.5~2578.7 (12.337~13.10)
5	160 (0.81)	160 (0.81)	155~164 (0.79~0.84)	11	4484 (22.78)	* 4451 (22.61)	4350~4619 (22.10~23.46)
6	328 (1.67)	326 (1.65)	318~338 (1.62~1.72)	12	5908 (30.01)	5884 (29.89)	5731~6085 (29.11~30.91)

TEMPERATURE VERIFICATION				SYSTEM T-119			Unit: °F (°C)
#	STANDARD	MEASURED	ALLOWABLE RANGE	#	STANDARD	MEASURED	ALLOWABLE RANGE
1	32.0 (0.0)	* 32.7 (0.39)	31.5~32.5 (-0.28~0.28)	2	140.0 (60.0)	140.0 (60.0)	139.5~140.5 (59.7~60.3)

* Indicates Out-of-Tolerance Condition

TSI does hereby certify that the above described instrument conforms to the original manufacturer's specification (not applicable to As Found data) and has been calibrated using standards whose accuracies are traceable to the United States National Institute of Standards and Technology (NIST) or has been verified with respect to instrumentation whose accuracy is traceable to NIST, or is derived from accepted values of physical constants. TSI's calibration system is registered to ISO 9001:2008 and meets the requirements of ISO 10012:2003.

Measurement Variable	System ID	Last Cal.	Cal. Due	Measurement Variable	System ID	Last Cal.	Cal. Due
DC Voltage	E004477	12-15-11	12-15-12	Temperature	E001644	01-20-12	07-20-12
Pressure	E001558	12-12-11	06-12-12	Pressure	E001560	12-12-11	06-12-12
Velocity	E003327	09-19-07	09-19-12	Barometric Pressure	E001992	04-06-12	04-06-13
Temperature	E001800	01-19-12	07-19-12	Temperature	E001799	01-19-12	07-19-12

Non-Responsive

June 5, 2012

VERIFIED

DATE

Doc ID: CERT_DEFAULT



TSI - Customer Service report

Thank you for the opportunity to service your instrument.

RMA Number: 800245509

Ship-to party 17032 IHI ENVIRONMENTAL 640 E WILMINGTON AVE SALT LAKE CITY UT USA	Sold-to party 17032 IHI ENVIRONMENTAL 640 E WILMINGTON AVE SALT LAKE CITY UT USA
--	--

Service Information:

Purchase Order 12U-I6001TSIJCH
Purchase Order Date 06/05/2012

Description Calibration of VelociCalc 8345

Equipment 98060408
Serial Number 98060408
Material 8345

Service Description:

Return Reason:
ANNUAL CALIBRATION

Findings:
Unit sent in for clean and calibration. The unit failed as found.

Action:
The unit was cleaned, calibrated, and a complete operational checkout was performed.

Appendix I

Lead Wipe and Lead Paint Chip Table and Drawing

Mount Pleasant, UT - Lead Wipe Sample Results**Lead Wipe Sample Results**

Sample Number	Collection Date	Location	Result $\mu\text{g}/\text{ft}^2$
6163-01	7/30/2012	Center of Drill Hall Floor	<23
6163-02	7/30/2012	NW Corner of Drill Hall Floor	<23
6163-03	7/30/2012	SW Corner of Drill Hall Floor	<23
6163-04	7/30/2012	SE Corner of Drill Hall Floor	<23
6163-05	7/30/2012	NE Corner of Drill Hall Floor	<23
6163-06	7/30/2012	Kitchen Counter	<23
6163-07	7/30/2012	POC's Desk	<23
6163-08	7/30/2012	Weapon's Vault Floor	100
6163-09	7/30/2012	NW Area of Former IFR Floor	310
6163-10	7/30/2012	Blank	NA
6163-11	7/30/2012	Classroom Table Top	<23

Paint Chip Sample Results

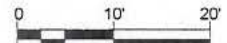
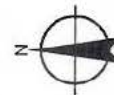
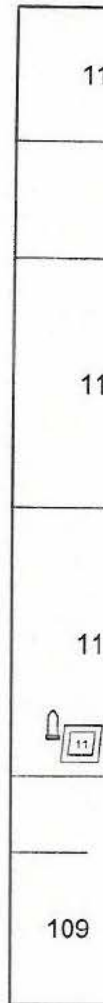
Sample Number	Collection Date	Location	Result % by weight
6163-12	7/30/2012	Ceiling of Room 121	<0.0025



IHI
ENVIRONMENTAL
840 E. Wilmington Ave.
Salt Lake City, UT 84106
801.466.2223
ihi@hi-env.com

State of Utah
Utah Army National Guard
525 West 1000 South
Mount Pleasant, Utah

Lead Wipe & Paint Chip Sample Locations



PROJECT No:	12U-I6163
SHEET:	1 of 2
DRAWN BY:	Non-Responsive
DATE:	07-31-2012
REVISED BY:	
DATE:	
REVIEWED BY:	

C:\Users\Public\Documents\12U-I6163.dwg, resu, /3/2012/04/22/ AM, Keith, vrsen full bleed G (11.00 x 11.00) Incher

Appendix J
Laboratory Reports



BEST AVAILABLE COPY
ANALYTICAL REPORT

Report Date: August 03, 2012

Non-Responsive

IHI Environmental
640 East Wilmington Avenue
Salt Lake City, UT 84106

Phone: (801) 466-2223

Fax: (801) 466-9616

Non-Responsive

Workorder: 34-1221256

Client Project ID: 12U-I6163/Armory-Mt. Pleasant

Purchase Order: 12U-I6163

Project Manager: Non-Responsive

Analytical Results

Sample ID: 6163-01	Media: Ghost Wipe	Collected: 07/30/2012
Lab ID: 1221256001	Sampling Location: Armory-Mt. Pleasant	Received: 07/30/2012
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 100 cm ²	Prepared: 08/02/2012
		Analyzed: 08/02/2012
Analyte	ug/sample	ug/ft ² RL (ug/sample)
Lead	<2.5	<23 2.5

Sample ID: 6163-02	Media: Ghost Wipe	Collected: 07/30/2012
Lab ID: 1221256002	Sampling Location: Armory-Mt. Pleasant	Received: 07/30/2012
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 100 cm ²	Prepared: 08/02/2012
		Analyzed: 08/02/2012
Analyte	ug/sample	ug/ft ² RL (ug/sample)
Lead	<2.5	<23 2.5

Sample ID: 6163-03	Media: Ghost Wipe	Collected: 07/30/2012
Lab ID: 1221256003	Sampling Location: Armory-Mt. Pleasant	Received: 07/30/2012
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 100 cm ²	Prepared: 08/02/2012
		Analyzed: 08/02/2012
Analyte	ug/sample	ug/ft ² RL (ug/sample)
Lead	<2.5	<23 2.5

Sample ID: 6163-04	Media: Ghost Wipe	Collected: 07/30/2012
Lab ID: 1221256004	Sampling Location: Armory-Mt. Pleasant	Received: 07/30/2012
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 100 cm ²	Prepared: 08/02/2012
		Analyzed: 08/02/2012
Analyte	ug/sample	ug/ft ² RL (ug/sample)
Lead	<2.5	<23 2.5

ADDRESS 960 West LeVoy Drive, Salt Lake City, Utah, USA 84123 PHONE +1 801 266 7700 FAX +1 801 268 9992
ALS GROUP USA, CORP. Part of the ALS Laboratory Group A Campbell Brothers Limited Company

Environmental

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



BEST AVAILABLE COPY
ANALYTICAL REPORT

Workorder: **34-1221256**
Client Project ID: 12U-I6163/Armory-Mt. Pleasant
Purchase Order: 12U-I6163
Project Manager: **Non-Responsive**

Analytical Results

Sample ID: 6163-05	Media: Ghost Wipe	Collected: 07/30/2012
Lab ID: 1221256005	Sampling Location: Armory-Mt. Pleasant	Received: 07/30/2012
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 100 cm ²	Prepared: 08/02/2012 Analyzed: 08/02/2012

Analyte	ug/sample	ug/ft ²	RL (ug/sample)
Lead	<2.5	<23	2.5

Sample ID: 6163-06	Media: Ghost Wipe	Collected: 07/30/2012
Lab ID: 1221256006	Sampling Location: Armory-Mt. Pleasant	Received: 07/30/2012
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 100 cm ²	Prepared: 08/02/2012 Analyzed: 08/02/2012

Analyte	ug/sample	ug/ft ²	RL (ug/sample)
Lead	<2.5	<23	2.5

Sample ID: 6163-07	Media: Ghost Wipe	Collected: 07/30/2012
Lab ID: 1221256007	Sampling Location: Armory-Mt. Pleasant	Received: 07/30/2012
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 100 cm ²	Prepared: 08/02/2012 Analyzed: 08/02/2012

Analyte	ug/sample	ug/ft ²	RL (ug/sample)
Lead	<2.5	<23	2.5

Sample ID: 6163-08	Media: Ghost Wipe	Collected: 07/30/2012
Lab ID: 1221256008	Sampling Location: Armory-Mt. Pleasant	Received: 07/30/2012
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 100 cm ²	Prepared: 08/02/2012 Analyzed: 08/02/2012

Analyte	ug/sample	ug/ft ²	RL (ug/sample)
Lead	11	100	2.5

Sample ID: 6163-09	Media: Ghost Wipe	Collected: 07/30/2012
Lab ID: 1221256009	Sampling Location: Armory-Mt. Pleasant	Received: 07/30/2012
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 100 cm ²	Prepared: 08/02/2012 Analyzed: 08/02/2012

Analyte	ug/sample	ug/ft ²	RL (ug/sample)
Lead	34	310	2.5



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ANALYTICAL REPORT

Workorder: **34-1221256**
Client Project ID: 12U-I6163/Armory-Mt. Pleasant
Purchase Order: 12U-I6163
Project Manager: **Non-Responsive**

Analytical Results

Sample ID: 6163-10		Media: Ghost Wipe	Collected: 07/30/2012
Lab ID: 1221256010	Sampling Location: Armory-Mt. Pleasant		Received: 07/30/2012
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 100 cm ²	Prepared: 08/02/2012
			Analyzed: 08/02/2012
Analyte	ug/sample	ug/ft ²	RL (ug/sample)
Lead	<2.5	<23	2.5

Sample ID: 6163-11		Media: Ghost Wipe	Collected: 07/30/2012
Lab ID: 1221256011	Sampling Location: Armory-Mt. Pleasant		Received: 07/30/2012
Method: NIOSH 7300 Mod.		Sampling Parameter: Area Not Provided	Prepared: 08/02/2012
			Analyzed: 08/02/2012
Analyte	ug/sample	ug/ft ²	RL (ug/sample)
Lead	<2.5	NA	2.5

Sample ID: 6163-12		Media: Paint Chip	Collected: 07/30/2012
Lab ID: 1221256012	Sampling Location: Armory-Mt. Pleasant		Received: 07/30/2012
Method: NIOSH 7300 Mod.		Sampling Parameter: Weight 0.101 grams	Prepared: 08/01/2012
			Analyzed: 08/02/2012
Analyte	%	RL (%)	
Lead	<0.0025	0.0025	

Report Authorization

Method	Analyst	Peer Review
NIOSH 7300 Mod.	Non-Responsive	Non-Responsive
NIOSH 7300 Mod.		

Laboratory Contact Information

ALS Environmental
960 W Levoe Drive
Salt Lake City, Utah 84123

Phone: (801) 266-7700
Email: als@alsglobal.com
Web: www.alsslc.com



BEST AVAILABLE COPY
ANALYTICAL REPORT

Workorder: **34-1221256**
Client Project ID: 12U-I6163/Armory-Mt. Pleasant
Purchase Order: 12U-I6163
Project Manager: **Non-Responsive**

General Lab Comments

The results provided in this report relate only to the items tested.
Samples were received in acceptable condition unless otherwise noted.
Samples have not been blank corrected unless otherwise noted.
This test report shall not be reproduced, except in full, without written approval of ALS.

ALS provides professional analytical services for all samples submitted. ALS is not in a position to interpret the data and assumes no responsibility for the quality of the samples submitted.

All quality control samples processed with the samples in this report yielded acceptable results unless otherwise noted.

ALS is accredited for specific fields of testing (scopes) in the following testing sectors. The quality system implemented at ALS conforms to accreditation requirements and is applied to all analytical testing performed by ALS. The following table lists testing sector, accreditation body, accreditation number and website. Please contact these accrediting bodies or your ALS project manager for the current scope of accreditation that applies to your analytical testing.

Testing Sector	Accreditation Body (Standard)	Certificate Number	Website
Environmental	ACCLASS (DoD ELAP)	ADE-1420	http://www.aiclasscorp.com
	Utah (NELAC)	DATA1	http://health.utah.gov/lab/labimp/
	Nevada	UT00009	http://ndep.nv.gov/bsdwlabservice.htm
	Oklahoma	UT00009	http://www.deq.state.ok.us/CSDnew/
	Iowa	IA# 376	http://www.iowadnr.gov/InsideDNR/RegulatoryWater.aspx
	Florida (TNI)	E871067	http://www.dep.state.fl.us/labs/bars/sas/qa/
	Texas (TNI)	T104704456-11-1	http://www.tceq.texas.gov/field/qa/lab_accred_certif.html
Industrial Hygiene	AIHA (ISO 17025 & AIHA IHLAP/ELLAP)	101574	http://www.aihaaccreditedlabs.org
Lead Testing:			
CPSC	ACCLASS (ISO 17025, CPSC)	ADE-1420	http://www.aiclasscorp.com
Soil, Dust, Paint, Air	AIHA (ISO 17025, AIHA ELLAP and NLLAP)	101574	http://www.aihaaccreditedlabs.org
Dietary Supplements	ACCLASS (ISO 17025)	ADE-1420	http://www.aiclasscorp.com

Definitions

LOD = Limit of Detection = MDL = Method Detection Limit, A statistical estimate of method/media/instrument sensitivity.

LOQ = Limit of Quantitation = RL = Reporting Limit, A verified value of method/media/instrument sensitivity.

ND = Not Detected, Testing result not detected above the LOD or LOQ.

** No result could be reported, see sample comments for details.

< This testing result is less than the numerical value.

() This testing result is between the LOD and LOQ and has higher analytical uncertainty than values at or above the LOQ.

Appendix K
IHSW Violation Inventory Log



Industrial Hygiene Southwest

Violation Inventory Log

LOG OF SCHEDULE OF CORRECTIVE ACTION - COMPLIANCE WITH SAFETY AND HEALTH STANDARDS

Mount Pleasant Armory, Mount Pleasant, Utah

CONTROL NUMBER	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/NCOIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
UTMPA-073012-4.1 <input type="checkbox"/>	The analytical results for lead on the former indoor firing range room floor was 310 µg/ft ² .	Mount Pleasant Armory	3	Clean the floor of the former indoor firing range to a lead concentration of less than 40 µg/ft ² following the guidance in the attached SOPs.					IHSW SOP Lead, 29 CFR 1910.1025 (h)(1)
UTMPA-073012-4.4 <input type="checkbox"/>	An asbestos survey could not be located during this IH Assistance Visit.	Mount Pleasant Armory	3	Either locate the asbestos survey for this building or contract with a licensed firm to perform an asbestos survey and assessment.					29 CFR 1910.1001(i)(3)(i)
UTMPA-073012-4.4 <input type="checkbox"/>	Personnel have not been provided with asbestos awareness training.	Mount Pleasant Armory	4	Based on the findings of this survey, provide awareness training to assigned personnel for the specific types of asbestos in this Armory.					29 CFR 1910.1001
UTMPA-073012-4.7 <input type="checkbox"/>	Safety Training could not be located at this facility.	Mount Pleasant Armory	4	At a minimum, provide hazard communication training to those who use chemicals in the work place and fire prevention training, fire safety, and fire extinguisher training to all personnel who occupy the facility.					29 CFR 1910.1200 (h), 29 CFR 1910.157 (g), 29 CFR 1910.39 (b)
UTMPA-073012-4.10 <input type="checkbox"/>	Fire extinguishers have not been inspected monthly.	Mount Pleasant Armory	4	Ensure all fire extinguishers are provided a monthly inspection and document these inspections on the attached inspection cards.					29 CFR 1910.157 (e) (2) & (3) and NFPA-10-2007, Para 7.2.1.2 & 7.3.1.1.1
UTMPA-073012-4.10 <input type="checkbox"/>	Three outlets in the dish wash room, two on the west wall of Room 135, one under the fire extinguisher by the door to Room 136, and one on the south wall of Room 136 are marked GFCI protected but are not GFCI protected.	Mount Pleasant Armory	4	Repair or replace the GFCI outlets that are within six feet of a water source.					NFPA 70, Article 210-8

Appendix L

Recommendations

Summary of Recommendations for UTARNG Armory, Mount Pleasant, Utah

4.1 Lead Wipe Sampling

1. Clean the floor of the former indoor firing range to a lead concentration of less than 40 $\mu\text{g}/\text{ft}^2$ following the guidance in the attached SOPs.
2. Perform post-cleanup wipe sampling to ensure lead levels are within the criterion outlined in the IHSW SOP for Armory Cleanup.

4.4 Asbestos Management

1. Locate the asbestos survey report for this building or contract with a licensed firm to perform an asbestos survey and assessment.
2. Once asbestos-containing materials have been identified and assessed, provide awareness training to assigned personnel for the specific material types and locations of asbestos in this armory.

4.7 Safety Training and Record Keeping

1. At a minimum, provide hazard communication training to those who use chemicals in the work place and fire prevention training, fire safety, and fire extinguisher training to all personnel who occupy the facility.

4.10 General Safety Walk-Through

1. Ensure all fire extinguishers are provided a monthly inspection and document these inspections on the attached inspection cards.
2. Repair or replace the GFCI outlets that are within six feet of a water source.

Appendix M

DD Form 2214

NOISE SURVEY (Sound Level Meter Survey)									
1. DATE (YYYYMMDD) 20120730					2. TYPE SURVEY (Enter code) 1 1 - INITIAL SURVEY 2 - RE-SURVEY 3 - OTHER				
3. SOUND LEVEL METER			4. MICROPHONE			5. CALIBRATOR			
a. MANUFACTURER 3M			a. MANUFACTURER 3M			a. MANUFACTURER 3M			
b. MODEL SD-100		c. SERIAL NO. SD20010465	b. MODEL SD-100		c. SERIAL NO. SD20010465	b. MODEL QC-10		c. SERIAL NO. QIA120222	
d. LAST ELECTROACOUSTIC CALIB DATE (YYYYMMDD) 20111012			d. LAST ELECTROACOUSTIC CALIB DATE (YYYYMMDD) 20111012			d. LAST ELECTROACOUSTIC CALIB DATE (YYYYMMDD) 20111012			
6. WIND SCREEN (X one) <input checked="" type="checkbox"/> USED <input type="checkbox"/> NOT USED					7. MEASUREMENTS OBTAINED (X one) <input checked="" type="checkbox"/> INDOORS <input type="checkbox"/> OUTDOORS				
8. DESCRIPTION OF AREAS/DUTIES WHERE NOISE SURVEY CONDUCTED (Illustrate on additional sheet and attach to form) Kitchen						9. PRIMARY SOURCE OF NOISE See 11a, column below			
						10. SECONDARY SOURCE OF NOISE			
11. SOUND LEVEL DATA						12. PROTECTION REQUIRED (re: dBA - Level)			
a. LOCATION	b. METER ACTION	c. dBC	d. dBA	e. RISK ASSESSMENT CODE	a. NONE (Less than 85)	b. PLUG OR MUFF (85-108)	c. PLUG AND MUFF (108-118)	d. PLUG + MUFF + TIME LIMIT (Greater than 118)	
Fridge	S	70.5	63.5	IVD	X				
Hood Vent	S	70.1	63.5	IVD	X				
					X				
					X				
					X				
					X				
NOTES: Range of levels noted by /; i.e., 102/109. At operator stations, measure at ear level. METER ACTION: Enter F for fast meter action and S for slow meter action.									
13. REMARKS (i.e., Area and equipment posted, hearing protection in use, etc.)									
14. MORE DETAILED NOISE EVALUATION REQUIRED:					<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO (If "YES," identify type evaluation needed.)				
15. NAME(S) OF PERSON(S) IDENTIFIED FOR AUDIOMETRIC MONITORING (Use additional sheet if more space is needed and attach to form)									
16. SUPERVISOR OF NOISE-HAZARDOUS AREA OR OPERATION									
a. NAME (Last, First, Middle Initial) Non-Responsive				b. TELEPHONE (Include area code) (435) 462-2515		c. ORGANIZATION UTARNG			
17. SURVEY PERFORMED BY (Last Name, First Name, MI) Non-Responsive					18. HEARING CONSERVATION MONITOR (Last Name, First Name, MI) Non-Responsive				

INSTRUCTIONS

(Refer to DoD Component Instructions for Additional Guidance)

PURPOSE: This form is intended to record noise survey results for the identification of potentially noise-hazardous environments.

GENERAL: Print all information in ink. Only medical, industrial hygiene, safety, or engineering personnel who meet training requirements specified by the DOD components will make sound level measurements.

1. Date - Enter date noise survey conducted (e.g., if Jan. 14, 1999, enter 19990114).

2. Type, Survey - Enter appropriate numeric code in box (e.g., enter "1" if area or operation not surveyed before or no available records of previous survey; enter "2" if resurvey conducted at regular intervals (such as once each 12 months); or enter "3" if noise being reevaluated to confirm validity of previously obtained measurements or for purposes other than indicated).

3. Sound Level Meter:

- a. Mfg - Enter name of company that produced sound level meter.
- b. Model - Enter manufacturer's designation.
- c. Serial No. - Enter manufacturer's serial number.
- d. Last Electroacoustic Calib Date - Enter year, month, day (see Item 1) of last comprehensive calibration required by DOD component. Not to include calibration checks made with acoustical calibrator.

4. Microphone (Fill in this section if microphone is detachable from sound level meter)

- a. Manufacturer - Enter name of company that produced microphone.
- b. Model - Enter manufacturer's designation.
- c. Serial No. - Enter manufacturer's serial number.
- d. Last Electroacoustic Calib Date - Enter year, month, and day (see Item 1) of last comprehensive calibration as required by DOD component.

5. Calibrator:

- a. Manufacturer - Enter name of company that produced calibrator.
- b. Model - Enter manufacturer's designation.
- c. Serial Number. Enter manufacturer's serial number.
- d. Last Electroacoustic Calib Date. Enter year, month, and day (see Item 1) of last comprehensive calibration as required by DoD component.

6. Wind Screen - Check appropriate box indicating if manufacturer's device to reduce wind noise is mounted over microphone assembly.

7. Measurements Obtained - Check appropriate box indicating if measurements obtained indoors or outdoors.

8. Description of Areas/Duties Where Noise Survey Conducted - Include building number(s), name of activity and/or operation, identify specific microphone locations, performance conditions and descriptions of machinery (e.g., rpm, load, etc). Where applicable, include noise-hazard contours of area. On additional sheet make simple line drawing of area and identify noise sources and locations of measurement.

9. Primary Source of Noise - If possible, identify the location(s) of the highest dBA value.

10. Secondary Source of Noise - If possible, identify all other noise sources when the primary noise source is off (e.g. background noise sources and other noise sources that may or may not be noise hazardous).

11. Sound Level Data

- a. Location - Position where measurement is obtained should correspond with those identified, or illustrated on form.
- b. Meter Action - See Notes in Sound Level Data Sec. levels measured with weighting switch of meter in "C" position.
- c. dBC - If required by DOD component, enter sound levels measured with weighting switch of meter in "C" position.
- d. dBA - Enter sound levels measured with weighting switch of meter in "A" position. See NOTES in Sound Level Data Section.

e. Risk Assessment Code - Enter expression of risk that combines elements of hazard severity and mishap probability. Hazard severity categories shall be assigned by roman numeral as follows:

(1) Category I - Catastrophic: May cause death or loss of a facility (Code I).

(2) Category II - Critical: May cause severe injury, e.g., severe occupational illness, or major property damage (Code II).

(3) Category III - Marginal: May cause minor injury, e.g., minor occupational illness, or minor property damage (Code III).

(4) Category IV - Negligible: Probably would not affect personnel safety or health, but is nevertheless in violation of specific criteria (Code IV). Mishap probability shall be assigned capital letter according to following criteria:

(a) Subcategory A: Likely to occur immediately or within a short period of time (Code A).

(b) Subcategory B: Probably will occur in time (Code B).

(c) Subcategory C: May occur in time (Code C).

(d) Subcategory D: Unlikely to occur (Code D).

Enter codes as IIB, IIIC, etc. Refer to DOD Instruction 6055.1/DOD component instructions for specific definitions and guidance.

12. Protection Required (re: dBA Level)

a. None (less than 85: If dBA levels less than 85, check this column. No hearing protectors required.

b. Plug or Muff (85 - 108): If dBA levels 85 - 108 inclusive, check this column. Earplugs, ear muffs, ear-canal caps, or noise-attenuating helmet required.

c. Plug and Muff (108 - 118): If dBA levels over 108 to 118 inclusive, check this column. Earplugs worn in combination with ear muffs or noise-attenuating helmet required.

d. Plug, Muff & Time: If dBA levels over 118, check this column. Earplugs worn in combination with ear muffs or noise-attenuating helmet and time limit (to be determined by DOD component) required.

13. Remarks - Enter type of hearing protection in use, whether area and equipment posted with appropriate caution signs, etc.

14. More Detailed Noise Evaluation Required - Check "yes" box if more detailed noise evaluation is required; check "no" box if not. Specify the type of evaluation needed (e.g., octave band analysis, etc.).

15. Name(s) of Persons Identified for Audiometric Monitoring - List names of individuals routinely exposed to noise in preceding locations.

16. Supervisor of Noise - Hazardous Area or Operation - Enter name (surname, given name, & middle initial) of the first-echelon (immediate) supervisor of the location (and personnel) surveyed.

17. Survey Performed by - Enter name (surname, given name & middle initial) of individual performing survey & signature.

18. Hearing Conservation Monitor - Enter name of individual reviewing survey results & signature. Usually local surgeon or designated representative.

Appendix N
IHSW Lead Cleanup SOP

Lead

CLEANUP & FOLLOW-UP HOUSEKEEPING RECOMMENDATIONS

Materials Needed:

1. Cloth Mop head (s) & Mop head holder(s) with handle.
2. Mop bucket (s) with wringer.
3. Clean cotton rags and sponges.
4. Disposable gloves
5. Large barrel (55 gal.) to store wastewater in after changing out of dirty scrub water.
6. Disposable overshoes or rubber boots. Personnel conducting cleaning operations should not take clothes, boots, etc., home for laundering.
7. HEPA vacuum
8. Six (6) mill plastic bags to dispose of waste.
9. Waste water containers.

Disposal of Waste Water and Cleaning Materials:

1. *NOTE:* Consult with Local Army National Guard Environmental Office prior to taking any collection, disposal or wiping activities commence. Each state and territory may have additional regulatory guidance on collection, storage and disposal of wastewater.
2. Mop heads should be disposed of after initial cleanup, unless otherwise advised by Environmental office personnel. Note: thorough cleaning of mop heads may be sufficient enough to reuse on future Armory cleanups but check with local Environmental Office.
3. Disposable gloves should be treated as hazardous waste.
4. Soiled cotton rags should be treated as hazardous waste.
5. Wash water contaminated with Lead can be collected and allowed to slowly evaporate leaving Lead deposits/sludge that may be collected in plastic containers, placed in metal drums, and stored for future delivery to an authorized hazardous waste disposal site.

- a. Drums shall be properly labeled to identify contents In-Accordance With (IAW) Federal, State and local regulatory guidance.
- b. Disposal of containerized waste shall be coordinated IAW State hazardous waste program requirements.
- c. The Environmental Office shall coordinate removal and disposal of all containerized hazardous waste through established waste streams.

Post-Cleanup Precautionary Measures:

1. Thoroughly wash hands with soap and water.
2. Rinse off rubber boots with soap and water, capturing wastewater for collection into established waste stream. If personnel choose to use over shoes for protection, dispose of overshoes into waste stream. NOTE: This recommendation is for initial clean up activities and PPE requirements may be reduced after it has been determined non-hazardous levels have been achieved.
3. Wash BDU's or personal clothing separately from children's clothes.

NOTE: No eating, drinking or cosmetics allowed during cleanup procedures (these may be allowed after washing of hands/face and done outside of cleanup area)

NOTE: Avoid blowing, shaking or like actions which could potentially disperses lead dust. Dry sweeping, dusting, wiping or blowing with compressed air shall not be permitted

Initial Cleanup:

1. Use a vacuum cleaner equipped with a HEPA exhaust filter. HEPA vacuum all surfaces in the room (ceiling, walls trim, and floors). Start with the ceiling and work down, moving toward the entry door. **Completely clean each room before moving on.**
2. Prepare water and detergent for the wipe down phase, according to manufactures recommendations.

3. Wet wipe, with cotton rags or sponge, any horizontal, diagonal or vertical surfaces up six (6) feet from floor surfaces using hot water and "Spic-n-Span" or an equivalent product.
 - a. Rinse out cleaning cloths thoroughly and frequently.
 - b. Change out cleaning water as necessary.

NOTE: If walls to be cleaned show signs of deterioration, e.g., chipping or crumbling paint, in which wiping, scrubbing, or disrupting might potentially increase or spread contamination, then this portion of the clean up should be avoided.

4. Now prepare water and detergent (e.g. Spic N Span, Mr. Clean, Pine Sol) for the mopping phase, according to manufactures recommendations, which should be found on the products label for general clean up.
 - a. Change out water frequently (when water appears dirty)
 - b. Rinse out mop heads frequently to prevent contamination of dirty water.
5. Cover entire drill floor surface with above prescribed water and detergent.
6. Final rinse should be with clean water only - -after mop heads have been cleaned.

Recommended Follow-up Housekeeping Practices *after Clearance sampling of cleaned area is performed by certified personnel:*

1. Floor cleaning and dusting should be accomplished using the wet method described in Initial Armory Cleanup SOP.

Note: Only exception to these wet cleaning procedures would be the use of a chemically treated dust floor mop. This can be used for follow-up armory cleaning by sweeping of large particles of dirt and paper.

- a. Pre-treated (chemically treated) dust floor mop will limit dust particles from being disbursed into the surround atmosphere.

- b. If treated dust mop is used - -Do Not Shake Mop head - - have mop head laundered after use. **Always keep used dust mop heads in sealed double plastic bags when stored at armory/facility.** Shaking of mop head could release unwanted contaminants into surrounding atmosphere.
2. Frequency of Cleanup- Armories will vary, according to usage and how often they should be cleaned. The following general cleaning schedule is provided:
 - a. Only full-time technicians and traditional soldiers using facility during the month. (*Cleaned Monthly*)
 - b. Occasional activities taking place during the month, e.g., 1-2 classes or volleyball games, etc. (*Cleaned 2x's Monthly*)
 - c. Used regularly by soldiers or outside agencies/personnel. (*Cleaned Regularly - -at least Weekly*)

NOTE: Armories with adjoining Indoor Firing Ranges (IFR) should be cleaned more than weekly, again depending on use of Armory and IFR.

NOTE: Clearance sampling/testing is to be accomplished by certified personnel after these cleanup procedures are followed. If the area is an average Armory, occupied by adults only, for which you are cleaning and **is not a Converted IFR space**, you may continue to utilize the Armory space before the officials re-test this space. Please notify your Safety and/or Occupational Health personnel of the completion of this cleaning regime and they will notify the proper officials of the sampling/testing requirements needed.

If work is contracted out, a third party should do the clearance sampling.

Young children and females who are pregnant, there should be posted signs on all facilities, warning of the potential danger of exposure to lead dust.

2.1.1 The IH community found unexpectedly high levels of lead dust during a normal IH investigation (survey) in an armory that had an Indoor Firing Range (IFR) within it. Wipe samples were taken in another armory without an IFR, only to find that this armory had higher than expected levels of lead dust, also.

2.1.2 Each ARNG Regional Industrial Hygienist has planned to survey all their armories spearheaded by the Midwest regional office, to determine the magnitude of these findings.

2.1.3 About 2/3rds of the armories tested so far, did not have "a clean bill of health". Now the IH community will attempt to discern where the contamination is coming from and also, give guidance on how to deal with these contaminant.

2.1.4 Air sampling of the armories tested have shown very low levels of lead dust in the breathing area. Dust wipe samples have varied in quantities present but have exceeded the EPA's floor standard and the ARNG IFR guidelines.

3. Relevant Standards and Guidelines.

3.1 Airborne Lead.

3.1.1 The Occupational Safety and Health Administrations (OSHA) Permissible Exposure Level (PEL) for airborne lead is **50 micrograms per cubic meter** (ug/m³), averaged over an 8-hour work shift. The OSHA action level is 30 ug/m³.

3.2 Blood Lead Level (BLL).

3.2.1 OSHA requires that personnel who are exposed to airborne lead above the PEL be offered medical surveillance that includes blood lead level monitoring. Personnel with total **BLL above 50 micrograms per deciliter** (ug/dl) of blood are required to be removed from occupational lead exposures until the BLL drops back to 40.

3.2.2 Women who may become pregnant who are exposed to lead should consult with their physician. Fetal and newborn BLLs are similar to those of

the mother. The Center for Disease Control and Prevention considers levels above 10 ug/dl in children under 6 to be elevated BLLs.

3.3 Lead in Surface Dust.

3.3.1 There are no established standards for lead levels in dust within buildings other than those used by children under 6. The Environmental Protection Agency (EPA) along with Housing and Urban Development (HUD) floor dust lead level standard (which is currently **40 ug/ft²**) does not apply to workplace surfaces, and would be impossible to maintain in many industrial facilities. (EPA 40 CFR Part 745)

3.3.1.1 The EPA interior windowsill standard is 250 ug/ft².

3.3.1.2 The EPA standard for window trough is 400 ug/ft².

3.3.2 OSHA cites a level of 200 ug/ft² as guidance to its own inspectors for evaluating the cleanliness of lunchroom and locker room surfaces that are supposed to be kept as clean as possible.

3.4 Lead in Paint.

3.4.1 EPA's standard for lead-based paint or other surface coatings that contain lead equal to or exceeding 1.0 milligram per square centimeter (mg/cm²) or 0.5 percent (%) by weight or 5000 parts per million (ppm) by weight.

4. Indoor Firing Ranges (IFR).

4.1 Relevant Standards and Guidelines.

4.1.1 OSHA guidelines stated above (see 3.3.2) are the recommended working levels to achieve in an active IFR.

4.1.2 NGR 385-10 guideline reflects that of OSHA at 200 ug/ft² for lead dust on surfaces.

4.2 Maintenance and Cleaning.

4.2.1 Follow NGR 385-10, along with SOP found in All States Letter (Log Number P00-0059 along with All States Letter (Log Number P01-0075)

addressing Policy and Responsibilities for Inspection, Evaluation and Operation of ARNG Indoor Firing Ranges. Also, utilize AR 385-63 Range Safety.

4.2.2 Cross contamination is a concern where Armories and IFR's are co-located. Keeping an IFR dust level at 200 ug/ft² does not meet the 40 ug/ft² required on floor surfaces for children 6 and under. Tracking lead dust to other parts of the armory is a concern and should be addressed by the facilities manager and the range custodian.

5. Converted/Closed Indoor Firing Ranges.

5.1 Closed IFR.

5.1.1 Closed IFR's should be not utilized for anything, e.g. storage, office space or anything else. This should be a voided space with no entry. The IFR should have been cleaned to at least 200 ug/ft² before closure to prevent contamination via air stream or other means.

5.1.2 Should be locked and signage placed on entryway to warn personnel of lead contents.

5.2 Converted IFR-- NG PAM 385-16 "Guidelines for converting of IFR."

5.2.1 These spaces should have been cleaned and taken to lowest possible level, e.g. 0-40 ug/ft², and then the proper sealant applied, retested via wipe samples. The results should be below the pre-sealant sample results and as close to zero as possible.

5.2.2 The backstop and ventilation system should have been removed prior to cleaning of the range.

5.2.3 **If all of this wasn't accomplished initially and you have high lead levels after this Baseline survey, or if it was accomplished, you need to talk to the original contractor who was responsible for the cleanup or get the area re-cleaned by a different contractor. Converted IFR's have to meet certain criteria before they can be changed into something that will be utilized for an office, storage, or something else where contamination to an individual may occur.**

6. Armory Cleanup.

6.1 High Test Result.

6.1.1 If the public utilizes your facility and the results came back above 40 ug/ft² you are responsible for cleaning this area and adjoining areas to meet the 40 ug/ft² or less.

6.1.1.1 Unless you can guarantee no children under the age of 7 will come into your facility.

6.1.1.2 Unless your state public health has other guidance, e.g., post signage to warn personnel who are pregnant or of child bearing age, or under the age of 7 y/o.

6.1.1.3 Signs stating "No smoking, drinking or eating, application of make-up without washing of hands prior to activity."

6.2 Cleaning of Building. Before proceeding into the cleanup mode, first, discuss with your Environmental office what procedures they would recommend and then coordinate your efforts with local agencies, if warranted.

6.2.1 The building, and dusty materials and equipment in it should be cleaned one time to reach the dust lead levels appropriate for the function of this facility, e.g., used by full-time personnel only, utilized by adults or children 7 y/o, or order children only, or utilized by pregnant individuals and/or children under the age of 7. NOTE: This type cleaning implies that this is not a facility that has an active Indoor Firing Range. For facilities with active ranges, these facilities should be monitored with wipe samples taken over the drill floor area by the Range Custodian quarterly, to ascertain the level of lead is at the required level for your particular facility and situation.

6.2.1.1 This cleanup can be accomplished using a HEPA vacuum (a very tedious and long operation) and then by utilizing a wet method with "Spic n Span" or something equivalent to this detergent - using wet rags to wipe down surfaces and mops soaked in this solution to do floor area. NOTE: Personal protective gloves, rubber boots or protective disposable shoe/boot covers should be used during this procedure and personnel's

clothing should be washed separately from their families, if they have young children at home. Personnel should wash their hands after performing this operation to assure lead contaminants are not ingested.

6.2.1.2 Frequent changing out of the water used is vital. Disposal of this hazardous waste water and rags/mop heads, Personal Protective Equipment (PPE), etc., should be coordinated with your Environmental office.

6.2.2 Clean all ductwork where lead was found. EPA has a protocol specifically for replacing or cleaning lead in dust form in HVAC systems. EPA Office of Pollution Prevention and Toxics, "*Reducing Lead Hazards When Remodeling Your Home*" www.epa.gov/opptintr/lead/rrpamph.pdf.

6.2.3 Continue to enforce good housekeeping and hygiene practices. These measures make good sense to minimize exposures to any toxic chemicals in the workplace.

6.2.4 Provide lead awareness training to the general workforce and any occupants of your facility.

NOTE: Before you start any new procedures or practices be aware of the local city and state regulations in your area.

4 Sept 13



**ARMY NATIONAL GUARD
INDUSTRIAL HYGIENE - SOUTHWEST**

Guam • Hawaii • California • Oregon • Washington • Nevada • Arizona • Idaho • Utah • Wyoming • Montana • New Mexico • Nebraska

Industrial Hygiene Site Assistance Visit

**Mt Pleasant Armory
Indoor Firing Range (IFR)
525 West 1000 South
Mt. Pleasant, UT 84647**

10510 Superfortress Avenue, Suite C, Mather, CA 95655 (916) 854-1494



DEPARTMENT OF THE ARMY AND AIRFORCE
NATIONAL GUARD BUREAU
INDUSTRIAL HYGIENE SOUTHWEST
10510 Superfortress Ave, Ste. C
Mather, CA 95655

ARNG-CSG-P

02 December 2013

MEMORANDUM THRU

, OHM, 12953

, UT 84020

FOR Commander Mt Pleasant Armory Indoor Firing Range (IFR) 525 West 1000 South, Mt Pleasant, UT 84647

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (SAV) for the Mt Pleasant Armory Indoor Firing Range (IFR) 525 West 1000 South, Mt Pleasant, UT on 04 SEP 2013

1. References. See survey report.

2. General.

a. At the request of the NGB Industrial Hygiene, Southwest (IHSW) Region, an Industrial Hygiene Site Assistance Visit and cursory review of safety related items and programs was conducted at the Mt Pleasant Armory Indoor Firing Range (IFR) 525 West 1000 South, Mt Pleasant, UT on 04 SEP 2013.

b. The findings and recommendations in this Executive Summary are controlling and supersede all recommendations in the contractor report (reference Attachment II). However, IHSW concurs with the observations and findings within the attached contractor report.

c. Risk Assessment Codes (RAC) provided in this report have been derived from two sources: Deriving Risk Assessment Codes (RAC's) for Health Hazards (Ref: DOD Instruction 6055.1) and AR 385-10, The Army Safety Program.

d. Use of trademark names in the attached report, or this Executive Summary, does not imply Army National Guard endorsement of any product.

3. Findings. See survey report.

4. Commendable.

a. The facility was generally clean and orderly and personnel were helpful during this SAV.

5. Observations / Recommendations.

NOTE: This section provides conclusions and recommendations for the findings and observations made within the attached contractors report. The paragraphs are numbered to correspond to the sections where they were first noted. (i.e., paragraph 2.1a represents the 2.1a located within the contractors report.

a. Keep up the good Housekeeping and Safety practices. Utilize Armory Cleanup SOP accompanying this report for clean-up. (Exec. Summary) (NO RAC)

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (SAV) for the Mt Pleasant Armory Indoor Firing Range (IFR) 525 West 1000 South, Mt Pleasant, UT on 04 SEP 2013

6. Violation Correction Log.

a. IHSW has provided a Violation Correction Log derived from the observations from this visit. IHSW recommends the following:

1. Commander(s) assign an Action OIC/NCOIC, Suspense Date for completion, and Estimated Cost(s) to ensure item completion and corrective status is briefed during quarterly (or monthly) Safety Meetings/Councils until resolved.

2. Corrective measures should be implemented and accomplished at the lowest levels possible. Hazards and Corrective Measures that cannot be corrected at the facility level, and require assistance from higher headquarters or from the state level, should be elevated to the Quarterly State/BN Safety Council Meeting for resolution.

3. Recommend a representative from the facility attend all quarterly/monthly meetings to ensure the appropriate emphasis and corrective actions are followed for hazard resolution and abatement of the observations made during this visit.

4. Retain entries of the items corrected, or closed, for future reference. This may be accomplished by posting completed items within the Corrected Hazard Sheet portion of the Excel Violation Correction Log Workbook we've provided.

5. The preferred method to document and track identified hazards for resolution is for their entry into the Reserve Component Automation System – Safety and Occupational Health (RCAS-SOH) Program.

b. IHSW recommends further program refinement through written documentation for standardized guidance to the personnel performing the processes. Conducting Hazard Assessments consistent with 29 Code of Federal Regulations (CFR) 1910.132, General Requirements for Personal Protective Equipment and AR 40-5, Preventive Medicine, would provide this continued program refinement.

7. Hazard Assessment/Job Safety Analysis (JSA).

a. Documenting the Hazard Assessments provides a method to obtain initial and periodic review from the Industrial Hygiene, Occupational Health and Safety Professions located at the JFHQ/HQ/state level.

b. The Hazard Assessments should be used as written training materials for the new, transfer and unit personnel working under the auspice of the facility.

c. IHSW recommends facility supervisory staff and facility personnel conduct initial Hazard Assessments outlined in AR 40-5, Army Preventive Medicine (Section V) and 29 CFR 1910.132 and submit for review and obtain approval from the state Industrial Hygiene, Occupational Health and Safety Professions.

d. We have provided an appendix with Hazard Assessments (HA) examples of some of this facilities operations. Additional operations can utilize this format to design HA not observed during this SAV.

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (SAV) for the Mt Pleasant Armory Indoor Firing Range (IFR) 525 West 1000 South, Mt Pleasant, UT on 04 SEP 2013

e. An integral and important factor of the Hazard Assessment/JSA process is for the review and guidance from qualified Safety, Occupational Health and Industrial Hygiene professions located at the higher headquarters level or state level. For this reason, the Hazard Assessments (to include all pertinent and supporting documents) should be completed by the facility personnel and forward to the Utah Army National Guard Industrial Hygiene, Occupational Health and Safety Office for final review and approval (signature).

f. Job Safety Analysis (JSA's)/Hazard Assessments.

NOTE: The Hazard Assessments can be used for monthly meetings to brief/train, and document large group training events and activities.

8. IHSW recommends the Senior Unit Commander of this Facility and any Co-Tenant Organizations or Units, review and provide assistance with implementation of these recommendations. This will educate the chain of command and allow the unit or co-tenant organizations to take any necessary precautions or actions required by them and their personnel.

9. To assist you with execution of your responsibilities in correcting the observations noted, we encourage you to consult with the State Safety Manager, Occupational Health Manager and Industrial Hygiene professions located and/or authorized within the State Safety and Occupational Health Office.

10. For additional information please contact the NGB-IHSW office at (916) 854-1491 or via email at

Non-Responsive

Non-Responsive

Industrial Hygiene



Industrial Hygiene Southwest
Violation Inventory Log
LOG OF SCHEDULE OF CORRECTIVE ACTION - COMPLIANCE WITH SAFETY AND HEALTH STANDARDS
Mt. Pleasant Armory, UT - Indoor Firing Range (IFR)

CONTROL NUMBER	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/NCIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
<input type="checkbox"/> UTMPA-090413- Exec. Summary	No Significant Adverse Observations noted during this Industrial Hygiene Site Assistant Visit	Armory	Non	Continue Sound Safety and Housekeeping Practices					NGB, OSHA Regulations

BEST AVAILABLE COPY

BEST AVAILABLE COPY

ARMORY**CLEANUP & FOLLOW-UP HOUSEKEEPING
RECOMMENDATIONS****Materials Needed:**

1. Cloth Mop head (s) & Mop head holder(s) with handle.
2. Mop bucket (s) with wringer.
3. Clean cotton rags and sponges.
4. Disposable gloves
5. Large barrel (55 gal.) to store wastewater in after changing out of dirty scrub water. Waste water containers.
6. Disposable overshoes or rubber boots. Personnel conducting cleaning operations should not take clothes, boots, etc., home for laundering.
7. HEPA vacuum
8. Six (6) mill plastic bags to dispose of waste.
9. Detergent with surfactant, e.g., Spic-N-Span, Mr. Clean, etc.

Disposal of Waste Water and Cleaning Materials:

1. *NOTE:* Consult with Local Army National Guard Environmental Office prior to taking any collection, disposal or wiping activities commence. Each state and territory may have additional regulatory guidance on collection, storage and disposal of wastewater.
2. Mop heads should be disposed of after initial cleanup, unless otherwise advised by Environmental office personnel. Note: thorough cleaning of mop heads may be sufficient enough to reuse on future Armory cleanups but check with local Environmental Office.
3. Disposable gloves should be treated as hazardous waste.
4. Soiled cotton rags should be treated as hazardous waste.
5. Wash water contaminated with Lead can be collected and allowed to slowly evaporate leaving Lead deposits/sludge that may be collected in plastic containers, placed in metal drums, and stored for future delivery to an authorized hazardous waste disposal site.

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- c. The Environmental Office shall coordinate removal and disposal of all containerized hazardous waste through established waste streams.

Post-Cleanup Precautionary Measures:

1. Thoroughly wash hands with soap and water.
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NOTE: Avoid blowing, shaking or like actions which could potentially disperse lead dust. Dry sweeping, dusting, wiping or blowing with compressed air shall not be permitted

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2. Prepare water and detergent for the wipe down phase, according to manufactures recommendations.

3. Wet wipe, with cotton rags or sponge, any horizontal, diagonal or vertical surfaces up six (6) feet from floor surfaces using hot water and "Spic-n-Span" or an equivalent product.
 - a. Rinse out cleaning cloths thoroughly and frequently.
 - b. Change out cleaning water as necessary.

NOTE: If walls to be cleaned show signs of deterioration, e.g., chipping or crumbling paint, in which wiping, scrubbing, or disrupting might potentially increase or spread contamination, then this portion of the clean up should be avoided.

4. Now prepare water and detergent (e.g. Spic N Span, Mr. Clean, Pine Sol) for the mopping phase, according to manufactures recommendations, which should be found on the products label for general clean up.
 - a. Change out water frequently (when water appears dirty)
 - b. Rinse out mop heads frequently to prevent contamination of dirty water.
5. Cover entire drill floor surface with above prescribed water and detergent.
6. Final rinse should be with clean water only - -after mop heads have been cleaned.

Recommended Follow-up Housekeeping Practices *after Clearance sampling of cleaned area is performed by certified personnel:*

1. Floor cleaning and dusting should be accomplished using the wet method described in Initial Armory Cleanup SOP.

Note: Only exception to these wet cleaning procedures would be the use of a chemically treated dust floor mop. This can be used for follow-up armory cleaning by sweeping of large particles of dirt and paper.

- a. Pre-treated (chemically treated) dust floor mop will limit dust particles from being disbursed into the surround atmosphere.

- b. If treated dust mop is used - -Do Not Shake Mop head - - have mop head laundered after use. **Always keep used dust mop heads in sealed double plastic bags when stored at armory/facility.** Shaking of mop head could release unwanted contaminants into surrounding atmosphere.
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 - c. Used regularly by soldiers or outside agencies/personnel. (*Cleaned Regularly - -at least Weekly*)

NOTE: Armories with adjoining Indoor Firing Ranges (IFR) should be cleaned more than weekly, again depending on use of Armory and IFR.

NOTE: Clearance sampling/testing is to be accomplished by certified personnel after these cleanup procedures are followed. If the area is an average Armory, occupied by adults only, for which you are cleaning and **is not a Converted IFR space**, you may continue to utilize the Armory space before the officials re-test this space. Please notify your Safety and/or Occupational Health personnel of the completion of this cleaning regime and they will notify the proper officials of the sampling/testing requirements needed.

If work is contracted out, a third party should do the clearance sampling.

Young children and females who are pregnant, there should be posted signs on all facilities, warning of the potential danger of exposure to lead dust.



IH ASSISTANCE VISIT

**Indoor Firing Range
Utah Army National Guard
525 West 1000 South
Mt. Pleasant, UT 84647**

September 23, 2012

Prepared for:

**Industrial Hygiene Southwest
10510 Superfortress Avenue, Suite C
Mather, California 95655**

Non-Responsive

Non-Responsive

AL137634

640 EAST WILMINGTON AVENUE

SALT LAKE CITY, UT 84106

TELEPHONE: 801-466-2223

FAX: 801-466-9616

E-MAIL:

SALT LAKE CITY

EMERYVILLE

PHOENIX

DENVER

SEATTLE

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Appendix D	Drawing: Lead Wipe Sample Locations
Appendix E	Photo Log
Appendix F	Field Notes (Facility Background Info Worksheet)
Appendix G	Lead Clean-up SOP

EXECUTIVE SUMMARY

On September 4, 2013 **Non-Responsive** Certified Safety Professional (CSP) with IHI Environmental (IHI), conducted an Industrial Hygiene (IH) Assistance Visit at the Utah Army National Guard Indoor Firing Range (IFR) located at 525 West 1000 South Mt. Pleasant, Utah 84647. The primary point of contact for information gathered during this survey was **Non-Responsive** (435) 462-2515, **Non-Responsive**.

The objectives of this IH Assistance Visit were to determine if the firing range is operational or converted, and to determine if the range and adjacent spaces were contaminated with lead residues above the limits outlined in NGP 420-15, *Guidelines and Procedures for Rehabilitation and Conversion of Indoor Firing Ranges*, and the *Standard Operating Procedure (SOP) for Armory Cleanup & Follow-up Housekeeping*.

There are no significant findings for this IH Assistance Visit and a Violation Inventory Log is not provided for this report.

The report that follows this Executive Summary should be read in its entirety because it includes important information not included in this summary, such as task descriptions, work space locations, regulatory requirements, and additional recommendations.

1.0 INTRODUCTION

On September 4, 2013, [Non-Responsive] Certified Safety Professional, (CSP), with IHI Environmental (IHI), conducted an Industrial Hygiene (IH) Assistance Visit at the Utah Army National Guard Indoor Firing Range (IFR) located at 525 West 1000 South Mt. Pleasant, Utah 84647. The primary point of contact for information gathered during this survey was [Non-Responsive] 435) 462-2515, [Non-Responsive]

1.1 Objectives

The objectives of this IH Assistance Visit were to determine if the firing range is operational or converted, and to determine if the range and adjacent spaces were contaminated with lead residues above the limits outlined in NGP 420-15, *Guidelines and Procedures for Rehabilitation and Conversion of Indoor Firing Ranges*, and the *Standard Operating Procedure (SOP) for Armory Cleanup & Follow-up Housekeeping*.

1.2 Scope of Work

To achieve the above objectives at this facility, the visit included the following:

- evaluate the status of the firing range;
- collect lead surface wipe samples from the firing range, adjacent spaces, and any areas where weapons are cleaned; and
- provide a report of findings.

2.0 METHODS

2.1 Lead Wipe Sampling

Lead wipe samples were collected on floor surfaces in the former Indoor Firing Range (IFR) at the former air plenum area, former firing line, former mid-range, and the former bullet trap location. Additional lead wipe samples were collected on the floor of the maintenance bay behind the former air plenum area, on the floor at the entrance to the former firing range, and on the drill hall floor. Lead Wipe™ brand wipes were used with 100-square-centimeter disposal templates. The wipes used conform to American Society for Testing and Materials E1792, *Standard Specification for Wipe Sampling Materials for Lead in Surface Dust*. The

collected wipe samples were placed in clean and labeled plastic containers. Samples were submitted to ALS Laboratories for analysis, using NIOSH Method 7300.

2.2 Quality Assurance

IHI employs, at a minimum, the following methods to help assure quality of field investigations and reports:

- Use of appropriately educated and experienced personnel;
- Documentation of pertinent field and sampling information;
- Continuing education of technical personnel through attendance at training sessions and conferences, and literature review;
- Peer and supervisory review of sampling strategy, field methods, calculations, and reports;
- Strict adherence to method requirements, in particular to NIOSH and OSHA, standard methods, including strict chain-of-custody protocol;
- Use of accredited laboratories, or, in cases where specific accreditation is not available, choice of laboratories of good reputation, having strong QA/QC programs;
- Calibration of instruments, including field calibration via manufacturers' recommended procedures and routine (typically annual) off-site calibration of equipment via certified third parties.

3.0 FINDINGS

3.1 Range Status and Description

The IFR at this armory has been decommissioned and all associated heating, ventilation, and air conditioning (HVAC) equipment has been removed. The interior of the firing range was remodeled in May of 2013. The interior remodel of 2013 included the entire interior of the IFR. Office space has been built throughout the length of the interior of the IFR. The office remodel included carpeting the entire floor with glued-down 2-foot by 2-foot carpet tiles, furring-out the previous exterior cinder block walls with framing and drywall, installing two large retractable divider walls, adding two large closets, a new drop ceiling consisting of 2-

foot by 4-foot drop-in tiles on a grid system installed across the entire ceiling, new HVAC servicing the office area, and new windows along the south wall. The two large closets have been built in the place where the old supply air plenum was located behind the old firing line. The American Legion holds meetings approximately once per month in the building in the conference room. Weapons are not cleaned inside this armory. Weapons are cleaned at Camp Williams after use during guard drills, and are returned to the Mt. Pleasant Armory in a clean condition for storage in the vault on site.

3.2 Wipe Sampling Results

The laboratory analytical results indicate that the lead concentrations on all but one lead wipe sample collected within the converted firing range and adjacent areas were well below the 40-microgramper-square-foot ($\mu\text{g}/\text{ft}^2$) standard outlined in NGP 420-15, *Guidelines and Procedures for Rehabilitation and Conversion of Indoor Firing Ranges*. One lead wipe sample collected on the floor of the maintenance by behind the former air plenum area indicated a lead concentration of $62 \mu\text{g}/\text{ft}^2$, well below the $200\text{-}\mu\text{g}/\text{ft}^2$ criterion outlined in NGP-420-15 for maintenance areas.

Table 1 in Appendix B contains the complete list of the sample results and the laboratory analytical reports are included in Appendix C. A drawing identifying all sample locations is included in Appendix D.

4.0 RECOMMENDATIONS

None

There are no significant findings for this IH Assistance Visit and a Violation Inventory Log is not provided for this report.

5.0 PROJECT LIMITATIONS

This Project was performed using, as a minimum, practices consistent with standards acceptable within the industry at this time, and a level of diligence typically exercised by industrial hygiene and environmental consultants performing similar services.

The procedures used in this investigation attempt to establish a balance between the competing goals of limiting investigative and reporting costs and time, and reducing the

uncertainty about unknown conditions. Therefore, because the findings of this report were derived from the scope, costs, time, and other limitations, the conclusions should not be construed as a guarantee that all environmental or occupational hazards have been identified and fully evaluated. Where sample collection and testing have been performed, IHI's professional opinions are based in part on the interpretation of data from discrete sampling locations that may not represent conditions at non-sampled locations. IHI assumes no responsibility for omissions or errors resulting from inaccurate information or data provided by sources outside of IHI, or from omissions or errors in public records.

Furthermore, it is emphasized that the final decision on how much risk to accept always remains with the client since IHI is not in a position to fully understand all of the client's needs. Clients with a greater aversion to risk may want to take additional actions while others, with less aversion to risk, may want to take no further action.

6.0 PROJECT APPROVAL

This IH Assistance Visit was reviewed and approved by:

Non-Responsive

September 20, 2013

Date

Senior Project Manager

7.0 TECHNICAL ASSISTANCE

Technical Assistance: For technical assistance regarding information found in this report or the performed survey, please contact **Non-Responsive** at 801-466-2223, or **Non-Responsive** of the Southwest Regional Industrial Hygiene Office, 916-804-1707. Contact the State Safety and Occupational Health Office and/or the Regional Industrial Hygienist if the operations change, or the personnel are incapable of following the recommendations.

Table 1

Lead Wipe Results

Former Indoor Firing Range
Mt. Pleasant, UT

Lead Wipe Sample Results			
Sample Number	Collection Date	Location	Result $\mu\text{g}/\text{ft}^2$
634-01	9/4/2013	Maintenance area behind supply air plenum (floor - exposed concrete)	63
634-02	9/4/2013	Inside Former Range Entrance (floor under carpet)	<12
634-03	9/4/2013	Former Supply Air Plenum (floor under carpet)	<12
634-04	9/4/2013	Former Shooting Line (floor under carpet)	13
634-05	9/4/2013	Former Mid-Range Line (floor under carpet)	<12
634-06	9/4/2013	In Front of Former Bullet Trap Area (floor under carpet)	20
634-07	9/4/2013	Behind Former Bullet Trap Area (floor under carpet)	<12
634-08	9/4/2013	Former Bullet Trap Area (southwest wall - drywall surface)	<12
634-09	9/4/2013	Entrance to Former Indoor Firing Range (floor - exposed concrete)	18
634-10	9/4/2013	Center of Drill Hall (floor - varnished wood)	<12
634-11	9/4/2013	Field Blank	<12

 $\mu\text{g}/\text{ft}^2$ = micrograms per square foot of area

< = less than the laboratory reporting limit

APPENDIX C
Laboratories Analytical Results - Lead



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ANALYTICAL REPORT

Report Date: September 11, 2013

Non-ResponsiveEnvironmental
640 East Wilmington Avenue
Salt Lake City, UT 84106

Phone: (801) 466-2223

Fax: (801) 466-9616

E-mail: **Non-Responsive**

Workorder: 34-1324966

Client Project ID: AL137634

Purchase Order: AL137634

Project Manager: **Non-Responsive**

Analytical Results

Sample ID: 634-01	Media: Lead Dust Wipe	Collected: 09/04/2013
Lab ID: 1324966001	Sampling Location: Mt Pleasant Utah IFR	Received: 09/06/2013
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 100 cm ²	Prepared: 09/09/2013 Analyzed: 09/10/2013
Analyte	ug/sample	ug/ft ² RL (ug/sample)
Lead	6.7	63 1.3

Sample ID: 634-02	Media: Lead Dust Wipe	Collected: 09/04/2013
Lab ID: 1324966002	Sampling Location: Mt Pleasant Utah IFR	Received: 09/06/2013
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 100 cm ²	Prepared: 09/09/2013 Analyzed: 09/10/2013
Analyte	ug/sample	ug/ft ² RL (ug/sample)
Lead	<1.3	<12 1.3

Sample ID: 634-03	Media: Lead Dust Wipe	Collected: 09/04/2013
Lab ID: 1324966003	Sampling Location: Mt Pleasant Utah IFR	Received: 09/06/2013
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 100 cm ²	Prepared: 09/09/2013 Analyzed: 09/10/2013
Analyte	ug/sample	ug/ft ² RL (ug/sample)
Lead	<1.3	<12 1.3

Sample ID: 634-04	Media: Lead Dust Wipe	Collected: 09/04/2013
Lab ID: 1324966004	Sampling Location: Mt Pleasant Utah IFR	Received: 09/06/2013
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 100 cm ²	Prepared: 09/09/2013 Analyzed: 09/10/2013
Analyte	ug/sample	ug/ft ² RL (ug/sample)
Lead	1.4	13 1.3

ADDRESS 960 West LeVoy Drive, Salt Lake City, Utah, 84123 USA PHONE +1 801 266 7700 FAX +1 801 268 9992

ALS GROUP USA, CORP. Part of the ALS Group An ALS Limited Company

Environmental

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



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ANALYTICAL REPORT

Workorder: 34-1324966

Client Project ID: AL137634

Purchase Order: AL137634

Project Manager: Non-Responsive

Analytical Results

Sample ID: 634-05	Media: Lead Dust Wipe	Collected: 09/04/2013
Lab ID: 1324966005	Sampling Location: Mt Pleasant Utah IFR	Received: 09/06/2013
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 100 cm ²	Prepared: 09/09/2013 Analyzed: 09/10/2013
Analyte	ug/sample	ug/ft ² RL (ug/sample)
Lead	<1.3	<12 1.3

Sample ID: 634-06	Media: Lead Dust Wipe	Collected: 09/04/2013
Lab ID: 1324966006	Sampling Location: Mt Pleasant Utah IFR	Received: 09/06/2013
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 100 cm ²	Prepared: 09/09/2013 Analyzed: 09/10/2013
Analyte	ug/sample	ug/ft ² RL (ug/sample)
Lead	2.1	20 1.3

Sample ID: 634-07	Media: Lead Dust Wipe	Collected: 09/04/2013
Lab ID: 1324966007	Sampling Location: Mt Pleasant Utah IFR	Received: 09/06/2013
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 100 cm ²	Prepared: 09/09/2013 Analyzed: 09/10/2013
Analyte	ug/sample	ug/ft ² RL (ug/sample)
Lead	<1.3	<12 1.3

Sample ID: 634-08	Media: Lead Dust Wipe	Collected: 09/04/2013
Lab ID: 1324966008	Sampling Location: Mt Pleasant Utah IFR	Received: 09/06/2013
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 100 cm ²	Prepared: 09/09/2013 Analyzed: 09/10/2013
Analyte	ug/sample	ug/ft ² RL (ug/sample)
Lead	<1.3	<12 1.3

Sample ID: 634-09	Media: Lead Dust Wipe	Collected: 09/04/2013
Lab ID: 1324966009	Sampling Location: Mt Pleasant Utah IFR	Received: 09/06/2013
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 100 cm ²	Prepared: 09/09/2013 Analyzed: 09/10/2013
Analyte	ug/sample	ug/ft ² RL (ug/sample)
Lead	1.9	18 1.3

Sample ID: 634-10	Media: Lead Dust Wipe	Collected: 09/04/2013
Lab ID: 1324966010	Sampling Location: Mt Pleasant Utah IFR	Received: 09/06/2013
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 100 cm ²	Prepared: 09/09/2013 Analyzed: 09/10/2013
Analyte	ug/sample	ug/ft ² RL (ug/sample)
Lead	<1.3	<12 1.3



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ANALYTICAL REPORT

Workorder: 34-1324966

Client Project ID: AL137634

Purchase Order: AL137634

Project Manager: Non-Responsive

Analytical Results

Sample ID: 634-11	Media: Lead Dust Wipe	Collected: 09/04/2013
Lab ID: 1324966011	Sampling Location: Mt Pleasant Utah IFR	Received: 09/06/2013
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 100 cm ²	Prepared: 09/09/2013
		Analyzed: 09/10/2013
Analyte	ug/sample	ug/ft ² RL (ug/sample)
Lead	<1.3	<12 1.3

Report Authorization

Method	Analyst	Peer Review
NIOSH 7300 Mod.	Non-Responsive	Non-Responsive

Laboratory Contact Information

ALS Environmental
960 W Levoy Drive
Salt Lake City, Utah 84123

Phone: (801) 266-7700
Email:
Web: www.alsslc.com

General Lab Comments

The results provided in this report relate only to the items tested.
Samples were received in acceptable condition unless otherwise noted.
Samples have not been blank corrected unless otherwise noted.
This test report shall not be reproduced, except in full, without written approval of ALS.

ALS provides professional analytical services for all samples submitted. ALS is not in a position to interpret the data and assumes no responsibility for the quality of the samples submitted.

All quality control samples processed with the samples in this report yielded acceptable results unless otherwise noted.

ALS is accredited for specific fields of testing (scopes) in the following testing sectors. The quality system implemented at ALS conforms to accreditation requirements and is applied to all analytical testing performed by ALS. The following table lists testing sector, accreditation body, accreditation number and website. Please contact these accrediting bodies or your ALS project manager for the current scope of accreditation that applies to your analytical testing.

Testing Sector	Accreditation Body (Standard)	Certificate Number	Website
Environmental	ACCLASS (DoD ELAP)	ADE-1420	http://www.aiclasscorp.com
	Utah (NELAC)	DATA1	http://health.utah.gov/lab/labimp/
	Nevada	UT00009	http://ndep.nv.gov/bsdwlabservice.htm
	Oklahoma	UT00009	http://www.deq.state.ok.us/CSDnew/
	Iowa	IA# 376	http://www.iowadnr.gov/InsideDNR/RegulatoryWater.aspx
	Florida (TNI)	E871067	http://www.dep.state.fl.us/labs/bars/sas/qa/
	Texas (TNI)	T104704456-11-1	http://www.tceq.texas.gov/field/qa/lab_accred_certif.html
Industrial Hygiene	AIHA (ISO 17025 & AIHA IHLAP/ELLAP)	101574	http://www.aihaaccreditedlabs.org
Lead Testing:			
CPSC	ACCLASS (ISO 17025, CPSC)	ADE-1420	http://www.aiclasscorp.com
Soil, Dust, Paint, Air	AIHA (ISO 17025, AIHA ELLAP and NLLAP)	101574	http://www.aihaaccreditedlabs.org
Dietary Supplements	ACCLASS (ISO 17025)	ADE-1420	http://www.aiclasscorp.com



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ANALYTICAL REPORT

Workorder: 34-1324966

Client Project ID: AL137634

Purchase Order: AL137634

Project Manager: Non-Responsive

Definitions

LOD = Limit of Detection = MDL = Method Detection Limit, A statistical estimate of method/media/instrument sensitivity.

LOQ = Limit of Quantitation = RL = Reporting Limit, A verified value of method/media/instrument sensitivity.

ND = Not Detected, Testing result not detected above the LOD or LOQ.

** No result could be reported, see sample comments for details.

< This testing result is less than the numerical value.

() This testing result is between the LOD and LOQ and has higher analytical uncertainty than values at or above the LOQ.



1324966

DATA
CHEM
LABORATORIES, INC.

ALS Laboratory Group

ANALYTICAL, CHEMICAL & TESTING SERVICES

Environmental Division

ANALYTICAL REQUEST FORM

1. ☒ REGULAR Status☐ RUSH Status Requested - ADDITIONAL CHARGE

RESULTS REQUIRED BY _____

DATE _____

CONTACT ALS DATACHEM LABS PRIOR TO SENDING SAMPLES

2. Date: 9/6/13 Purchase Order No.: AL137634

4. Quote No. _____

3. Company Name: IHI Environmental

ALS Project Manager: _____

Address: 640 East Wilmington Avenue

5. Sample Collection

Salt Lake City, Utah 84106

Sampling Site: Mt. Pleasant, Utah IFR

Person to Contact: _____

Industrial Process _____

Telephone (801) 466-2 _____

Date of Collection: September 4, 2013

Fax Telephone (801) 4 _____

Time Collected _____

E-mail Address: _____

Date of Shipment: September 6, 20123

Billing Address (if different from above) _____

Chain of Custody No. _____

6. How did you first learn about ALS DataChem? _____

7. REQUEST FOR ANALYSES

Laboratory Use Only	Client Sample Number	Matrix*	Sample Volume	ANALYSES REQUESTED - Use method number if known	Units**
	634-01	Lead Wipe	100 cm ²	Lead	µg/ft ²
	634-02	Lead Wipe	100 cm ²	Lead	µg/ft ²
	634-03	Lead Wipe	100 cm ²	Lead	µg/ft ²
	634-04	Lead Wipe	100 cm ²	Lead	µg/ft ²
	634-05	Lead Wipe	100 cm ²	Lead	µg/ft ²
	634-06	Lead Wipe	100 cm ²	Lead	µg/ft ²
	634-07	Lead Wipe	100 cm ²	Lead	µg/ft ²
	634-08	Lead Wipe	100 cm ²	Lead	µg/ft ²
	634-09	Lead Wipe	100 cm ²	Lead	µg/ft ²
	634-10	Lead Wipe	100 cm ²	Lead	µg/ft ²
	634-11	Lead Wipe	100 cm ²	Lead	µg/ft ²

* Specify: Solid sorbent tube, e.g. Charcoal; Filter type; Impinger solution; Bulk sample; Blood; Urine; Tissue; Soil; Water; Other

** 1. µg/sample 2. mg/m³ 3. ppm 4. % 5. µg/m³ 6. _____ (other) Please indicate one or more units in the column entitled Units**

Comments _____

Possible Contamination and/or Chemical Hazards _____

7. Chain of Custody

Relinquished by _____

Date/Time: September 6, 2013 / 12:30

Received by _____

Date/Time

Relinquished by _____

Date/Time

Received by _____

Date/Time

960 West LeVoy Drive / Salt Lake City, UT 84123

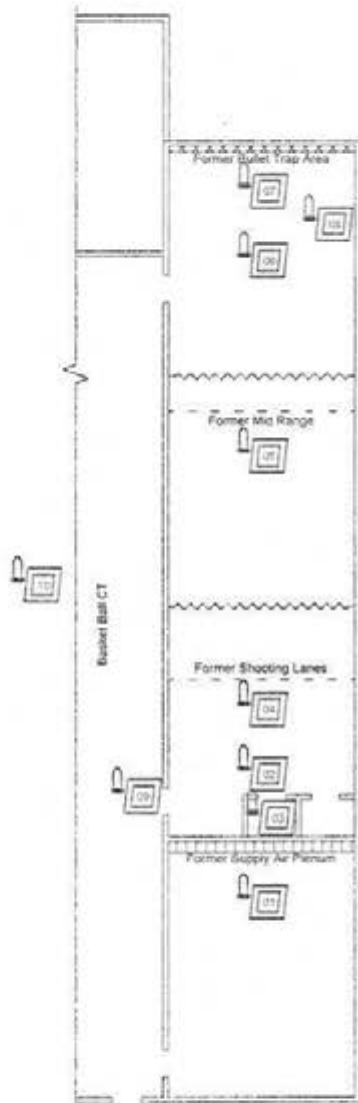
800-356-9135 or 801-266-7700 / FAX: 801-268-9992

ALS DataChem

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APPENDIX D

Drawing: Lead Wipe Sample Locations



Explanation



Lead Wipe Sample Locations & Numbers

Lead Wipe Sample Locations		
Sample Number	Sample Name	Location
01	634-01	Maintenance Bay - Floor
02	634-02	Former Range Entrance - Floor (under carpet)
03	634-03	Former Range Supply Air Plenum - Floor (under carpet)
04	634-04	Former Range Shooting Lanes - Floor (under carpet)
05	634-05	Former Range Mid Range Line - Floor (under carpet)
06	634-06	Former Range Bullet Trap - Floor (under carpet)
07	634-07	Former Range Bullet Trap - Floor (under carpet)
08	634-08	Former Range Bullet Trap - Floor (under carpet)
09	634-09	Entrance to Former Range - Floor
10	634-10	Center of Gym Floor

NOTE: All Wipe Sample Sizes are 100 cm²

Utah Army National Guard
Converted Indoor Firing Range
525 West 1000 South
Mount Pleasant, Utah

Lead Wipe Sample Locations

PROJECT No: AL137634
SHEET NO: 1 of 1
DRAWN BY:
DATE: 09-09-2013
REVIEWED BY: JDM
DATE: 09-09-2013



Photograph 1
Mt. Pleasant, Utah Armory, front, exterior



Photograph 2
Mt. Pleasant, Utah Armory, side showing former indoor firing range, exterior



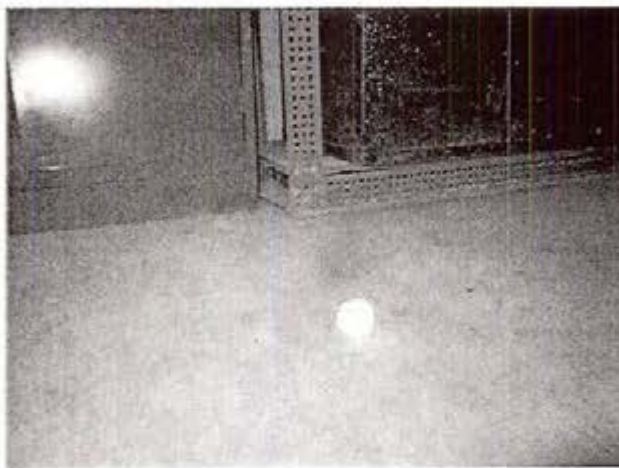
Photograph 3
Mt. Pleasant, Utah Armory, rear view, exterior



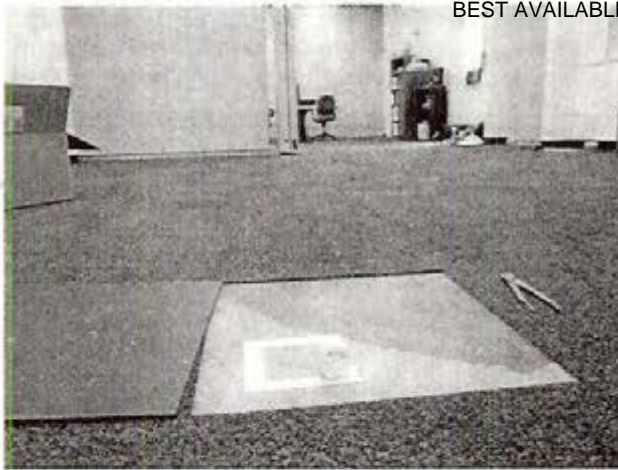
Photograph 4
Drill hall floor with doors leading to former indoor firing range



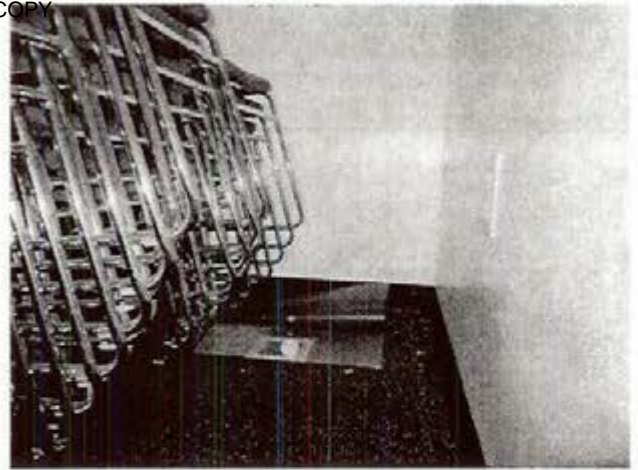
Photograph 5
Interior office space within former indoor firing range



Photograph 6
Sample location 634-01 in Maintenance Shop behind former air plenum



Photograph 7
Sample location 634-02, inside former range entrance (under carpet)



Photograph 8
Sample location 634-03, in front of former air plenum (under carpet)



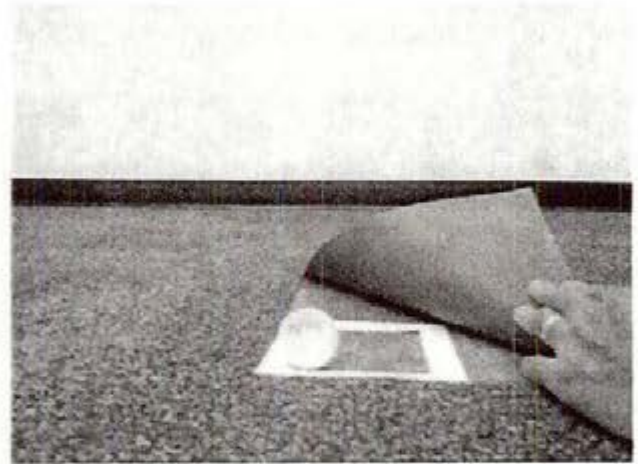
Photograph 9
Sample location 634-04, former shooting line (under carpet)



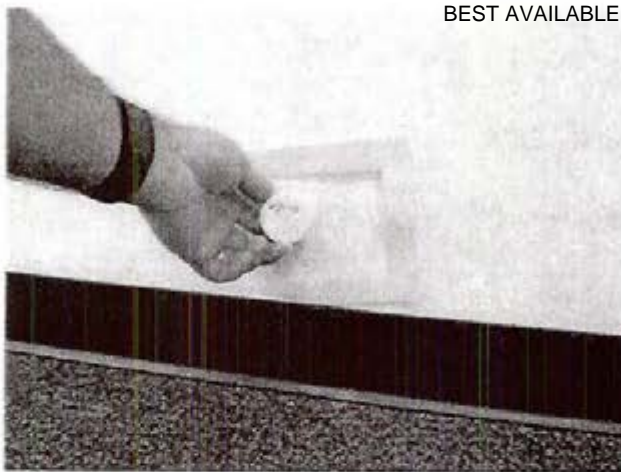
Photograph 10
Sample location 634-05, former midrange line (under carpet)



Photograph 11
Sample location 634-06, in front of former bullet trap area (under carpet)



Photograph 12
Sample location 634-07, behind former bullet trap area (under carpet)



Photograph 13
Sample location 634-08, former bullet trap area
(wall – drywall surface)



Photograph 14
Sample location 634-09, entrance to former
indoor firing range (painted concrete)



Photograph 15
Sample location 634-10, center of drill hall floor

APPENDIX F

Field Notes (Facility Background Info Worksheet)

FACILITY INFORMATION

(Information listed in First Section)

1. Date Prepared: September 4, 2013
2. Names (and Company Name) of Personnel Conducting Industrial Hygiene Site Assistance Visit: **Non-Responsive** HI Environmental
3. Facility Name and Brief Summary of Primary Activities Conducted at Facility: Utah Army National Guard – Mt. Pleasant, Utah Armory – Former Indoor Firing Range
4. Facility Address: 525 West 1000 South Mt. Pleasant, Utah 84647
5. Primary Unit Assigned to Facility (Ensure to capture and provide Unit Identification Code (UIC)): Det 1 116th ENCO (HOR) UIC: 1
6. Co-Tenant Units Assigned or Working Within Facility (LIST ALL): None
7. Square Ft. Area of Facility: ~14,250 ft²
8. Work Schedule: Mon-Thurs 0700-1730 hours
9. Number of work bays: One
10. Equipment Density and Type: No vehicle maintenance performed at the Armory
 - a. List Equipment Nomenclature Serviced or Maintained at Facility: None
 - b. List Total Number for Each Nomenclature Serviced or Maintained at Facility: None
11. Total Number of Personnel: 2 full-time + Recruiter
12. No. of Admin. Personnel (Include Status – AGR, Fed. Tech., IDT, State or Contract Employee): 2 AGR
13. No. of Maintenance Personnel (Include Status – AGR, Fed. Tech., IDT, State or Contract Employee): 1 State Maintenance (Part-Time)
14. Total Number of Personnel Enrolled in the Hearing Conservation Program: 2
15. Total Number of Personnel Enrolled in the Respiratory Protection Program: 0
16. Total Number of Personnel Enrolled in the Medical Surveillance Program: 0

17. Total Number of Personnel Enrolled in the Vision Program: 0

18. Facility Commander **Non-Responsive**

a. Email address, Commercial Telephone Number and Unit Assigned to:

Non-Responsive

19. Safety Officer: **Non-Responsive**

a. Email Address, Commercial Telephone Number and Unit Assigned to:

Non-Responsive Draper UTARNG Headquarters, Draper, UT

20. Facility Telephone Number: (435) 462-2515

APPENDIX G
Lead Clean-up SOP

Lead

CLEANUP & FOLLOW-UP HOUSEKEEPING
RECOMMENDATIONS

Materials Needed:

1. Cloth Mop head (s) & Mop head holder(s) with handle.
2. Mop bucket (s) with wringer.
3. Clean cotton rags and sponges.
4. Disposable gloves
5. Large barrel (55 gal.) to store wastewater in after changing out of dirty scrub water.
6. Disposable overshoes or rubber boots. Personnel conducting cleaning operations should not take clothes, boots, etc., home for laundering.
7. HEPA vacuum
8. Six (6) mill plastic bags to dispose of waste.
9. Waste water containers.

Disposal of Waste Water and Cleaning Materials:

1. *NOTE:* Consult with Local Army National Guard Environmental Office prior to taking any collection, disposal or wiping activities commence. Each state and territory may have additional regulatory guidance on collection, storage and disposal of wastewater.
2. Mop heads should be disposed of after initial cleanup, unless otherwise advised by Environmental office personnel. Note: thorough cleaning of mop heads may be sufficient enough to reuse on future Armory cleanups but check with local Environmental Office.
3. Disposable gloves should be treated as hazardous waste.
4. Soiled cotton rags should be treated as hazardous waste.
5. Wash water contaminated with Lead can be collected and allowed to slowly evaporate leaving Lead deposits/sludge that may be collected in plastic containers, placed in metal drums, and stored for future delivery to an authorized hazardous waste disposal site.

- a. Drums shall be properly labeled to identify contents In-Accordance With (IAW) Federal, State and local regulatory guidance.
- b. Disposal of containerized waste shall be coordinated IAW State hazardous waste program requirements.
- c. The Environmental Office shall coordinate removal and disposal of all containerized hazardous waste through established waste streams.

Post-Cleanup Precautionary Measures:

1. Thoroughly wash hands with soap and water.
2. Rinse off rubber boots with soap and water, capturing wastewater for collection into established waste stream. If personnel choose to use over shoes for protection, dispose of overshoes into waste stream. NOTE: This recommendation is for initial clean up activities and PPE requirements may be reduced after it has been determined non-hazardous levels have been achieved.
3. Wash BDU's or personal clothing separately from children's clothes.

NOTE: No eating, drinking or cosmetics allowed during cleanup procedures (these may be allowed after washing of hands/face and done outside of cleanup area)

NOTE: Avoid blowing, shaking or like actions which could potentially disperses lead dust. Dry sweeping, dusting, wiping or blowing with compressed air shall not be permitted

Initial Cleanup:

1. Use a vacuum cleaner equipped with a HEPA exhaust filter. HEPA vacuum all surfaces in the room (ceiling, walls trim, and floors). Start with the ceiling and work down, moving toward the entry door. Completely clean each room before moving on.
2. Prepare water and detergent for the wipe down phase, according to manufactures recommendations.

3. Wet wipe, with cotton rags or sponge, any horizontal, diagonal or vertical surfaces up six (6) feet from floor surfaces using hot water and "Spic-n-Span" or an equivalent product.
 - a. Rinse out cleaning cloths thoroughly and frequently.
 - b. Change out cleaning water as necessary.

NOTE: If walls to be cleaned show signs of deterioration, e.g., chipping or crumbling paint, in which wiping, scrubbing, or disrupting might potentially increase or spread contamination, then this portion of the clean up should be avoided.

4. Now prepare water and detergent (e.g. Spic N Span, Mr. Clean, Pine Sol) for the mopping phase, according to manufactures recommendations, which should be found on the products label for general clean up.
 - a. Change out water frequently (when water appears dirty)
 - b. Rinse out mop heads frequently to prevent contamination of dirty water.
5. Cover entire drill floor surface with above prescribed water and detergent.
6. Final rinse should be with clean water only - -after mop heads have been cleaned.

Recommended Follow-up Housekeeping Practices *after Clearance sampling of cleaned area is performed by certified personnel:*

1. Floor cleaning and dusting should be accomplished using the wet method described in Initial Armory Cleanup SOP.

Note: Only exception to these wet cleaning procedures would be the use of a chemically treated dust floor mop. This can be used for follow-up armory cleaning by sweeping of large particles of dirt and paper.

- a. Pre-treated (chemically treated) dust floor mop will limit dust particles from being disbursed into the surround atmosphere.

- b. If treated dust mop is used - -Do Not Shake Mop head - - have mop head laundered after use. Always keep used dust mop heads in sealed double plastic bags when stored at armory/facility. Shaking of mop head could release unwanted contaminants into surrounding atmosphere.
2. Frequency of Cleanup- Armories will vary, according to usage and how often they should be cleaned. The following general cleaning schedule is provided:
- a. Only full-time technicians and traditional soldiers using facility during the month. (*Cleaned Monthly*)
 - b. Occasional activities taking place during the month, e.g., 1-2 classes or volleyball games, etc. (*Cleaned 2x's Monthly*)
 - c. Used regularly by soldiers or outside agencies/personnel. (*Cleaned Regularly - -at least Weekly*)

NOTE: Armories with adjoining Indoor Firing Ranges (IFR) should be cleaned more than weekly, again depending on use of Armory and IFR.

NOTE: Clearance sampling/testing is to be accomplished by certified personnel after these cleanup procedures are followed. If the area is an average Armory, occupied by adults only, for which you are cleaning and is **not a Converted IFR** space, you may continue to utilize the Armory space before the officials re-test this space. Please notify your Safety and/or Occupational Health personnel of the completion of this cleaning regime and they will notify the proper officials of the sampling/testing requirements needed.

If work is contracted out, a third party should do the clearance sampling.

Young children and females who are pregnant, there should be posted signs on all facilities, warning of the potential danger of exposure to lead dust.

SOP FOR ARMORY CLEANUP

1. General.

1.1 Objective.

1.1.1. The purpose of this SOP (Standard Operating Procedure) is once a lead dust hazard has been identified and excess exists, how to lower the level of lead dust to afford a safe building, which is clean enough for all personnel exposed to this potential hazard.

1.2 Description of An Armory.

1.2.1 Armories provide a space for units to support and train soldiers.

1.2.2 The facility is utilized by Army National Guard (ARNG) family members, usually in a recreational or festive setting. This may include all members and all ages of a given family.

1.2.3 The Armory can be used for community activities, which may include all age levels.

1.3 Responsibilities.

1.3.1 It is the ARNG specialty branches, e.g., Industrial Hygiene (IH), Occupational Health & Safety's, responsibility to notify occupants of any known health risk within their facility.

1.3.2 It is the building managers responsibility to warn any users of this facility about potential hazards by, e.g., verbal, written or warning signs.

1.3.3 The ultimate responsibility falls back on the TAG of each state.

2. Background.

2.1 IH Investigation.

2.1.1 The IH community found unexpectedly high levels of lead dust during a normal IH investigation (survey) in an armory that had an Indoor Firing Range (IFR) within it. Wipe samples were taken in another armory without an IFR, only to find that this armory had higher than expected levels of lead dust, also.

2.1.2 Each ARNG Regional Industrial Hygienist has planned to survey all their armories spearheaded by the Midwest regional office, to determine the magnitude of these findings.

2.1.3 About 2/3rds of the armories tested so far, did not have "a clean bill of health". Now the IH community will attempt to discern where the contamination is coming from and also, give guidance on how to deal with these contaminant.

2.1.4 Air sampling of the armories tested have shown very low levels of lead dust in the breathing area. Dust wipe samples have varied in quantities present but have exceeded the EPA's floor standard and the ARNG IFR guidelines.

3. Relevant Standards and Guidelines.

3.1 Airborne Lead.

3.1.1 The Occupational Safety and Health Administrations (OSHA) Permissible Exposure Level (PEL) for airborne lead is **50 micrograms per cubic meter (ug/m3)**, averaged over an 8-hour work shift. The OSHA action level is 30 ug/m3.

3.2 Blood Lead Level (BLL).

3.2.1 OSHA requires that personnel who are exposed to airborne lead above the PEL be offered medical surveillance that includes blood lead level monitoring. Personnel with total **BLL above 50 micrograms per deciliter (ug/dl)** of blood are required to be removed from occupational lead exposures until the BLL drops back to 40.

3.2.2 Women who may become pregnant who are exposed to lead should consult with their physician. Fetal and newborn BLLs are similar to those of

the mother. The Center for Disease Control and Prevention considers levels above 10 ug/dl in children under 6 to be elevated BLLs.

3.3 Lead in Surface Dust.

3.3.1 There are no established standards for lead levels in dust within buildings other than those used by children under 6. The Environmental Protection Agency (EPA) along with Housing and Urban Development (HUD) floor dust lead level standard (which is currently 40 ug/ft²) does not apply to workplace surfaces, and would be impossible to maintain in many industrial facilities. (EPA 40 CFR Part 745)

3.3.1.1 The EPA interior windowsill standard is 250 ug/ft².

3.3.1.2 The EPA standard for window trough is 400 ug/ft².

3.3.2 OSHA cites a level of 200 ug/ft² as guidance to its own inspectors for evaluating the cleanliness of lunchroom and locker room surfaces that are supposed to be kept as clean as possible.

3.4 Lead in Paint.

3.4.1 EPA's standard for lead-based paint or other surface coatings that contain lead equal to or exceeding 1.0 milligram per square centimeter (mg/cm²) or 0.5 percent (%) by weight or 5000 parts per million (ppm) by weight.

4. Indoor Firing Ranges (IFR).

4.1 Relevant Standards and Guidelines.

4.1.1 OSHA guidelines stated above (see 3.3.2) are the recommended working levels to achieve in an active IFR.

4.1.2 NGR 385-10 guideline reflects that of OSHA at 200 ug/ft² for lead dust on surfaces.

4.2 Maintenance and Cleaning.

4.2.1 Follow NGR 385-10, along with SOP found in All States Letter (Log Number P00-0059 along with All States Letter (Log Number P01-0075)

addressing Policy and Responsibilities for Inspection, Evaluation and Operation of ARNG Indoor Firing Ranges. Also, utilize AR 385-63 Range Safety.

4.2.2 Cross contamination is a concern where Armories and IFR's are co-located. Keeping an IFR dust level at 200 ug/ft² does not meet the 40 ug/ft² required on floor surfaces for children 6 and under. Tracking lead dust to other parts of the armory is a concern and should be addressed by the facilities manager and the range custodian.

5. Converted/Closed Indoor Firing Ranges.

5.1 Closed IFR.

5.1.1 Closed IFR's should be not utilized for anything, e.g. storage, office space or anything else. This should be a voided space with no entry. The IFR should have been cleaned to at least 200 ug/ft² before closure to prevent contamination via air stream or other means.

5.1.2 Should be locked and signage placed on entryway to warn personnel of lead contents.

5.2 Converted IFR-- NG PAM 385-16 "Guidelines for converting of IFR."

5.2.1 These spaces should have been cleaned and taken to lowest possible level, e.g. 0-40 ug/ft², and then the proper sealant applied, retested via wipe samples. The results should be below the pre-sealant sample results and as close to zero as possible.

5.2.2 The backstop and ventilation system should have been removed prior to cleaning of the range.

5.2.3 If all of this wasn't accomplished initially and you have high lead levels after this Baseline survey, or if it was accomplished, you need to talk to the original contractor who was responsible for the cleanup or get the area re-cleaned by a different contractor. Converted IFR's have to meet certain criteria before they can be changed into something that will be utilized for an office, storage, or something else where contamination to an individual may occur.

clothing should be washed separately from their families, if they have young children at home. Personnel should wash their hands after performing this operation to assure lead contaminants are not ingested.

6.2.1.2 Frequent changing out of the water used is vital. Disposal of this hazardous waste water and rags/mop heads, Personal Protective Equipment (PPE), etc., should be coordinated with your Environmental office.

6.2.2 Clean all ductwork where lead was found. EPA has a protocol specifically for replacing or cleaning lead in dust form in HVAC systems. EPA Office of Pollution Prevention and Toxics, "*Reducing Lead Hazards When Remodeling Your Home*" www.epa.gov/opptintr/lead/rpamph.pdf.

6.2.3 Continue to enforce good housekeeping and hygiene practices. These measures make good sense to minimize exposures to any toxic chemicals in the workplace.

6.2.4 Provide lead awareness training to the general workforce and any occupants of your facility.

NOTE: Before you start any new procedures or practices be aware of the local city and state regulations in your area.

Oct 7, 2014



**ARMY NATIONAL GUARD
INDUSTRIAL HYGIENE - SOUTHWEST**

Guam • Hawaii • California • Oregon • Washington • Nevada • Arizona • Idaho • Utah • Wyoming • Montana • New Mexico • Nebraska

**Industrial Hygiene Site
Assistance Visit**

**North Salt Lake City
Readiness Center**

**1624 North 2200 West
Salt Lake City, UT 84116**

10510 Superfortress Avenue, Suite C, Mather, CA 95655

(916) 854-1494



BEST AVAILABLE COPY
DEPARTMENT OF THE ARMY AND AIRFORCE
NATIONAL GUARD BUREAU
INDUSTRIAL HYGIENE SOUTHWEST
10510 Superfortress Ave, Ste. C
Mather, CA 95655

ARNG-CSG-P

17 SEP 2015

MEMORANDUM THRU Utah Army National Guard, ATTN: **Non-Responsive** (OHN), 12953 S. Minuteman Dr. Draper, UT 84020

FOR Commander, HHC - 142nd MI, North Salt Lake City Readiness Center, 1624 North 2200 West, Salt Lake City, UT 84116

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for North Salt Lake City Readiness Center, 1624 North 2200 West, Salt Lake City, UT 84116, on 07 OCT 2014

1. References. See survey report.

2. General.

a. At the request of the NGB Industrial Hygiene, Southwest (IHSW) Region, an Industrial Hygiene Site Assistance Visit and cursory review of safety related items and programs was conducted at the North Salt Lake City Readiness Center 1624 North 2200 West, Salt Lake City, UT on 07 OCT 2014.

b. The findings and recommendations in this Executive Summary are controlling and supersede all recommendations in the Industrial Hygienist report (reference Attachment II). However, IHSW concurs with the observations and findings within the attached Industrial Hygiene report.

c. Risk Assessment Codes (RAC) provided in this report have been derived from two sources: Deriving Risk Assessment Codes (RAC's) for Health Hazards (Ref: DOD Instruction 6055.1) and AR 385-10, The Army Safety Program.

d. Use of trademark names in the attached report, or this Executive Summary, does not imply Army National Guard endorsement of any product.

e. Co-Tenant occupants for this facility include 118th EN CO, 85th WMD-CST, and a small contingency of CSMS personnel who maintain the 85th WMD-CST Vehicles/Equipment.

3. Findings. See survey report.

4. Commendable.

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for North Salt Lake City Readiness Center, 1624 North 2200 West, Salt Lake City, UT 84116, on 07 OCT 2014

a. The facility was generally clean and orderly. The UT ARNG Personnel were extremely helpful during this IHSAV.

5. Observations / Recommendations.

NOTE: This section provides conclusions and recommendations for the findings and observations made within the attached contractors report. The paragraphs are numbered to correspond to the sections where they were first noted. (i.e., paragraph 2.1a represents the 2.1a located within the contractors report.

a. Lead surface wipe samples were collected throughout various areas of the facility. All results returned indicate lead levels are shown to be below the 40 ug/ft² as established by the ARNG. (RAC 4)

(1) Recommend facility staff continue the good housekeeping practices within the administrative offices, kitchen, and communal areas to maintain lead particulate concentrations below the ARNG standard of 40ug/ft². Utilize the enclosed Clean-up SOP as a guide to assist with the prevention efforts. Ensure personnel clean-up area(s) and tables after weapons cleaning activities. Tables used for weapons cleaning should be marked, "For Weapons Cleaning Only," when utilized as such. (Reference DODI 6055.01 Appendix to Enclosure 4, date 14 OCT 2014)

(2) The lead surface concentrations returned do suggest the potential for an ingestion hazard remains. Occupants need to take necessary actions, i.e. good hygiene practices like washing prior to eating, drinking, smoking & chewing tobacco etc., be provided the necessary education to ensure their continued health.

(3) Occupant Notifications. It is important for the State ARNG make appropriate notifications to all occupants outlining the potential hazards, measures persons must take to ensure their health, and to outline the State ARNG's plan to remediate (abate) the elevated lead levels within the facility as required by Federal, State, and local laws, regulations, and requirements. At the minimum, the following occupancy groups should be included within the notifications: AGR, IDT personnel, state employees, contract employees, youth program personnel, and all civilians. Note, the attached report may provide co-tenant organizations for inclusion of notifications. Documentation of notifications should be maintained by the facility command for future reference. (reference 29 CFR 1910.1025 as a resource guide)

6. Violation Correction Log.

a. IHSW has provided a Violation Correction Log derived from the observations from this visit. IHSW recommends the following:

(1) Commander(s) assign an Action OIC/NCOIC, Suspense Date for completion, and Estimated Cost(s) to ensure item completion and corrective status is briefed during quarterly (or monthly) Safety Meetings/Councils until resolved.

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHS AV) for North Salt Lake City Readiness Center, 1624 North 2200 West, Salt Lake City, UT 84116, on 07 OCT 2014

(2) Corrective measures should be implemented and accomplished at the lowest levels possible. Hazards and Corrective Measures that cannot be corrected at the facility level, and require assistance from higher headquarters or from the state level, should be elevated to the Quarterly State/BN Safety Council Meeting for resolution.

(3) Recommend a representative from the facility attend all quarterly/monthly meetings to ensure the appropriate emphasis and corrective actions are followed for hazard resolution and abatement of the observations made during this visit.

(4) Retain entries of the items corrected, or closed, for future reference. This may be accomplished by posting completed items within the Corrected Hazard Sheet portion of the Excel Violation Correction Log Workbook we've provided.

(5) The preferred method to document and track identified hazards for resolution is for their entry into the Reserve Component Automation System – Safety and Occupational Health (RCAS-SOH) Program.

7. Hazard Assessment (HA)/Job Safety Analysis (JSA).

a. IHSW recommends further program refinement through written documentation for standardized guidance to the personnel performing the processes. Conducting Hazard Assessments consistent with 29 Code of Federal Regulations (CFR) 1910.132, General Requirements for Personal Protective Equipment and AR 40-5, Preventive Medicine, would provide this continued program refinement.

b. Documenting the Hazard Assessments provides a method to obtain initial and periodic review from the Industrial Hygiene, Occupational Health and Safety Professions located at the JFHQ/HQ/state level.

c. The Hazard Assessments should be used as written training materials for the new, transfer and unit personnel working under the auspice of the facility.

d. IHSW recommends facility supervisory staff and facility personnel conduct initial Hazard Assessments outlined in AR 40-5, Army Preventive Medicine (Section V) and 29 CFR 1910.132 and submit for review and obtain approval from the state Industrial Hygiene, Occupational Health and Safety Professions.

e. We have not provided an appendix with Hazard Assessments (HA) examples of some of this facilities operations. Additional operations can utilize this format to design HA not observed during this IHS AV.

f. An integral and important factor of the Hazard Assessment/JSA process is for the review and guidance from qualified Safety, Occupational Health and Industrial Hygiene professions located at the higher headquarters level or state level. For this reason, the Hazard Assessments (to include all pertinent and supporting documents) should be completed by the facility

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHS AV) for North Salt Lake City Readiness Center, 1624 North 2200 West, Salt Lake City, UT 84116, on 07 OCT 2014

personnel and forward to the State Army National Guard Industrial Hygiene, Occupational Health and Safety Office for final review and approval (signature).

NOTE: The Hazard Assessments can be used for monthly meetings to brief/train, and document large group training events and activities.

8. IHSW recommends the Senior Unit Commander of this Facility and any Co-Tenant Organizations or Units, review and provide assistance with implementation of these recommendations. This will educate the chain of command and allow the unit or co-tenant organizations to take any necessary precautions or actions required by them and their personnel.

9. To assist you with execution of your responsibilities in correcting the observations noted, we encourage you to consult with the State Safety Manager, Occupational Health Manager and Industrial Hygiene professions located and/or authorized within the State Safety and Occupational Health Office.

10. For additional information please contact the NGB-IHSW office at (916) 854-1491 or via email at **Non-Responsive**



NGB, IHSW, CIV
Regional Industrial
Hygiene Manager



Industrial Hygiene Southwest
Violation Inventory Log
LOG OF SCHEDULE OF CORRECTIVE ACTION - COMPLIANCE WITH SAFETY AND HEALTH STANDARDS
North Salt Lake City Readiness Center

CONTROL NUMBER	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/NCIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
UTRC-100714-Exec. Summary <input type="checkbox"/> CLOSED	Lead particulate coming from weapons being cleaned	Drill Hall	4	Thoroughly clean areas identified, e.g. assembly hall, for cleaning weapons during this SAV. Utilize Army Clean-up SOP during cleaning episodes. Clean dining & classroom areas after every episode of cleaning weapons to help prevent migration of heavy metals.					General Duty Clause 5(a)(1) DODI 6055.01 Appendix to Enclosure 4, date 14 OCT 2014

ARMORY

CLEANUP & FOLLOW-UP HOUSEKEEPING RECOMMENDATIONS

Materials Needed:

1. Cloth Mop head (s) & Mop head holder(s) with handle.
2. Mop bucket (s) with wringer.
3. Clean cotton rags and sponges.
4. Disposable gloves
5. Large barrel (55 gal.) to store wastewater in after changing out of dirty scrub water. Waste water containers.
6. Disposable overshoes or rubber boots. Personnel conducting cleaning operations should not take clothes, boots, etc., home for laundering.
7. HEPA vacuum
8. Six (6) mill plastic bags to dispose of waste.
9. Detergent with surfactant, e.g., Spic-N-Span, Mr. Clean, etc.

Disposal of Waste Water and Cleaning Materials:

1. *NOTE:* Consult with Local Army National Guard Environmental Office prior to taking any collection, disposal or wiping activities commence. Each state and territory may have additional regulatory guidance on collection, storage and disposal of wastewater.
2. Mop heads should be disposed of after initial cleanup, unless otherwise advised by Environmental office personnel. Note: thorough cleaning of mop heads may be sufficient enough to reuse on future Armory cleanups but check with local Environmental Office.
3. Disposable gloves should be treated as hazardous waste.
4. Soiled cotton rags should be treated as hazardous waste.
5. Wash water contaminated with Lead can be collected and allowed to slowly evaporate leaving Lead deposits/sludge that may be collected in plastic containers, placed in metal drums, and stored for future delivery to an authorized hazardous waste disposal site.

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Post-Cleanup Precautionary Measures:

1. Thoroughly wash hands with soap and water.
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3. Wash BDU's or personal clothing separately from children's clothes.

NOTE: No eating, drinking or cosmetics allowed during cleanup procedures (these may be allowed after washing of hands/face and done outside of cleanup area)

NOTE: Avoid blowing, shaking or like actions which could potentially disperses lead dust. Dry sweeping, dusting, wiping or blowing with compressed air shall not be permitted

Initial Armory Cleanup:

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2. Prepare water and detergent for the wipe down phase, according to manufactures recommendations.

3. Wet wipe, with cotton rags or sponge, any horizontal, diagonal or vertical surfaces up six (6) feet from floor surfaces using hot water and "Spic-n-Span" or an equivalent product.
 - a. Rinse out cleaning cloths thoroughly and frequently.
 - b. Change out cleaning water as necessary.

NOTE: If walls to be cleaned show signs of deterioration, e.g., chipping or crumbling paint, in which wiping, scrubbing, or disrupting might potentially increase or spread contamination, then this portion of the clean up should be avoided.

4. Now prepare water and detergent (e.g. Spic N Span, Mr. Clean, Pine Sol) for the mopping phase, according to manufactures recommendations, which should be found on the products label for general clean up.
 - a. Change out water frequently (when water appears dirty)
 - b. Rinse out mop heads frequently to prevent contamination of dirty water.
5. Cover entire drill floor surface with above prescribed water and detergent.
6. Final rinse should be with clean water only - -after mop heads have been cleaned.

Recommended Follow-up Housekeeping Practices *after Clearance sampling of cleaned area is performed by certified personnel:*

1. Floor cleaning and dusting should be accomplished using the wet method described in Initial Armory Cleanup SOP.

Note: Only exception to these wet cleaning procedures would be the use of a chemically treated dust floor mop. This can be used for follow-up armory cleaning by sweeping of large particles of dirt and paper.

- a. Pre-treated (chemically treated) dust floor mop will limit dust particles from being disbursed into the surround atmosphere.

- b. If treated dust mop is used - -Do Not Shake Mop head - - have mop head laundered after use. **Always keep used dust mop heads in sealed double plastic bags when stored at armory/facility.** Shaking of mop head could release unwanted contaminants into surrounding atmosphere.
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If work is contracted out, a third party should do the clearance sampling.

Young children and females who are pregnant, there should be posted signs on all facilities, warning of the potential danger of exposure to lead dust.

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EXECUTIVE SUMMARY

An Industrial Hygiene (IH) Site Assistance Visit (IHSAV) was conducted By **Non-Responsive** PE, CIH of Tammer Sciences, Inc. on October 7, 2014² at the North Salt Lake City Readiness Center located at 1624 North 2200 West North Salt Lake City, UT 84116. The primary point of contact for information gathered during this survey was **Non-Responsive** phone 801-715-3762, e-mail **Non-Responsive**

The IH Assistance Visit was conducted as part of the UTARNG occupational safety and health program and its objectives were to:

- Conduct a safety walkthrough of the Readiness Center;
- Identify sources of noise within the facility;
- Collect lead surface wipe samples;
- Evaluate and follow-up on any Indoor Air Quality (IAQ) issues;
- Perform air monitoring, if necessary;
- Measure the volumetric flow of local exhaust ventilation systems;
- Evaluate the presence of asbestos in the facility;
- Measure illumination levels in all accessible areas of the facility;
- Review hazardous material storage and use procedures.

Significant findings for this IH Assistance Visit can be found in the Industrial Hygiene Southwest – Violation Inventory Log located in Appendix I of this report.

The report that follows this Executive Summary should be read in its entirety because it includes important information not included in this summary, such as task descriptions, workspace locations, regulatory requirements, and additional recommendations.

Personnel were cooperative and provided all requested information understanding of the nature of the assistance visit.



1.0 INTRODUCTION

An Industrial Hygiene (IH) Site Assistance Visit (IHSAV) was conducted **Non-Responsive** PE, CIH of Tammer Sciences, Inc. on October 7, 2014² at the North Salt Lake City Readiness Center located at 1624 North 2200 West North Salt Lake City, UT 84116. The primary point of contact for information gathered during this survey was **Non-Responsive** phone 801-715-3762, e-mail **Non-Responsive**

1.1 Objectives

The visit objectives were to evaluate the occupational environment of the Readiness Center to determine the presence of operational health and safety risks and make recommendations for corrective actions or follow-up work to manage those risks. The assistant visit was conducted in the interest of preventing employee illness and in meeting legal obligation where applicable.

1.2 Scope of Work

To achieve the above objectives at this facility, the survey included the following work:

- Conduct a safety walkthrough of the Readiness Center;
- Identify sources of noise within the facility;
- Collect lead surface wipe samples;
- Evaluate and follow-up on any Indoor Air Quality (IAQ) issues;
- Perform air monitoring, if necessary;
- Measure the volumetric flow of local exhaust ventilation systems;
- Evaluate the presence of asbestos in the facility;
- Measure illumination levels in all accessible areas of the facility;
- Review hazardous material storage and use procedures.



2.0 PROCESS DESCRIPTION

In addition to the administrative tasks performed, training and weekend drills are carried out in the Readiness Center. Weapons cleaning are typically performed in the assembly hall area. On occasions, civilian functions are performed in the Readiness Center and include meetings, scouts parties, and holiday parties. The potential for exposures to noise and airborne contaminants are very minimal due to the nature of the typical activities and tasks performed at the Readiness Center. However, the potential for exposure to lead dust from weapons cleaning and the presence of an indoor firing range do exist. The North Salt Lake City Readiness Center does not have an indoor firing range. Other occupational health and safety concerns that may exist in a Readiness Center include indoor air quality, asbestos containing building materials, storage of hazardous materials, ergonomics, and lighting.

The North Salt Lake City Readiness Center, which was built in 2010, is a two story structure and houses three units; 142nd MI HHC, 118th EN CO, and 85th WMD-CST Command and Operation. The facility consists of a main assembly hall, administrative offices, supply room, arms vault, classrooms, Vehicle storage bays, fitness room, latrines, break room and a kitchen. A Copy of the floor layout is included in Appendix E.

Two maintenance bays are occupied by maintenance personnel from the CSMS. These bays are used to maintain Sabre and CST vehicles. Maintenance activities performed by CSMS personnel include engine checks, fluid changes, brakes inspection, and other routine activities. Thirty five full time employee work at this Armory/Readiness Center in addition to two civilian employees. The facility is located in an industrial area north of the Salt Lake City airport.



3.0 METHODS

3.8 Quality Assurance

Tammer Sciences, Inc. employs, at a minimum, the following methods to help assure quality of field investigations and reports:

- Use of appropriately educated and experienced personnel;
- Documentation of pertinent field and sampling information;
- Continuing education of technical personnel through attendance at training sessions and conferences, and literature review;
- Maintains certification and professional licenses;
- Strict adherence to method requirements, in particular to NIOSH, OSHA, and ANSI standard methods, including strict chain-of-custody protocol;
- Use of accredited laboratories, or, in cases where specific accreditation is not available, choice of laboratories of good reputation, having strong QA/QC programs.
- Calibration of instruments, including field calibration via manufacturers' recommended procedures and routine (typically annual) off-site calibration of equipment via certified third parties.



4.0 OBSERVATIONS AND RECOMMENDATIONS

During the assistant visit the following areas and/or operations were reviewed in accordance to the Industrial Hygiene South West (IHSW) Statement of Work (SOW).

4.1 Lead Surface Wipe Sampling

Lead Surface wipe samples were collected from various horizontal surfaces in select areas of the Armory to include: The drill hall, the break room, administrative offices, classrooms/conference rooms, and the kitchen. The sample location and results are summarized in the table below.

Table 4.1 Lead Surface Wipe Samples Utah Army National Guard North Salt Lake City Readiness Center/Armory Salt Lake City, UT October 7, 2014		
Sample Number	Sample Location	Micrograms of lead (ug) per square foot
NSLCW01	Floor in assembly hall northwest quadrant	6.2
NSLCW02	Floor in assembly hall northeast quadrant	6.5
NSLCW03	Floor in assembly hall southeast quadrant	7.5
NSLCW04	Floor in assembly hall southwest quadrant	12
NSLCW05	Floor in assembly hall center	11
NSLCW06	Top of fire extinguisher case in assembly hall	5.2
NSLCW07	Top of the service line in the kitchen	19
NSLCW08	Top of refrigerator in break room	<1.3
NSLCW09	Top of window sill in classroom	1.3
NSLCW10	Field Blank	<1.3



The office of Industrial Hygiene Southwest located in Mather, California, has developed a Standard Operating Procedure (SOP) for lead, which is a blend of OSHA, HUD, and Army regulations. This SOP sets forth a criterion of 40 micrograms per square foot ($\mu\text{g}/\text{ft}^2$) for converted indoor firing ranges, break rooms, floor surfaces, or any area that the public might possibly use for non-military functions. Additionally, a $200\text{-}\mu\text{g}/\text{ft}^2$ criterion has been established for tool rooms, maintenance bays, furnace rooms, boiler rooms, storage closets, and other areas where the general public is not normally expected to access.

Analytical results for lead indicate all sampling locations were below the SOP's contamination criterion for lead. The laboratory reports and chain of custody forms are included in Appendix G.

Recommendation

None.

4.2 Area Noise Level Surveys

No major noise sources were identified in the facility. Sound-level measurements were all below the Army criterion limit and OSHA action level of 85 dBA. Noise levels in the kitchen with the stove canopy exhaust on ranged from 73 to 75 dBA. Noise levels around the ice machine and refrigerator were less than 80 dBA.

Recommendation:

None.

4.3 Illumination

Illumination levels were measured throughout the facility in accessible areas. Table 4.3 below lists some of the measurements collected in various areas of the facility. A detailed listing is included on a copy of the floor layout in Appendix E. In general, the measurements were taken at task surface level, such as on desks or work benches at the high setting. Measurements not taken on a desk or workbench were taken at waist level. The illumination measurements were compared with recommendations made by the Industrial Engineering Society (IES)/American National Standards Institute (ANSI) RP7-



1991 and 41 CFR 101-20-107, Energy Conservation Rule, Federal Property Management Regulations. In general, 50 FC is the minimum lighting requirements for the performance of tasks where reading is required, 30 FC is required for work areas where reading is not required, 10 FC is required for non-work areas, such as aisles and corridors, and 5 FC is required for walking surfaces, such as mechanical spaces.

<p>Table 4.3 Lighting Survey Summary Utah Army National Guard North Salt Lake City Readiness Center/Armory Salt Lake City, UT October 7, 2014</p>		
Area	Illumination Readings ft-cd	
	Range	Average
Assembly hall	30 - 57	40
Admin Office Area	25 - 100	50
Classrooms	30 - 90	77
Locker room	10 - 50	30
Storage area	20 - 30	25
Kitchen area	20 - 60	55
B- Unit Storage	5 - 30	30
HHC - Unit Storage	8 - 20	15
HHC - Unit Storage Office	5 - 20	18
CST Break Room	60 - 80	70
CST Operation Center	30 - 80	50
CST Storage	20 - 38	35
CST Vehicle Storage Bays	8 - 46	30
HHC BN HQ Office Area	30 - 60	50
CO-B Administrative Area	30 - 65	50
Library	40 - 70	65
Conference Room	45 - 60	50

Luminance depends on various factors including the task to be performed, the age of the individual, and the surroundings. Luminance of 50 to 100 foot-candles is recommended for performance of visual tasks of medium contrast or small size such as reading pencil handwriting and poorly printed or reproduced material. Depending on the type of display, background luminance of 30 to 60 foot-candles is recommended for VDT work. Replacing light bulbs with higher wattage will increase lighting levels. Replacing burnt out light bulbs and cleaning the light fixture should improve the lighting levels. Supplemental lighting is used for specific work in darker areas, such as under vehicles or at desktop level.



Recommendation:

None.

4.4 Local Exhaust Ventilation

In addition to the stove canopy exhaust in the kitchen, local exhaust ventilation is available in the CST vehicle storage bays in the form of three five inch round vehicle exhaust flexible tube drops. The face velocity for each drop was measured and the average flow rate was calculated as follows: 382 cubic feet per minute (cfm) for the west drop, 436 cfm for the east drop, and 460 cfm for the drop located in the middle of the bay area. These flow rates are adequate for the CST vehicles used in the bay areas.

Recommendation

None

4.5 Asbestos Evaluation

No friable suspect asbestos containing materials were identified in the facility. The facility was built in 2010. No samples were collected.

Recommendation

None

4.6 General Ventilation and IAQ Concerns

The Heating Ventilating and Air-Conditioning (HVAC) System for the Armory consisted of an air handling unit (AHU) located in the mechanical room and is capable of providing heating and cooling to the Readiness Center. This unit has outside makeup air capabilities. The unit is maintained by FMO and the filters are changed every quarter. No complaints of indoor air quality issues were documented or communicated with the POC. Water stained ceiling tile was observed in the library on the second floor. A work order has been placed to replace the ceiling tile. No other signs of water leaks or water stained building materials were observed in other areas. No measurements were collected for IAQ indicators such as carbon dioxide, temperature and relative humidity.

Recommendation: None



4.7 Hazardous Material Storage and Handling Procedures

Hazardous materials used in the Readiness Center consisted of industrial type cleaning supplies stored in the janitor's closet. Other hazardous materials used by the CST unit include chemicals used for instrument calibration and analysis. A copy of both inventories is included in Appendix D. In addition to the chemicals used by CST, radioactive materials are used by monitoring instruments and are not regulated according to **Non-Responsive** the CST Radiation Safety Officer (RSO).

Recommendation:

None

4.8 Safety Walkthrough

Observations noted during the walkthrough of the facility and associated building included:

- Housekeeping of the Readiness Center was good;
- No peeling paint observed throughout the facility;
- Except for one area in the library, No signs of water damage or mold conditions;
- Fire extinguishers are in place and mounted properly. The annual inspection was performed in 9/2014 and a tag is attached to each extinguisher.
- Fire extinguishers are inspected monthly and documented.
- Egress routes are accessible and properly marked and the fire evacuation plan is posted in the Armory.
- No confined spaces were found inside the Readiness Center.
- All electrical panels are properly labeled and accessible.

Recommendation:

None



5.0 RECURRING OBSERVATIONS

No recurring observations were noted during the assistant visit. Personnel were cooperative and provided all requested information understanding of the nature of the assistance visit.

6.0 PROJECT LIMITATIONS

This Project was performed using, as a minimum, practices consistent with standards acceptable within the industry at this time, and a level of diligence typically exercised by industrial hygiene and environmental consultants performing similar services. The assistant visit was conducted in the interest of preventing employee illness and in meeting legal obligation where applicable. Based on information provided, reasonable effort was made to conduct a comprehensive survey covering the parameters considered. Results and recommendations are based on information provided, field measurements, and conditions observed during the survey. Changes in work conditions and practices can alter the outcome of the visit.

The procedures used in this investigation attempt to establish a balance between the competing goals of limiting investigative and reporting costs and time, and reducing the uncertainty about unknown conditions. Therefore, because the findings of this report were derived from the scope, costs, time, and other limitations, the conclusions should not be construed as a guarantee that all environmental or occupational hazards have been identified and fully evaluated. Where sample collection and testing have been performed, Tammer Sciences' professional opinions are based in part on the interpretation of data from discrete sampling locations that may not represent conditions at non-sampled locations. Tammer Sciences assumes no responsibility for omissions or errors resulting from inaccurate information or data provided by sources outside of Tammer Sciences, or from omissions or errors in public records.

Furthermore, it is emphasized that the final decision on how much risk to accept always remains with the client since Tammer Sciences is not in a position to fully understand all of the client's needs. Clients with a greater aversion to risk may want to take additional actions while others, with less aversion to risk, may want to take no further action.



7.0 PROJECT APPROVAL

This IHSAV was reviewed and approved by:

Non-Responsive

November 24, 2014

Sr. Industrial Hygienist

Technical Assistance: For technical assistance regarding information found in this report or the performed survey, please contact **Non-Responsive** at 630-369-7956, **Non-Responsive** or **Non-Responsive** of the Southwest Regional Industrial Hygiene Office, 916-854-1491. Contact the State Safety and Occupational Health Office and/or the Regional Industrial Hygienist should any of the operations change, or should the personnel become incapable of following the previous recommendations and subsequent recommendations are needed.

Appendix A

References

1. American Conference of Governmental Industrial Hygienists (ACGIH), Industrial Ventilation, A Manual of Recommended Practice latest edition.
2. American Conference of Governmental Industrial Hygienists (ACGIH), Threshold Limit Values for Chemical Substances and Physical Agents and Biological Indices
3. American National Standards Institute (ANSI)/Illuminating Engineering Society (IES), Industrial Lighting.
4. American National Standards Institute, Z358. 1-1998. Emergency Eyewash and Shower Equipment
5. AR 40-5, Preventative Medicine
6. AR 40-10, Appendix B – Health Hazard Assessment Program in Support of Army Material Acquisition Decision Process
7. AR 385-10, The Army Safety Program
8. Corps of Engineers Guide Specification, CEGS-1585 1, Overhead vehicle tailpipe (and welding fume) Exhaust Systems
9. DA PAM 40-ERG, Ergonomics
10. DA PAM 40-501, Hearing Conservation.
11. National Safety Council, Fundamentals of Industrial Hygiene
12. NOR 385-10, Army National Guard Safety and Occupational Health Program
13. TB MED 503, The Army Industrial Hygiene Program
14. TG022, US Army Environmental Hygiene Agency (USAEHA), Industrial Hygiene Evaluation Guide
15. TG 141, US Army for Health Promotion and Preventive Medicine (USACHPPM) Industrial Hygiene Air Sampling Guide, Nov. 1997
16. Title 29, Code of Federal Regulations (CFR), 2011, revision Part 1910, Occupational Safety and Health Standards.

Appendix B

Assessment Criteria

A. Ventilation Standards

Ventilation rates were compared to recommendations made in 29 CFR 1910, ACGIH Industrial Ventilation Manual 28th edition, 2013, and Corps of Engineers specifications. See Appendix A for reference information.

B. Illumination Standards

Illumination measurements were compared with recommendations made by the Industrial Engineering Society (IES)/American National Standards Institute (ANSI) RP7-1991 Standard and MIL-STD-1472E.

C. Noise

Noise measurements were taken and compared with OSHA Standard 29 CFR 1910.95 and Department of the Army Pamphlet 40-501.

D. Air Sampling

Personal air sampling was conducted in compliance with applicable NIOSH Analytical Methods. Sampling results were compared to relevant Occupational Safety and Health Administration (OSHA) Permissible Exposure Limits (PEL), American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLV), or National Institute of Occupational Safety and Health (NIOSH) Recommended Exposure Limits (REL).

Occupational Safety and Health Administration (OSHA)

OSHA has established Permissible Exposure Limits (PELs) for workplace toxic and hazardous substances listed in 29 CFR 1910.1000 Table Z-1. Most OSHA PELs are based on 8-hour time weighted averages (TWAs); when sampling periods differ from 8 hours, the result must first be converted to an 8-hour TWA before comparing it to the OSHA PEL. Some OSHA PELs are based on Short Term Exposures Limits (STEL) of 15 minutes of worst case exposure or Ceiling Limits of worst case peak exposures (sampled as a 15 minute exposure if direct-reading methods are not available).

OSHA regulations are legally enforceable. Employers are required to maintain employee exposures below PELs. The best practice is to eliminate hazards and use safer substitutes. Alternatively, engineering and/or administrative (work practice) controls may reduce exposures

B-1

to acceptable levels. Personal protective equipment should be the solution of last resort, implemented after all other efforts to eliminate the hazard have been exhausted or deemed infeasible. OSHA 29 CFR 1910.134 covers the use of respiratory protection in the work place.

American Conference of Governmental Industrial Hygienists (ACGIH)

Unlike the OSHA PELs, the ACGIH TLVs are not consensus standards; however, TLVs represent a scientific opinion based on a review of existing peer-reviewed scientific literature by committees of experts in public health and related sciences.

Occupational Exposure Limit

In accordance with the Department of the Army (DA) Pamphlet 40-503, Industrial Hygiene Program (DA PAM 40-503), "The DA mandates the use of ACGIH TLVs when they are more stringent than OSHA regulations or when there is no PEL." The DA defines the resulting exposure limit as the Occupational Exposure Limit (OEL).



Photo #1: Main entrance to the North Salt Lake City Readiness Center.



Photo #2: South east side of the Armory/Readiness Center.

C-1

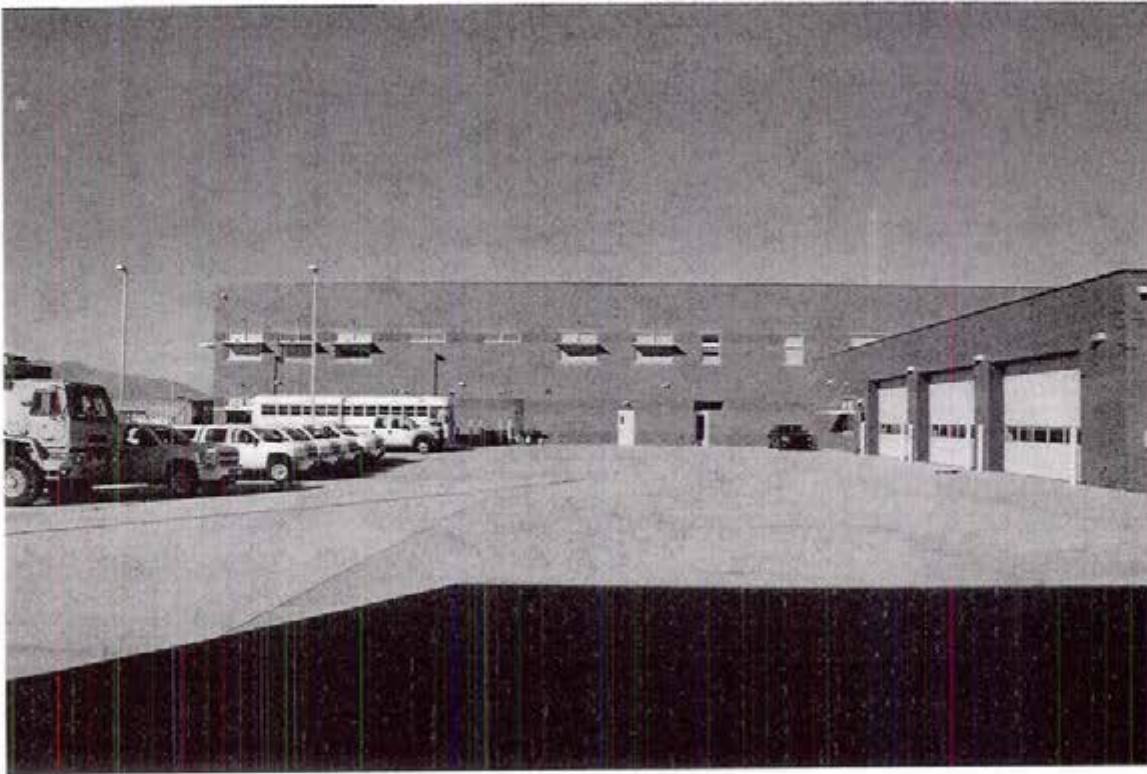


Photo #3: East side of the RC showing the CST vehicle storage bays.



Photo #4: North side of the building



Photo #5: Inside the drill hall facing west.



Photo #6: Inside the drill hall facing east.



Photo #7: Inside the kitchen.



Photo #8: Break room.

C-4

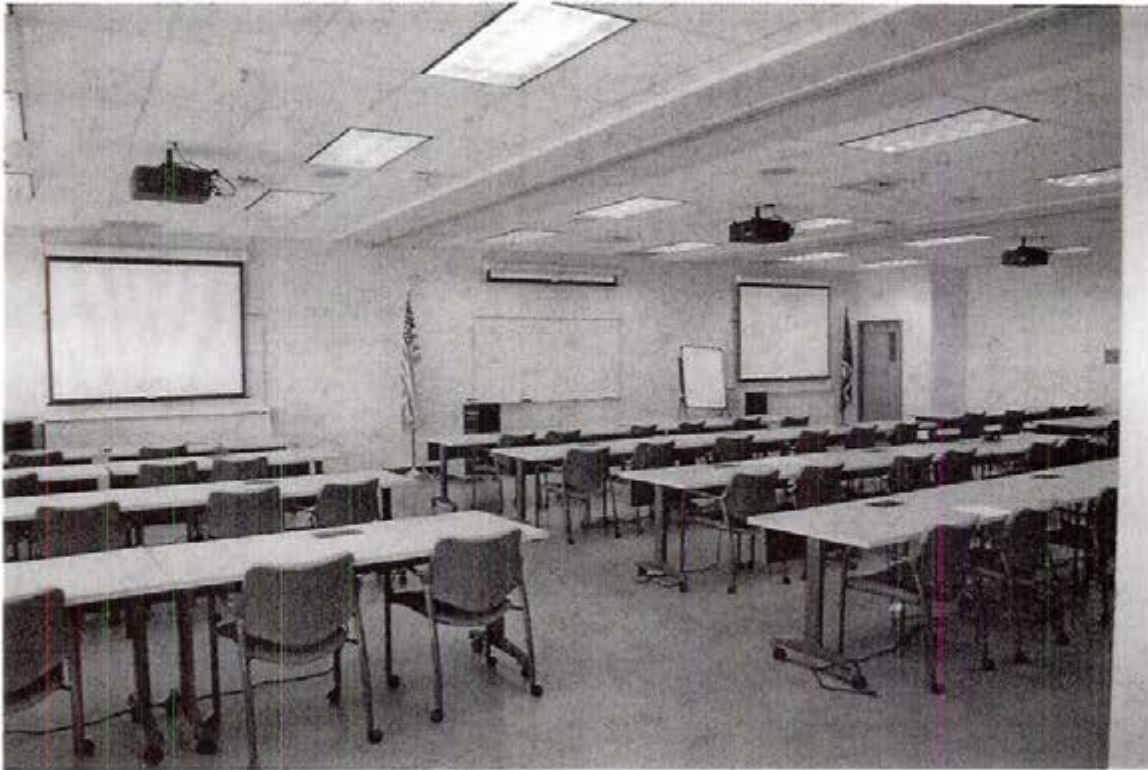


Photo #9: Instruction classroom.



Photo #10: Library.



Photo #11: MSDS binder in the CST vehicle bay area.

Appendix D

NSC

MSDS INVENTORY

NAME	LOCATION
SKILCRAFT TAN OBLITERATING COMPOUND	FLAMMABLE CABINET/RIGHT SIDE
WD-40	FLAMMABLE CABINET/RIGHT SIDE
INSECTICIDE	FLAMMABLE CABINET/MIDDLE
RUST-OLEUM CAMO-DEEP FOREST GREEN	FLAMMABLE CABINET/MIDDLE
RUST-OLEUM CAMO-KHAKI	FLAMMABLE CABINET/MIDDLE
RUST-OLEUM DARK HAMMERED-BRONZE	FLAMMABLE CABINET/MIDDLE
RUST-OLEUM REGAL RED	FLAMMABLE CABINET/MIDDLE
SKILCRAFT FLAT OLIVE DRAB	FLAMMABLE CABINET/MIDDLE
3M MULTIPURPOSE ADHESIVE	FLAMMABLE CABINET/LEFT SIDE
CLP	FLAMMABLE CABINET/LEFT SIDE
CRC SILICONE	FLAMMABLE CABINET/LEFT SIDE
FAST DRY SPRAY PAINT-FIRE RED	FLAMMABLE CABINET/LEFT SIDE
FAST DRY SPRAY PAINT-FLAT BLACK	FLAMMABLE CABINET/LEFT SIDE
KRYLON FUSION-SATIN WHITE	FLAMMABLE CABINET/LEFT SIDE
RUST-OLEUM INVERTED MARKING INK-WHITE	FLAMMABLE CABINET/LEFT SIDE
SKILCRAFT BRAKE PARTS CLEANER	FLAMMABLE CABINET/LEFT SIDE
SKILCRAFT ENAMEL PAINT	FLAMMABLE CABINET/LEFT SIDE
SKILCRAFT POWER DUSTER	FLAMMABLE CABINET/LEFT SIDE
SKILCRAFT SO SURE BLACK	FLAMMABLE CABINET/LEFT SIDE
SKILCRAFT STENCIL MARKING-WHITE	FLAMMABLE CABINET/LEFT SIDE
SKILCRAFT POWER DUSTER	OFFICE/SUPPLY CAGE
DUST OFF ANTI-STATIC WIPES	OFFICE/SUPPLY CAGE
DUST OFF DUSTER	OFFICE/SUPPLY CAGE
EXPO CLEANER	OFFICE/SUPPLY CAGE
SKILCRAFT CLEAN	OFFICE/SUPPLY CAGE
SKILCRAFT WIPE AWAYS	OFFICE/SUPPLY CAGE
FIRE EXTINGUISHERS	ONE BY EACH DOOR

MSDS Catalog

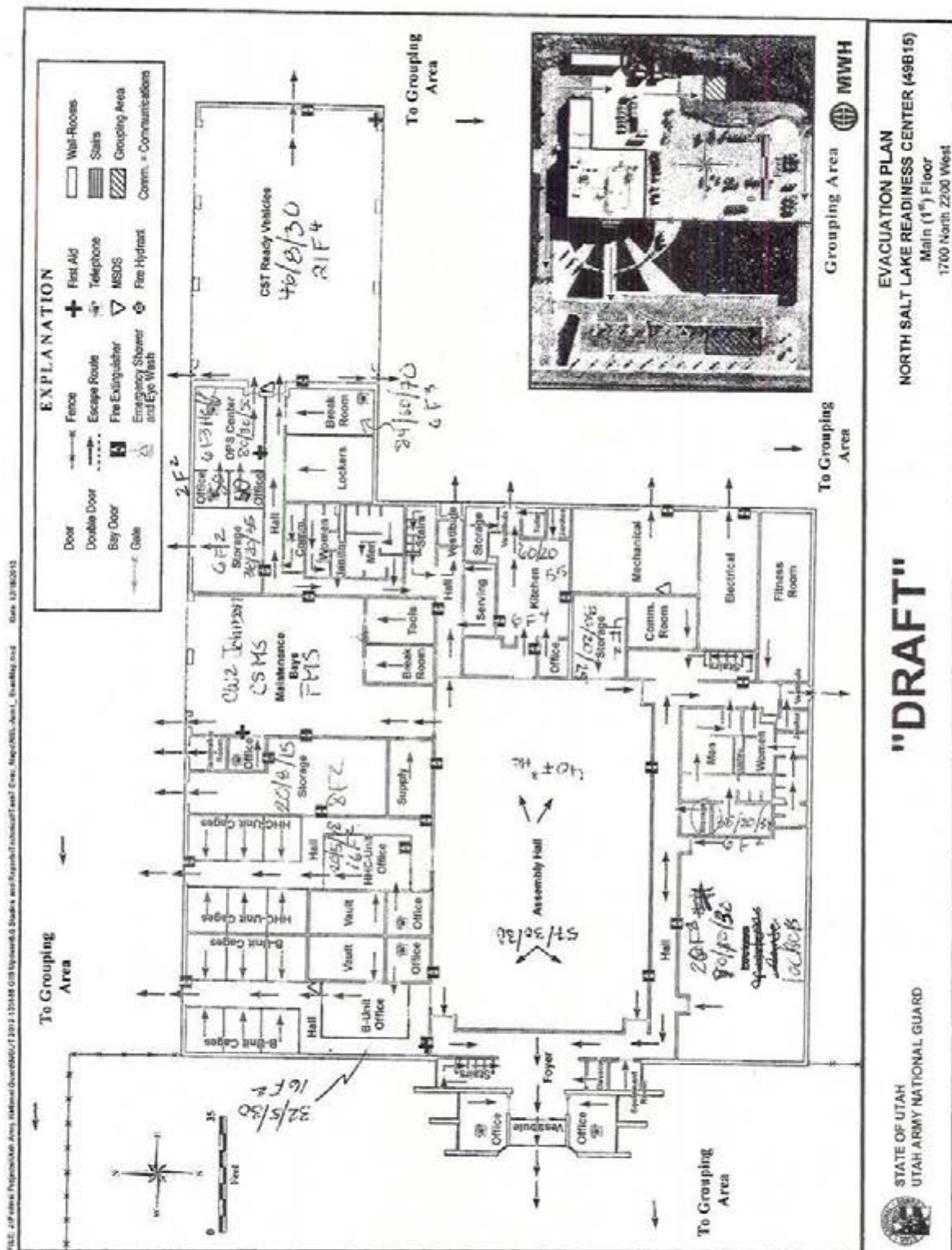
Hazardous Materials	CAS#
1,4-Diazabicyclo[2.2.2]octane	280-57-9
Acetic Acid	64-19-7
Acetone	67-64-1
Aluminum Hydroxide 76.5%	21645-51-2
Ammonia	1336-21-6
Anhydrous Isopropanol	67-63-0
Bleach (Sodium hypochlorite)	7681-52-9
CSC-401	1310-73-2
Dichloromethane	75-09-2
Dimethyl Sulfoxide	67-68-5
Ethanol	64-17-5
Hydrochloric Acid	7647-01-0
Hydrogen Peroxide 50%	7722-84-1
Isoamyl Acetate (Banana oil)	123-92-2
Isopropyl Alcohol	67-63-0
Kerosene	8008-20-6 or 64742-81-0
Magnesium Turnings	7439-95-4
Methanol	67-56-1
Methyl Ethyl Ketone (MEK)	78-93-3
Muriatic Acid	7647-01-0
n-Hexane	110-54-3
Nitric Acid	7697-37-2
Paint Thinner	8052-41-3
Polyurethane	n/a
Potassium Nitrate	7757-79-1
Propane	74-98-6
p-Xylene	106-42-3
Rosin	8050-09-7
Sodium Chloride	7647-14-5
Sodium Hydroxide, 50%	1310-73-2
Sodium Nitrate	7631-99-4
Sulfuric Acid	7664-93-9
United 77 Blatron	7664-93-9
Xylo Xylene	1330-20-7
Zinc Sulfate Hydrate, Puratronic 99.999%	7446-20-0
PFTBA (perfluorotributylamine)	311-89-7
Hexane	110-54-3
Acetonitrile	75-05-8
Chloroform	67-66-3

Compressed Gas	CAS#
Calgas 1,3,5-Tris(trifluoromethyl)benzene,	
Bromopentafluorobenzene in Nitrogen	729-81-7
Calgas with Ammonia in Nitrogen	n/a
Calgas with Chlorine in Nitrogen	n/a
Calgas with Hydrogen Cyanide	n/a
Calgas with Isobutylene in Air	n/a
Calgas with Nitrogen Dioxide in Nitrogen	n/a
Calgas with Oxygen, Methane, Carbon	
Monoxide, & Hydrogen Sulfide	n/a
Nitrogen, Liquid	7727-37-9
Hydrogen	1333-74-0

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251 16

Appendix E







Appendix F

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ANALYTICAL REPORT

Report Date: October 20, 2014

Non-Responsive

Tammer Sciences, Inc.
3744 Lawrence Drive
Naperville, IL 60564

Phone: (630) 369-7956

Non-Responsive

Workorder: 34-1428754

Client Project ID: Camp Williams RC 101414

Purchase Order: Camp Williams RC

Project Manager: Non-Responsive

Analytical Results

Sample ID: CWW W01		Collected: 10/08/2014
Lab ID: 1428754001	Sampling Location: Camp Williams RC	Received: 10/14/2014
Method: NIOSH 7300 Mod.	Media: Wipe	Prepared: 10/15/2014
	Sampling Parameter: Area 1 ft ²	Analyzed: 10/17/2014
Analyte	ug/sample	RL (ug/sample)
Lead	1.9	1.3

Sample ID: CWW W02		Collected: 10/08/2014
Lab ID: 1428754002	Sampling Location: Camp Williams RC	Received: 10/14/2014
Method: NIOSH 7300 Mod.	Media: Wipe	Prepared: 10/15/2014
	Sampling Parameter: Area 1 ft²	Analyzed: 10/17/2014
Analyte	ug/sample	RL (ug/sample)
Lead	2.0	1.3

Sample ID: CWW W03		Collected: 10/08/2014
Lab ID: 1428754003	Sampling Location: Camp Williams RC	Received: 10/14/2014
Method: NIOSH 7300 Mod.	Media: Wipe	Prepared: 10/15/2014
	Sampling Parameter: Area 1 ft²	Analyzed: 10/17/2014
Analyte	ug/sample	RL (ug/sample)
Lead	<1.3	1.3

Sample ID: CWW W04	Collected: 10/08/2014	
Lab ID: 1428754004	Received: 10/14/2014	
Method: NIOSH 7300 Mod.	Media: Wipe	
	Sampling Parameter: Area 1 ft²	
	Prepared: 10/15/2014	
	Analyzed: 10/17/2014	
Analyte	ug/sample	RL (ug/sample)
Lead	1.3	1.3

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Environmental

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ANALYTICAL REPORT

Workorder: 34-1428754
 Client Project ID: Camp Williams RC 101414
 Purchase Order: Camp Williams RC
 Project Manager: Non-Responsive

Analytical Results

Sample ID: CWW W05		Collected: 10/08/2014
Lab ID: 1428754005	Sampling Location: Camp Williams RC	Received: 10/14/2014
Method: NIOSH 7300 Mod.	Media: Wipe	Prepared: 10/15/2014
	Sampling Parameter: Area 1 ft²	Analyzed: 10/17/2014
Analyte	ug/sample	RL (ug/sample)
Lead	<1.3	1.3

Sample ID: CWW W06		Collected: 10/08/2014
Lab ID: 1428754006	Sampling Location: Camp Williams RC	
Method: NIOSH 7300 Mod.	Media: Wipe	Prepared: 10/15/2014
	Sampling Parameter: Area 1 ft²	Analyzed: 10/17/2014
Analyte	ug/sample	RL (ug/sample)
Lead	<1.3	1.3

Sample ID: CWW W07		Collected: 10/08/2014
Lab ID: 1428754007	Sampling Location: Camp Williams RC	
Method: NIOSH 7300 Mod.	Media: Wipe	Prepared: 10/15/2014
	Sampling Parameter: Area 1 ft²	Analyzed: 10/17/2014
Analyte	ug/sample	RL (ug/sample)
Lead	<1.3	1.3

Sample ID: CWW W09		Collected: 10/08/2014
Lab ID: 1428754008	Sampling Location: Camp Williams RC	Received: 10/14/2014
Method: NIOSH 7300 Mod.	Media: Wipe	Prepared: 10/15/2014
	Sampling Parameter: Area 1 ft²	Analyzed: 10/17/2014
Analyte	ug/sample	RL (ug/sample)
Lead	<1.3	1.3

Sample ID: CWW W10		Collected: 10/08/2014
Lab ID: 1428754009	Sampling Location: Camp Williams RC	Received: 10/14/2014
Method: NIOSH 7300 Mod.	Media: Wipe	Prepared: 10/15/2014
	Sampling Parameter: Area 1 ft²	Analyzed: 10/17/2014
Analyte	ug/sample	RL (ug/sample)
Lead	4.3	1.3

Sample ID: CWW W11	Collected: 10/08/2014	
Lab ID: 1428754010	Received: 10/14/2014	
Method: NIOSH 7300 Mod.	Media: Wipe	
	Prepared: 10/15/2014	
	Sampling Parameter: Area 1 ft ²	
	Analyzed: 10/17/2014	
Analyte	ug/sample	RL (ug/sample)
Lead	2.4	1.3

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Appendix G



ANALYTICAL REPORT

Report Date: October 20, 2014**Non-Responsive**

Tammer Sciences, Inc.
3744 Lawrence Drive
Naperville, IL 60564

Phone: (630) 369-7956

Fax: (630) 369-7957

Non-ResponsiveWorkorder: **34-1428753**

Client Project ID: NSLC-RC 101314

Purchase Order: **Non-Responsive**

Project Manager:

Analytical Results

Analytical Results		
Sample ID: NSLC W-01		Collected: 10/07/2014
Lab ID: 1428753001	Sampling Location: NSLC-RC	Received: 10/14/2014
Method: NIOSH 7300 Mod.	Media: Wipe	Prepared: 10/16/2014
	Sampling Parameter: Area 1 ft²	Analyzed: 10/17/2014
Analyte	ug/sample	RL (ug/sample)
Lead	6.2	1.3

Sample ID: NSLC W-02		Collected: 10/07/2014
Lab ID: 1428753002	Sampling Location: NSLC-RC	Received: 10/14/2014
Method: NIOSH 7300 Mod.	Media: Wipe	Prepared: 10/16/2014
	Sampling Parameter: Area 1 ft²	Analyzed: 10/17/2014
Analyte	ug/sample	RL (ug/sample)
Lead	6.5	1.3

Sample ID: NSLC W-03	Collected: 10/07/2014	
Lab ID: 1428753003	Received: 10/14/2014	
Method: NIOSH 7300 Mod.	Media: Wipe	
	Sampling Parameter: Area 1 ft²	
	Prepared: 10/16/2014	
	Analyzed: 10/17/2014	
Analyte	ug/sample	RL (ug/sample)
Lead	7.5	1.3

Sample ID: NSLC W-04	Collected: 10/07/2014	
Lab ID: 1428753004	Received: 10/14/2014	
Method: NIOSH 7300 Mod.	Media: Wipe	
	Prepared: 10/16/2014	
	Sampling Parameter: Area 1 ft ²	
	Analyzed: 10/17/2014	
Analyte	ug/sample	RL (ug/sample)
Lead	12	1.3

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ANALYTICAL REPORT

Report Date: October 20, 2014**Non-Responsive**

Lammer Sciences, Inc.
3744 Lawrence Drive
Naperville, IL 60564

Phone: (630) 369-7956

Fax: (630) 369-7957

Non-ResponsiveWorkorder: **34-1428753**

Client Project ID: NSLC-RC 101314

Purchase Order: NSLC-RC

Project Manager: **Non-Responsive**

Analytical Results

Sample ID: NSLC W-01		Collected: 10/07/2014
Lab ID: 1428753001	Sampling Location: NSLC-RC	Received: 10/14/2014
Method: NIOSH 7300 Mod.	Media: Wipe	Prepared: 10/16/2014
	Sampling Parameter: Area 1 ft²	Analyzed: 10/17/2014
Analyte	ug/sample	RL (ug/sample)
Lead	6.2	1.3

Sample ID: <u>NSLC W-02</u>		Collected: 10/07/2014
Lab ID: 1428753002	Sampling Location: NSLC-RC	Received: 10/14/2014
Method: NIOSH 7300 Mod.	Media: Wipe	Prepared: 10/16/2014
	Sampling Parameter: Area 1 ft ²	Analyzed: 10/17/2014
Analyte	ug/sample	RL (ug/sample)
Lead	6.5	1.3

Sample ID: <u>NSLC W-03</u>		Collected: 10/07/2014
Lab ID: 1428753003	Sampling Location: NSLC-RC	Received: 10/14/2014
Method: NIOSH 7300 Mod.	Media: Wipe	Prepared: 10/16/2014
	Sampling Parameter: Area 1 ft²	Analyzed: 10/17/2014
Analyte	ug/sample	RL (ug/sample)
Lead	7.5	1.3

Sample ID: NSLC W-04		Collected: 10/07/2014
Lab ID: 1428753004	Sampling Location: NSLC-RC	
Method: NIOSH 7300 Mod.		Media: Wipe
Sampling Parameter: Area 1 ft²		Prepared: 10/16/2014
Analyte	ug/sample	RL (ug/sample)
Lead	12	1.3

ADDRESS 960 West LeVoy Drive, Salt Lake City, Utah, 84123 USA | PHONE +1 801 266 7700 | FAX +1 801 268 9992

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ANALYTICAL REPORT

Workorder: 34-1428753
 Client Project ID: NSLC-RC 101314
 Purchase Order: NSLC-RC
 Project Manager: Non-Responsive

Analytical Results

Sample ID: NSLC W-05	Collected: 10/07/2014
Lab ID: 1428753005	Received: 10/14/2014
Method: NIOSH 7300 Mod.	Media: Wipe
Sampling Parameter: Area 1 ft ²	Prepared: 10/16/2014
Analyte	Analyzed: 10/17/2014
ug/sample	RL (ug/sample)
Lead	11 1.3

Sample ID: NSLC W-06	Collected: 10/07/2014
Lab ID: 1428753006	Received: 10/14/2014
Method: NIOSH 7300 Mod.	Media: Wipe
Sampling Parameter: Area 1 ft ²	Prepared: 10/16/2014
Analyte	Analyzed: 10/17/2014
ug/sample	RL (ug/sample)
Lead	5.2 1.3

Sample ID: NSLC W-07	Collected: 10/07/2014
Lab ID: 1428753007	Received: 10/14/2014
Method: NIOSH 7300 Mod.	Media: Wipe
Sampling Parameter: Area 1 ft ²	Prepared: 10/16/2014
Analyte	Analyzed: 10/17/2014
ug/sample	RL (ug/sample)
Lead	19 1.3

Sample ID: NSLC W-08	Collected: 10/07/2014
Lab ID: 1428753008	Received: 10/14/2014
Method: NIOSH 7300 Mod.	Media: Wipe
Sampling Parameter: Area 1 ft ²	Prepared: 10/16/2014
Analyte	Analyzed: 10/17/2014
ug/sample	RL (ug/sample)
Lead	<1.3 1.3

Sample ID: NSLC W-09	Collected: 10/07/2014
Lab ID: 1428753009	Received: 10/14/2014
Method: NIOSH 7300 Mod.	Media: Wipe
Sampling Parameter: Area 1 ft ²	Prepared: 10/16/2014
Analyte	Analyzed: 10/17/2014
ug/sample	RL (ug/sample)
Lead	1.3 1.3

Sample ID: NSLC W-10	Collected: 10/07/2014
Lab ID: 1428753010	Received: 10/14/2014
Method: NIOSH 7300 Mod.	Media: Wipe
Sampling Parameter: Area 1 ft ²	Prepared: 10/16/2014
Analyte	Analyzed: 10/17/2014
ug/sample	RL (ug/sample)
Lead	<1.3 1.3



ANALYTICAL REPORT

Workorder: 34-1428753
 Client Project ID: NSLC-RC 101314
 Purchase Order: NSL C-RC
 Project Manager: Non-Responsive

Comments

Workorder: 1428753

The samples in this workorder were collected on an unknown wipe matrix that did not digest in the presence of concentrated nitric acid. The samples were treated as ghost wipes and prepared along with ghost wipe QC samples.

Report Authorization (/S/ is an electronic signature that complies with 21 CFR Part 11)

Method	Analyst	Peer Review
NIOSH 7300 Mod.	Non-Responsive 10/20/2014 14:10	Non-Responsive 10/20/2014 15:10

Laboratory Contact Information

ALS Environmental
 960 W Levoy Drive
 Salt Lake City, Utah 84123

Phone: (801) 266-7700
 Email: als@slc.lab@ALSglobal.com
 Web: www.als@slc.com

General Lab Comments

The results provided in this report relate only to the items tested.
 Samples were received in acceptable condition unless otherwise noted.
 Samples have not been blank corrected unless otherwise noted.
 This test report shall not be reproduced, except in full, without written approval of ALS.

ALS provides professional analytical services for all samples submitted. ALS is not in a position to interpret the data and assumes no responsibility for the quality of the samples submitted.

All quality control samples processed with the samples in this report yielded acceptable results unless otherwise noted.

ALS is accredited for specific fields of testing (scopes) in the following testing sectors. The quality system implemented at ALS conforms to accreditation requirements and is applied to all analytical testing performed by ALS. The following table lists testing sector, accreditation body, accreditation number and website. Please contact these accrediting bodies or your ALS project manager for the current scope of accreditation that applies to your analytical testing.

Testing Sector	Accreditation Body (Standard)	Certificate Number	Website
Environmental	AClass (DoD ELAP)	ADE-1420	http://www.aiclasscorp.com
	Utah (NELAC)	DATA1	http://health.utah.gov/lab/labimp/
	Nevada	UT00009	http://ndep.nv.gov/osdw/labservice.htm
	Oklahoma	UT00009	http://www.deq.state.ok.us/CSDnew/
	Iowa	IA# 376	http://www.iowadnr.gov/insideDNR/RegulatoryWater.aspx
	Florida (TNI)	E871067	http://www.dep.state.fl.us/labs/bars/sas/qa/
	Texas (TNI)	T104704456-11-1	http://www.tceq.texas.gov/field/qa/lab_accred_certif.html
Industrial Hygiene	AIHA (ISO 17025 & AIHA IHLAP/ELLAP)	101574	http://www.aihaaccreditedlabs.org
Lead Testing:			
CPSC	AClass (ISO 17025, CPSC)	ADE-1420	http://www.aiclasscorp.com
Soil, Dust, Paint, Air	AIHA (ISO 17025, AIHA ELLAP and NLLAP)	101574	http://www.aihaaccreditedlabs.org
Dietary Supplements	AClass (ISO 17025)	ADE-1420	http://www.aiclasscorp.com



ANALYTICAL REPORT

Workorder: 34-1428753
Client Project ID: NSLC-RC 101314
Purchase Order: NSLC-RC
Project Manager: Non-Responsive

Definitions

LOD = Limit of Detection = MDL = Method Detection Limit, A statistical estimate of method/media/instrument sensitivity.

LOQ = Limit of Quantitation = RL = Reporting Limit, A verified value of method/media/instrument sensitivity.

ND = Not Detected, Testing result not detected above the LOD or LOQ.

NA = Not Applicable.

** No result could be reported, see sample comments for details.

< This testing result is less than the numerical value.

() This testing result is between the LOD and LOQ and has higher analytical uncertainty than values at or above the LOQ.



1478753

☐ RUSH Status Requested - ADDITIONAL CHARGE
RESULTS REQUIRED BY

DATE _____

CONTACT ALS SALT LAKE PRIOR TO SENDING SAMPLES

4. Quote No. _____

ALS Project Manager

5. Sample Collection

Sampling Site NS/C-RC

Industrial Process Ammonia

Date of Collection 10/7/2014

Time Collected 1 AM

Date of Shipment 10/11/2014

Chain of Custody No. _____

6. How did you first learn about ALS?

[illegible]

* Specify: Solid sorbent tube, e.g. Charcoal; Filter type; Impinger solution; Bulk sample; Blood; Urine; Tissue; Soil; Water; Other

** 1. $\mu\text{g}/\text{sample}$ 2. mg/m^3 3. ppm 4. % 5. $\mu\text{g}/\text{m}^3$ 6. _____ (other) Please indicate one or more units in the column entitled Units**

Comments

Possible Contaminants

7. Chain of Custody **Non-Responsive**

Relinquished by

Date/Time 10/11/2014 PM

Received by

Date/Time 10/19/17 1116

Relinquished by

Date/Time

Received by

Date/Time

960 West LeVoy Drive / Salt Lake City, UT 84123

800-356-9135 or 801-266-7700 / FAX: 801-268-9992

ALS Environmental

Appendix H

Armory Check list

North Salt Lake City Readiness Center Salt Lake City, UT October 7, 2014	
Five lead wipe samples collected from drill floor (take samples from dusty horizontal floor surfaces)	10 samples collected including the blank.
Are any weapons cleaned in the facility, if yes where are they cleaned?	Yes in the assembly hall
Additional lead wipe samples taken from 25% of the rest of the building - (on floor areas only)	Assembly hall floor and surfaces in classroom, kitchen, and break room.
Is there a converted indoor firing range ? If so collect additional wipe samples IAW the SOW.	No
Is there any peeling paint ? Take bulk sample if able.	No
Are there any signs of water damage or mold ?	Yes in the library on the second floor.
Any suspected ACM ? Where and what condition is it in. Bulk sample if able.	No suspect ACM
Quality of housekeeping	Good
HVAC maintenance plan in place?	Maintenance plan in place. Managed by FMO Non-Responsive
Overall condition of HVAC system	Very good
Obtained CO2, Temp, RH monitoring	Yes, Temp ranged from 70 to 72°F, RH ranged between 40 to 50%, and CO ₂ Readings were all below 650 ppm.
HAZMAT inventory on hand (make copies for the report), MSDS available for all materials.	Copy included in report
HAZMAT storage , Condition of lockers, if outside storage building is used is it ventilated and does it meet OSHA standards.	Flammable storage cabinets are located in each supply storage. Each cabinet had an SDS binder listing all chemicals stored in the cabinet.
Fire alarm in working condition - <i>not usually in place in older armories</i>	Yes. Last tested 9/2014.

H-1

North Salt Lake City Readiness Center Salt Lake City, UT October 7, 2014	
Fire extinguishers in place and properly identified and mounted	Yes
Evidence of monthly fire extinguisher inspections	Yes
Annual fire extinguisher inspections tags current	Last annual check was 9/2014.
Are eye wash stations available in areas where hazardous materials are used and are they inspected weekly (inspections must be documented)	No
Egress routes accessible and properly marked - -noted on <u>Fire Evacuation Plan</u>	Yes, evacuation plan egress routes are posted
Training programs in place; Hazcom, Respiratory Protection, Confined Spaces, Hearing conservation, PPE (if applicable)	Yes, Hazmat/Hazcom training last performed in 2/2014.
Any Photo labs	No
Any hazardous noise sources	Background noise ranged from 73 to 80 in the kitchen next to the refrigerator and ice machine while they are on. Other areas <65 dBA.
Light levels checked throughout building	Yes, annotated on floor layout
Breaker panels properly labeled with no exposed wiring	Yes
Check building occupancy 1. How many military personnel, how many civilian personnel 2. What types of units occupy facility, i.e. Administrative, Maintenance, etc.?	35 military full time. Two civilians. Administrative, CST, and maintenance bays
Any civilian activities in armory (cub scouts, classes, day care, parties etc)	Occasional, parties like boyscouts.
Obtain two lead air samples	No air samples were collected on the basis that no IFR is present
Evaluate Kitchen Stove Hood Flow if Present IAW NFPA Standard 96.	Yes

H-2

North Salt Lake City Readiness Center Salt Lake City, UT October 7, 2014	
Collect Source Noise Measurements of Kitchen Appliances and Document Using DD 2214	73 – 80 by fridge
Conduct a safety walkthrough of entire facility document any safety deficiencies found.	Done
<u>Take photos</u> of outside of building , all sample points and any pertinent hazards or concerns.	Done
Name of Armory, POC , phone # , address and organizations in Armory	Non-Responsive 1624 N 2200 W Salt Lake City Utah 801-715-3762

Industrial Hygiene Southwest

Violation Inventory Log

**LOG OF SCHEDULE OF CORRECTIVE ACTION - COMPLIANCE WITH SAFETY AND HEALTH STANDARDS
North Salt Lake City Readiness Center**



CONTROL NUMBER	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/COIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
CLOSED									
UTRC-100714- Exec. Summary	Lead particulate coming from weapons being cleaned	Drill Hall	3	Thoroughly clean areas identified, e.g. assembly hall, for cleaning weapons during this SAV. Utilize Armory Clean-up SOP during cleaning episodes. Clean dining & classroom areas after every episode of cleaning weapons to help prevent migration of heavy metals.					General Duty Clause 5(a)(1)

Reference DA FORM 4754
VER. 15 OCT 2009

Page 1 of 1

Recommendations

None

J-1

1 Oct 2014



ARMY NATIONAL GUARD INDUSTRIAL HYGIENE - SOUTHWEST

Guam • Hawaii • California • Oregon • Washington • Nevada • Arizona • Idaho • Utah • Wyoming • Montana • New Mexico • Nebraska

Industrial Hygiene Site Assistance Visit

Ogden Armory
625 East 5300 South Street
Ogden, UT 84402

10510 Superfortress Avenue, Suite C, Mather, CA 95655

(916) 854-1494



DEPARTMENT OF THE ARMY AND AIRFORCE
NATIONAL GUARD BUREAU
INDUSTRIAL HYGIENE SOUTHWEST
10510 Superfortress Ave, Ste. C
Mather, CA 95655

19 OCT 2014

ARNG-CSG-P

MEMORANDUM THRU **Non-Responsive** 2953 Minuteman Dr, ATTN: Deputy State Surgeon,
Draper, UT 84020

FOR Commander, Ogden Armory 625 East 5300 South Street, Ogden, UT 84402

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for Ogden Armory 625 East 5300 South Street, Ogden, UT on 01 OCT 2014

1. References. See survey report.

2. General.

a. At the request of the NGB Industrial Hygiene, Southwest (IHSW) Region, an Industrial Hygiene Site Assistance Visit and cursory review of safety related items and programs was conducted at the Ogden Armory 625 East 5300 South Street, Ogden, UT on 01 OCT 2014.

b. The findings and recommendations in this Executive Summary are controlling and supersede all recommendations in the Industrial Hygiene (IH) report (reference Attachment II). However, IHSW concurs with the observations and findings within the attached IH report.

c. Risk Assessment Codes (RAC) provided in this report have been derived from two sources: Deriving Risk Assessment Codes (RAC's) for Health Hazards (Ref: DOD Instruction 6055.1) and AR 385-10, The Army Safety Program.

d. Use of trademark names in the attached report, or this Executive Summary, does not imply Army National Guard endorsement of any product.

3. Findings. See survey report.

4. Commendable.

a. The facility was generally clean and orderly and personnel were helpful during this IHSAV.

5. Observations / Recommendations.

NOTE: This section provides conclusions and recommendations for the findings and observations made within the attached contractors report. The paragraphs are numbered to correspond to the sections where they were first noted. (i.e., paragraph 2.1a represents the 2.1a located within the contractors report.

a. Upgrade housekeeping practices throughout this facility to help prevent migration of lead dust. Thoroughly clean areas identified during this SAV that are above 40 ug/ft² of lead dust. Utilize Armory

ARNG-CSG-P

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHS AV) for Ogden Armory 625 East 5300 South Street, Ogden, UT on 01 OCT 2014

Clean-up SOP during cleaning episodes. Clean vault/storage area after every episode of cleaning weapons to help prevent migration of heavy metals. (para. 3.1) (RAC 2)

b. Conduct a facility survey to identify Asbestos Containing Material (ACM) within the facility and develop ACM Management Plan. Conduct awareness training to all personnel who occupy the facility regarding the findings and the ACM Management Plan. The survey may have been completed, however, at the time of this assistance visit awareness training, ACM identification, or an ACM Management Plan was not available. (para. 3.2) (RAC 3)

6. Violation Correction Log.

a. IHSW has provided a Violation Correction Log derived from the observations from this visit. IHSW recommends the following:

(1) Commander(s) assign an Action OIC/NCOIC, Suspense Date for completion, and Estimated Cost(s) to ensure item completion and corrective status is briefed during quarterly (or monthly) Safety Meetings/Councils until resolved.

(2) Corrective measures should be implemented and accomplished at the lowest levels possible. Hazards and Corrective Measures that cannot be corrected at the facility level, and require assistance from higher headquarters or from the state level, should be elevated to the Quarterly State/BN Safety Council Meeting for resolution.

(3) Recommend a representative from the facility attend all quarterly/monthly meetings to ensure the appropriate emphasis and corrective actions are followed for hazard resolution and abatement of the observations made during this visit.

(4) Retain entries of the items corrected, or closed, for future reference. This may be accomplished by posting completed items within the Corrected Hazard Sheet portion of the Excel Violation Correction Log Workbook we've provided.

(5) The preferred method to document and track identified hazards for resolution is for their entry into the Reserve Component Automation System – Safety and Occupational Health (RCAS-SOH) Program.

b. IHSW recommends further program refinement through written documentation for standardized guidance to the personnel performing the processes. Conducting Hazard Assessments consistent with 29 Code of Federal Regulations (CFR) 1910.132, General Requirements for Personal Protective Equipment and AR 40-5, Preventive Medicine, would provide this continued program refinement.

7. Hazard Assessment/Job Safety Analysis (JSA).

a. Documenting the Hazard Assessments provides a method to obtain initial and periodic review from the Industrial Hygiene, Occupational Health and Safety Professions located at the JFHQ/HQ/state level.

b. The Hazard Assessments should be used as written training materials for the new, transfer and unit personnel working under the auspice of the facility.



Industrial Hygiene Southwest
Violation Inventory Log
LOG OF SCHEDULE OF CORRECTIVE ACTION - COMPLIANCE WITH SAFETY AND HEALTH STANDARDS
OGDEN ARMORY, UTAH 84402

CONTROL NUMBER	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/NCIC	Estimated Costs	DATE CORRECTED	REFERENCES
UTOA-10012014-3.1	Lead levels exceeded the minimum requirements.	Armory	2	Upgrade housekeeping practices throughout this facility to help prevent migration of lead dust. Thoroughly clean areas identified during this SAV that are above 40 ug/ft of lead dust. Utilize Armory Clean-up SOP during cleaning episodes. After cleaning weapons this area should be thoroughly cleaned to help prevent migration of heavy metals.					Occupational Safety and Health Administration (OSHA) standard for lead. 1910.1025 (h)(1)
UTOA-10012014-3.5	Armory hasn't converted to new SDS format	Armory	4	Update all MSDS for the facility with the new SDS format by Jun 2016					29 CFR 1910.1200
UTOA-10012014-3.2	There was no Asbestos Management plan in place.	Armory	3	Conduct a facility survey to identify Asbestos Containing Material (ACM) within the facility and develop ACM Management Plan. Conduct awareness training to all personnel who occupy the facility regarding the finding and the ACM Management Plan. The survey may have been completed, however, at the time of this assistance visit, awareness training, ACM identification, or an ACM Management Plan was not available.					29 CFR 1910.1001

ARMORY**CLEANUP & FOLLOW-UP HOUSEKEEPING
RECOMMENDATIONS****Materials Needed:**

1. Cloth Mop head (s) & Mop head holder(s) with handle.
2. Mop bucket (s) with wringer.
3. Clean cotton rags and sponges.
4. Disposable gloves
5. Large barrel (55 gal.) to store wastewater in after changing out of dirty scrub water. Waste water containers.
6. Disposable overshoes or rubber boots. Personnel conducting cleaning operations should not take clothes, boots, etc., home for laundering.
7. HEPA vacuum
8. Six (6) mill plastic bags to dispose of waste.
9. Detergent with surfactant, e.g., Spic-N-Span, Mr. Clean, etc.

Disposal of Waste Water and Cleaning Materials:

1. *NOTE:* Consult with Local Army National Guard Environmental Office prior to taking any collection, disposal or wiping activities commence. Each state and territory may have additional regulatory guidance on collection, storage and disposal of wastewater.
2. Mop heads should be disposed of after initial cleanup, unless otherwise advised by Environmental office personnel. Note: thorough cleaning of mop heads may be sufficient enough to reuse on future Armory cleanups but check with local Environmental Office.
3. Disposable gloves should be treated as hazardous waste.
4. Soiled cotton rags should be treated as hazardous waste.
5. Wash water contaminated with Lead can be collected and allowed to slowly evaporate leaving Lead deposits/sludge that may be collected in plastic containers, placed in metal drums, and stored for future delivery to an authorized hazardous waste disposal site.

3. Wet wipe, with cotton rags or sponge, any horizontal, diagonal or vertical surfaces up six (6) feet from floor surfaces using hot water and "Spic-n-Span" or an equivalent product.
 - a. Rinse out cleaning cloths thoroughly and frequently.
 - b. Change out cleaning water as necessary.

NOTE: If walls to be cleaned show signs of deterioration, e.g., chipping or crumbling paint, in which wiping, scrubbing, or disrupting might potentially increase or spread contamination, then this portion of the clean up should be avoided.

4. Now prepare water and detergent (e.g. Spic N Span, Mr. Clean, Pine Sol) for the mopping phase, according to manufactures recommendations, which should be found on the products label for general clean up.
 - a. Change out water frequently (when water appears dirty)
 - b. Rinse out mop heads frequently to prevent contamination of dirty water.
5. Cover entire drill floor surface with above prescribed water and detergent.
6. Final rinse should be with clean water only - -after mop heads have been cleaned.

Recommended Follow-up Housekeeping Practices *after Clearance sampling of cleaned area is performed by certified personnel:*

1. Floor cleaning and dusting should be accomplished using the wet method described in Initial Armory Cleanup SOP.

Note: Only exception to these wet cleaning procedures would be the use of a chemically treated dust floor mop. This can be used for follow-up armory cleaning by sweeping of large particles of dirt and paper.

- a. Pre-treated (chemically treated) dust floor mop will limit dust particles from being disbursed into the surround atmosphere.

- b. If treated dust mop is used - -Do Not Shake Mop head - - have mop head laundered after use. **Always keep used dust mop heads in sealed double plastic bags when stored at armory/facility.** Shaking of mop head could release unwanted contaminants into surrounding atmosphere.
2. Frequency of Cleanup- Armories will vary, according to usage and how often they should be cleaned. The following general cleaning schedule is provided:
- a. Only full-time technicians and traditional soldiers using facility during the month. (*Cleaned Monthly*)
 - b. Occasional activities taking place during the month, e.g., 1-2 classes or volleyball games, etc. (*Cleaned 2x's Monthly*)
 - c. Used regularly by soldiers or outside agencies/personnel. (*Cleaned Regularly - -at least Weekly*)

NOTE: Armories with adjoining Indoor Firing Ranges (IFR) should be cleaned more than weekly, again depending on use of Armory and IFR.

NOTE: Clearance sampling/testing is to be accomplished by certified personnel after these cleanup procedures are followed. If the area is an average Armory, occupied by adults only, for which you are cleaning and **is not a Converted IFR space**, you may continue to utilize the Armory space before the officials re-test this space. Please notify your Safety and/or Occupational Health personnel of the completion of this cleaning regime and they will notify the proper officials of the sampling/testing requirements needed.

If work is contracted out, a third party should do the clearance sampling.

Young children and females who are pregnant, there should be posted signs on all facilities, warning of the potential danger of exposure to lead dust.

UTAH ARMY NATIONAL GUARD

OGDEN ARMORY

625 East 5300 South St.
Ogden, UT 84402
(801) 476 3808



Submitted to:

Non-Responsive

National Guard Bureau
Southwest Region Industrial Hygiene Office
10510 Superfortress Avenue
Suite C
Mather, CA 95655

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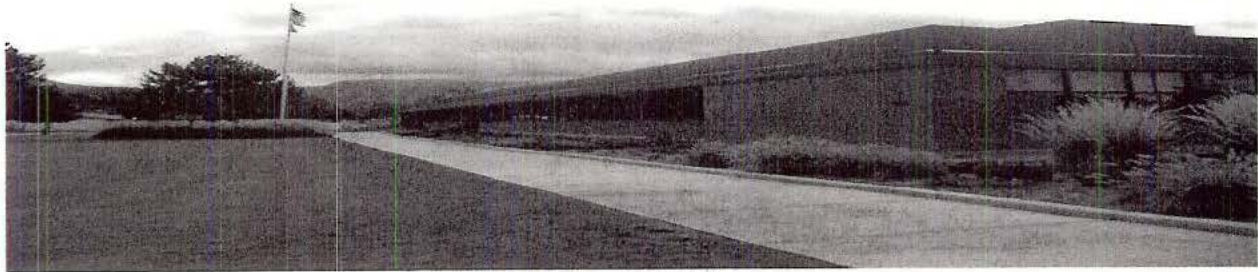
- 1.0 Introduction and Background
- 2.0 Survey Procedures and Equipment Used
- 3.0 Findings and Recommendations
 - 3.1 Lead Wipe Sampling
 - 3.2 Asbestos Survey
 - 3.3 Indoor Air Quality and HVAC Systems
 - 3.4 Exhaust and Ventilation Systems
 - 3.5 Hazardous Materials Use and Storage
 - 3.6 Physical Safety and Condition of Facility
 - 3.7 Sound Level Survey
 - 3.8 Illumination Survey
 - 3.9 Safety Policies, Training, and Record Keeping
 - 3.10 Recurring event
- 4.0 Industrial Hygienist Certification and Project limitations
- 5.0 Technical Assistance

Appendices

Appendix A	References
Appendix B	Assessment Criteria
Appendix C	Photograph Log
Appendix D	Floor Plans / Illumination Survey
Appendix E	Lab Analysis / Sampling Location & Log
Appendix F	ARNG Armory Survey Checklist
Appendix G	Chemical List
Appendix H	Recommendations
Appendix I	Violation Inventory Log

Aloha World

INDUSTRIAL HYGIENE ASSISTANCE VISIT OGDEN ARMORY OGDEN, UTAH



1.0. Introduction and Background

1.1. This report summarizes the results of the Industrial Hygiene (IH) Survey conducted at the Ogden Armory in Ogden, UT on October 1, 2014. The Army National Guard of Industrial Hygiene Southwest Regional Manager (ARNG-IHSW) requested Aloha World to visit the Ogden Armory to evaluate ventilation, lighting, noise, and verify vehicle and hazardous materials inventories. The IH Survey also included an interview with **Non-Responsive** regarding industrial hygiene, OSHA training compliance, personnel Federal Employees Compensation Act (FECA) claims, as well as safety standards in the work area. Finally, the IH Assessment included the development of employee profiles as baseline administrative occupational health records for employees. **Non-Responsive** from Aloha World completed this survey.

1.2. The following sections will provide details on how the IH Survey was conducted. A drawing showing the facility layout and sampling locations is included as **Attachment E**. The most stringent OSHA, ARNG, Corps of Engineers (COE), American National Standards Institute (ANSI), American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) and Design Guide standards in effect at the time of the survey were used to assess the workplace.

1.3. The Ogden Armory supports the RSP recruits, Funeral Honors and the 19th Special Forces-group support battalion. The Armory has thirty full time guard members and approximately 250-300 guardsmen and women on drill weekend. This armory was constructed in 1968 and was renovated in 2011. The armory has offices used for administrative purposes and also contains a drill floor, arms room, supply room, classroom and storage.

Aloha World

There is a Converted Indoor Firing Range (CIFR) in the basement of this facility. The CIFR is now the vault with storage cages lined against the North wall. Weapons are cleaned in the vault. Vehicle maintenance is done at FMS 1, located across the parking lot from the Ogden Armory.

2.0. Survey Procedures

2.1. Lead wipe samples were collected on dusty horizontal floor surfaces in the facility including but not limited to the drill hall floor and vault/storage, CIFR. "Ghost Wipe" brand wipes were used with a 16 square inch template. The wipes used conform to American Standards for Testing Materials E1792-96A, *Standard Specification for Wipe Sampling Materials for Lead in Surface Dust*. The collected wipe samples were placed in clean, labeled centrifuge tubes. Samples were submitted to Reservoir Environmental Services, Inc for analysis via Flame Atomic Absorption, USEPA Method SW846 3050B. Laboratory results are listed in micrograms of lead per square foot ($\mu\text{g}/\text{ft}^2$). Copies of the raw analytical data are presented in **Appendix E**.

A visual inspection of materials utilized in this 1968 constructed building was performed. All accessible areas of the facility were visually inspected to identify suspect asbestos-containing materials (ACM).

Illumination measurements were taken in several areas of this facility using an ExTech Light Meter, Model EA 31. Measurements in the office and classroom areas were taken at typical work locations, such as the tops of desks and near computer workstations.

Exhaust ventilation was measured on the industrial kitchen hood.

Equipment Used

Type	Model Number	Serial Number	Calibration Date
VelociCalc	8386A	54110581	March, 2014

Type	Model Number	Serial Number	Calibration Date
Extech Light Meter	EA31	Z301903	September 2013

3.0. Findings and Recommendations

Lead wipe sampling- Analytical results from the lead wipe sampling obtained from this facility are found in Table 3.1.A. A graphical and written representation of sampling locations can be found in Appendix E along with analytical reports. Photographs were taken of each sample point and are presented in Appendix C. There are currently no standards that dictate what a safe level of lead is from a wipe sample. Lead sampling results can be compared to the protocol outlined in the U.S. Department of Housing and Urban Development's (HUD's) *Guidelines For The Evaluation And Control Of Lead-Based Paint Hazards In Housing*, June 1997. HUD currently recommends an exposure limit of $40 \mu\text{g}/\text{ft}^2$. This guideline was established to prevent lead exposure to children in domestic homes, along with females who are pregnant. Areas that

Aloha World

BEST AVAILABLE COPY
Industrial Hygiene Survey
Ogden Armory

have levels that exceed 40 ug/ft² should be thoroughly cleaned and employees that may come into contact with those areas should be properly trained in the hazards of lead exposure.

**Lead Wipe
Table 3.1.A.**

<i>Sample ID</i>	<i>AREA</i>	<i>Photo #</i>	<i>Result ug/ft2</i>
100214-1	Control	NA	BDL
100214-2	North drill hall	2	BDL
100214-3	Center drill hall	3	BDL
100214-4	South drill hall	4	BDL
100214-5	West drill hall	5	BDL
100214-6	East drill hall	6	BDL
100214-7	North CFR	7	81.8
100214-8	Center CFR	8	161
100214-9	South CFR	9	197
100214-10	West CFR	10	245
100214-11	East CFR	11	154

BDL= Below Detection Limits

ug/ ft2= Micrograms per Square Foot

NOTE: Please continue the cleaning of the working environment throughout this facility, especially in the vault. Please utilize the attached SOP and general information paper provided for cleaning procedures.

Recommendation: Dry sweeping should be restricted in areas where accumulations of dust are present to prevent toxic metals on surfaces from becoming airborne. The cleaning of loose material from horizontal surfaces should be conducted with HEPA (High Efficiency Particulate Air) vacuums and/or wet mopping/cleaning method. Any area that exceeds 40 ug/ft² should be thoroughly decontaminated. Clean vault/storage area after every episode of cleaning weapons to help prevent migration of this heavy metal.

3.2. Asbestos Survey- Non-Responsive was asked during this survey about the presence of asbestos and he advised tile containing asbestos was removed 6 years ago. It was tested for asbestos again in 2011, prior to renovations. However, none was found.

All accessible areas of the facility were visually inspected to identify suspect ACM. All accessible surfaces, structures, and mechanical systems within these areas were examined and all suspected ACM was inspected to determine friability. No bulk samples were taken during this survey period.

Asbestos is regulated as a hazardous air pollutant by the Environmental Protection Agency (EPA) under the authority of the Clean Air Act. The asbestos regulations are included in the National Emissions Standards for Hazardous Air Pollutants (NESHAPS) and are referenced as 40 CFR 61, Subpart M.

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ACM is defined by the EPA, as any material containing greater than one percent of asbestos. ACMs are categorized as being either friable or non-friable. Friable ACMs are those materials that can be easily crumbled, pulverized, or otherwise broken up using hand or finger pressure when dry, and are materials considered more likely to produce airborne asbestos fibers. Non-friable ACMs are materials that do not meet the above test, and are considered less likely to produce airborne asbestos fibers. Non-friable ACMs are further categorized into Category I non-friable ACM (packing's, gaskets, resilient floor coverings, and asphalt roofing products) and Category II non-friable ACM (materials not included in Category I).

Limitations and Exclusions of Findings

This asbestos survey and assessment was performed using procedures and a level of diligence typically exercised by professional performing similar services. However, asbestos-containing material (ACM) can be present in a structure, but not identified using ordinary investigative procedures.

No asbestos survey can completely eliminate uncertainty regarding the presence of ACM. The level of diligence and investigative procedures are intended to reduce, but not eliminate, potential uncertainty regarding the presence of ACM.

The only way to tell if an object contains asbestos by looking at it is if the material is labeled. Otherwise, you should have it sampled and analyzed by a qualified professional. Until you receive the results, treat the material as if it contains asbestos. Samples should be extracted only by qualified professionals. If improperly done, extracting samples can be more hazardous than leaving the material undisturbed.

Recommendation: Conduct a facility survey to identify Asbestos Containing Material (ACM) within the facility and develop ACM Management Plan. Conduct awareness training to all personnel who occupy the facility regarding the findings and the ACM Management Plan. The survey may have been completed, however, at the time of this assistance visit awareness training, ACM identification, or an ACM Management Plan was not available. 29 CFR 1910.1001

3.3 Indoor air quality and HVAC Systems- The armory is heated and cooled through a central air system. This system was replaced in 2011. The DCFM, state of Utah, maintains the HVAC system.

Building air temperature, within this facility, was in the comfort range for the occupants during this survey period. The day of the survey it was 58 degrees Fahrenheit outside. Inside air temperature is recommended to be between 68-75 degrees Fahrenheit and the relative humidity is to range from 30-60%. The indoor temperature was 70-72 degrees Fahrenheit. Humidity levels above 60 percent can result in proliferation of bacteria and fungi, while levels below 30 percent can cause dry eyes, skin, and mucous membranes. There were no signs of water leakage. However, there was leaking in the roof. It was fixed in 2012 and no signs of water damage have been noted since.

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3.4. Exhaust and Ventilation Systems- The Ogden Armory does not have a maintenance bay. All vehicle maintenance is done at FMS 1, located adjacent to the Armory.

Air exhaust flow was measured in the industrial kitchen under the hood of the oven. Air flow was measured at 726 fpm. This kitchen exhaust duct meets the 2011 National Fire Protection Association Standard 96, Section 8.2.1.1, which requires exhaust fan ducts used in commercial cooking equipment to have a duct velocity of not less than 500 fpm.

3.5. Hazard Communication & Hazardous Materials Use and Storage- All Hazmat and POL's are stored and maintained in a flammable locker located in the drill hall. Initial HazCom and annual training is kept on file for employees. Chemicals for equipment maintenance and janitorial uses are maintained at the facility in minimal quantities. A master chemical inventory listing for the facility is maintained in the Readiness NCO's office. A copy of this list can be found in Appendix G. The SDS file is still listed as MSDS since the Globally Harmonized System (GHS) Classification of Labeling Chemicals has just taken effect this year and the documents are still MSDS documents.

Small quantities of cleaning products, utilized by the workers, were located in the janitors' closet. Arms custodians, for cleaning purposes, should be utilizing user and environmental friendly products, while the more harmful products should be properly disposed of. A well-ventilated area should be utilized when using any solvent products, along with the appropriate Personal Protective Equipment (PPE) as designated on the MSDS information sheets. The MSDS was very well organized and products were easily found alphabetically.

Recommendation: Update all MSDS for the facility with the new SDS format by June 2016 CFR 1910.120.

3.6. Physical Safety and Condition of Facility- A physical walk through of the facility was conducted. Overall, housekeeping was found to be in above average condition. Electrical breaker boxes were properly labeled and accessible. According to Non-Responsive the wiring was put in improperly during the 2011 renovation by the state. The Army National Guard is in the process of fixing the wiring.

The fire extinguishers within this facility are part of the fire suppression available and should be tested annually and inspected monthly. NFPA 10, 27-3.4.1 addresses alarm systems and 29 CFR 1910.157 addresses inspection requirements for fire extinguishers. Annual inspections should be accomplished by a qualified organization, e.g., fire department, and checked and documented monthly by the facilities personnel. The fire extinguishers were found to be up to date on annual and monthly inspections.

3.7. Sound Level Survey- A noise survey was not conducted in this facility. No noise hazards were noted in the facility.

3.8. Illumination Survey- Illumination levels that were measured throughout this facilities office and classroom areas can be found on the floor plan in Appendix D. The numbers

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represent the illumination level in foot-candles (FC). In general, the measurements were taken at task surface level, such as on desks. Measurements not taken on a desk were taken at waist level.

Illumination measurements were compared with recommendations made by the Industrial Engineering Society (IES)/American National Standards Institute (ANSI) RP7-1991. In general, IES recommends a range of **50 to 100 foot-candles** as the minimum lighting requirements for performance of visual tasks of medium contrast or small size, such as would typically occur in an office area.

Based on these criteria, the general lighting appears to be adequate in all of the office spaces and classroom. Inadequate light levels may place strain on the eyes and cause headaches or vision problems. With an aging work force in place, task lighting can help reduce the vision problems associated with inadequate lighting.

3.9. Safety Policies, Training, and Record Keeping – All safety classes are taken at FMS 1.

4.0 Industrial Hygienist Certification and Project Limitations

All Industrial Hygiene Assessment techniques and tests used in the Industrial Hygiene survey of the Army National Guard facilities were reviewed by **Non-Responsive**, Industrial Hygiene Southwest, National Guard Bureau at (916) 854-1492.

This Project was performed using, as a minimum, practices consistent with standards acceptable within the industry at this time, and a level of diligence typically exercised by industrial hygiene and environmental consultants performing similar services.

The procedures used in this investigation attempt to establish a balance between the competing goals of limiting investigative and reporting costs and time, and reducing the uncertainty about unknown conditions. Therefore, because the findings of this report were derived from the scope, costs, time, and other limitations, the conclusions should not be construed as a guarantee that all environmental or occupational hazards have been identified and fully evaluated. Where sample collection and testing have been performed, Aloha World's professional opinions are based in part on the interpretation of data from discrete sampling locations that may not represent conditions at non-sampled locations. Aloha World assumes no responsibility for omissions or errors resulting from inaccurate information or data provided by sources outside of Aloha World, or from omissions or errors in public records.

Furthermore, it is emphasized that the final decision on how much risk to accept always remains with the client since Aloha World is not in a position to fully understand all of the client's needs.

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Clients with a greater aversion to risk may want to take additional actions while others, with less aversion to risk, may want to take no further action.

5.0 Technical Assistance

For technical assistance regarding information found in this report or the performed survey, please contact **Non-Responsive** of the Southwest Regional Industrial Hygiene Office-(916) 854 1492. Contact the State Safety, State Industrial Hygiene and Occupational Health Office and/or the Regional Industrial Hygienist, should any of the operations change, or should the personnel become incapable of following the previous recommendations and subsequent recommendations that are needed.

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Appendix A: References

American Conference of Governmental Industrial Hygienists (ACGIH), Industrial Ventilation, A Manual of Recommended Practice, 23 Edition, 1998.

American Conference of Governmental Industrial Hygienists (ACGIH), Threshold Limit Values for Chemical Substances and Physical Agents and Biological Indices for 1998.

American National Standards Institute (ANSI)/Illuminating Engineering Society (IES), Industrial Lighting 1991.

American National Standards Institute, Z358. 1-1998. Emergency Eyewash and Shower Equipment 1998.

AR 40-5, Preventative Medicine, 15 October 1990.

AR 385-10, The Army Safety Program, 23 May 1988.

Corps of Engineers Guide Specification, CEGS-1585 1, Overhead vehicle tailpipe (and welding fume) Exhaust Systems, May 1984.

DA PAM 40-ERG, Ergonomics

DA PAM 40-501, Hearing Conservation, 27 August 1991.

National Safety Council, Fundamentals of Industrial Hygiene, 4~ edition, 1996.

NOR 385-10, Army National Guard Safety and Occupational Health Program, 29 December 1989.

TB MED 503, The Army Industrial Hygiene Program, February 1985.

TG022, US Army Environmental Hygiene Agency (USAEHA), Industrial Hygiene Evaluation Guide, October 1975

TG 141, US Army for Health Promotion and Preventive Medicine (USACHPPM) Industrial Hygiene Air Sampling Guide, Nov. 1997

Title 29, Code of Federal Regulations (CFR), 1998, revision Part 1910, Occupational Safety and Health Standards

Title 29, Code of Federal Regulations (CFR), 1998, revision Part 1926, Construction Standards

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Appendix B: Assessment Criteria

A. Ventilation Standards

Ventilation rates were compared to recommendations made in the ACGIH Industrial Ventilation Manual and Corps of Engineers specifications. See Appendix A for reference information.

B. Illumination Standards

Illumination measurements were compared with recommendations made by the Industrial Engineering Society (IES)/American National Standards Institute (ANSI) RP7-1991 Standard and MIL-STD1472E.

C. Noise

Noise measurements were taken and compared with OSHA Standard 29 CFR 1910.95 and Department of the Army Pamphlet 40-501.

D. Air Sampling

Personal air sampling, if conducted, was in compliance with applicable NIOSH Analytical Methods. Sampling results were compared to relevant Occupational Safety and Health Administration (OSHA) Permissible Exposure Limits (PEL), American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLV), or National Institute of Occupational Safety and Health (NIOSH) Recommended Exposure Limits (REL).

E. Risk Assessment Codes

Risk Assessment Codes (RACs) are included in this report to quantify the risk of particular operations to employees and to establish funding priorities for corrective actions. RACs are assigned with regard to hazard severity and mishap probability. The type, length, and route of exposure are taken into consideration, as are the medical effects that would occur with such exposures.

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Appendix C

Photograph Log

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Photo Log

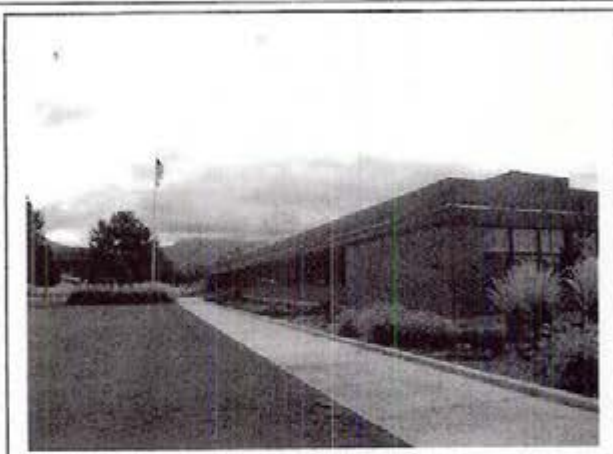


Photo #1 – Ogden Armory

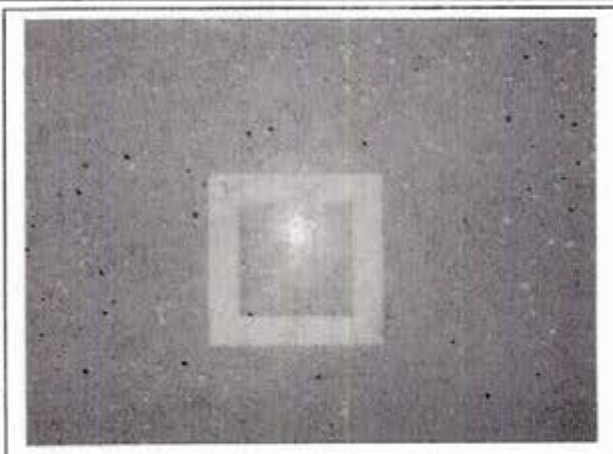


Photo #2- North drill hall wipe

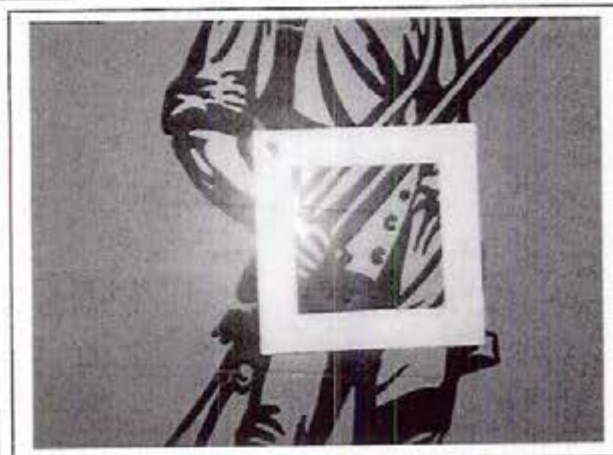


Photo #3- Center drill hall wipe

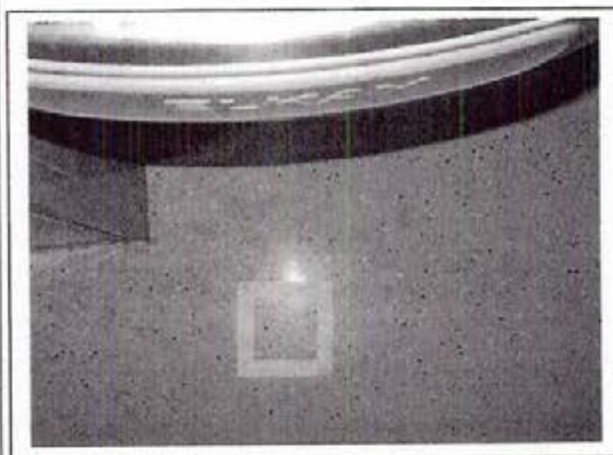


Photo #4- South drill hall wipe

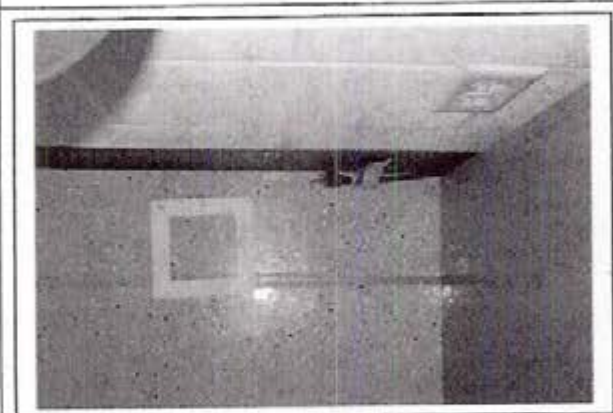


Photo #5 –West drill hall wipe

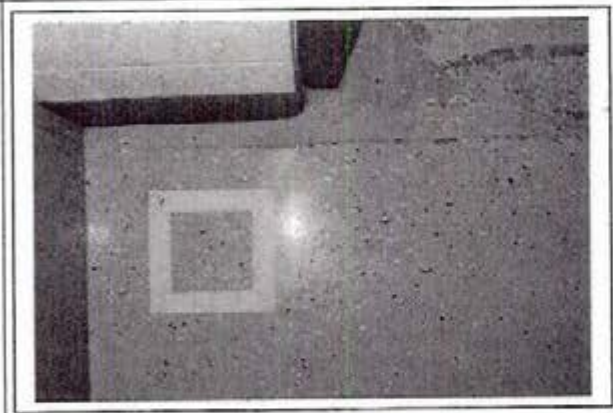


Photo #6 – East drill hall wipe

Photo Log

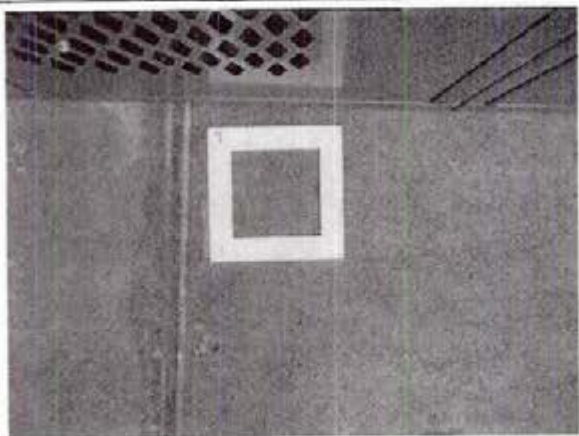


Photo #7 – North CIFR wipe

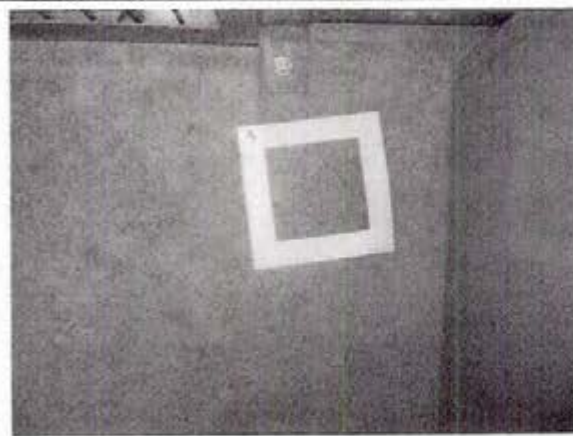


Photo #8- Center CIFR wipe

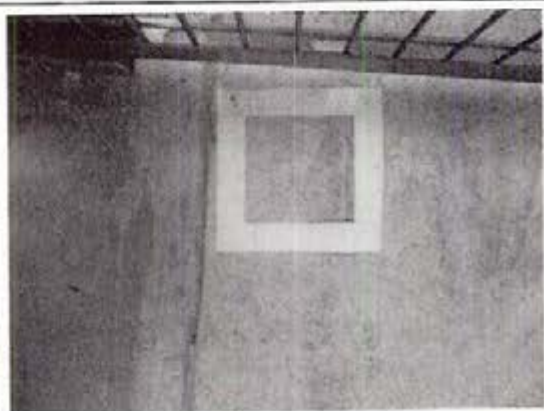


Photo #9 – South CIFR wipe

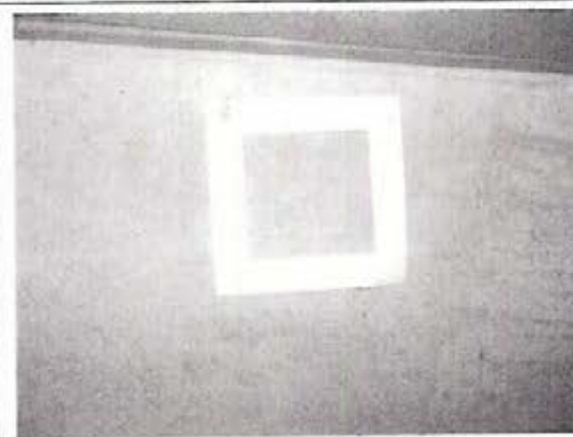


Photo #10 – West CIFR wipe

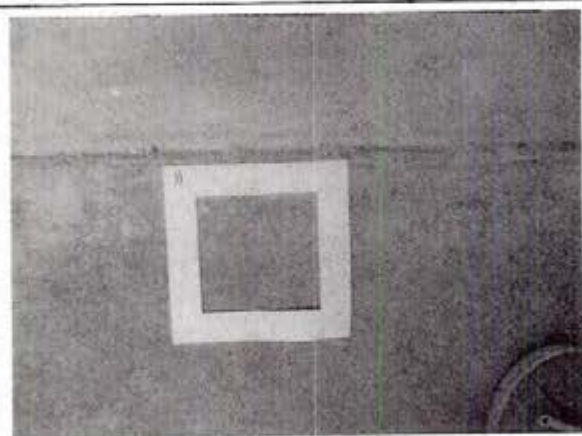


Photo #11 –East CIFR wipe



Photo #12 –CIFR

Photo Log



Photo #13 – Janitorial closet

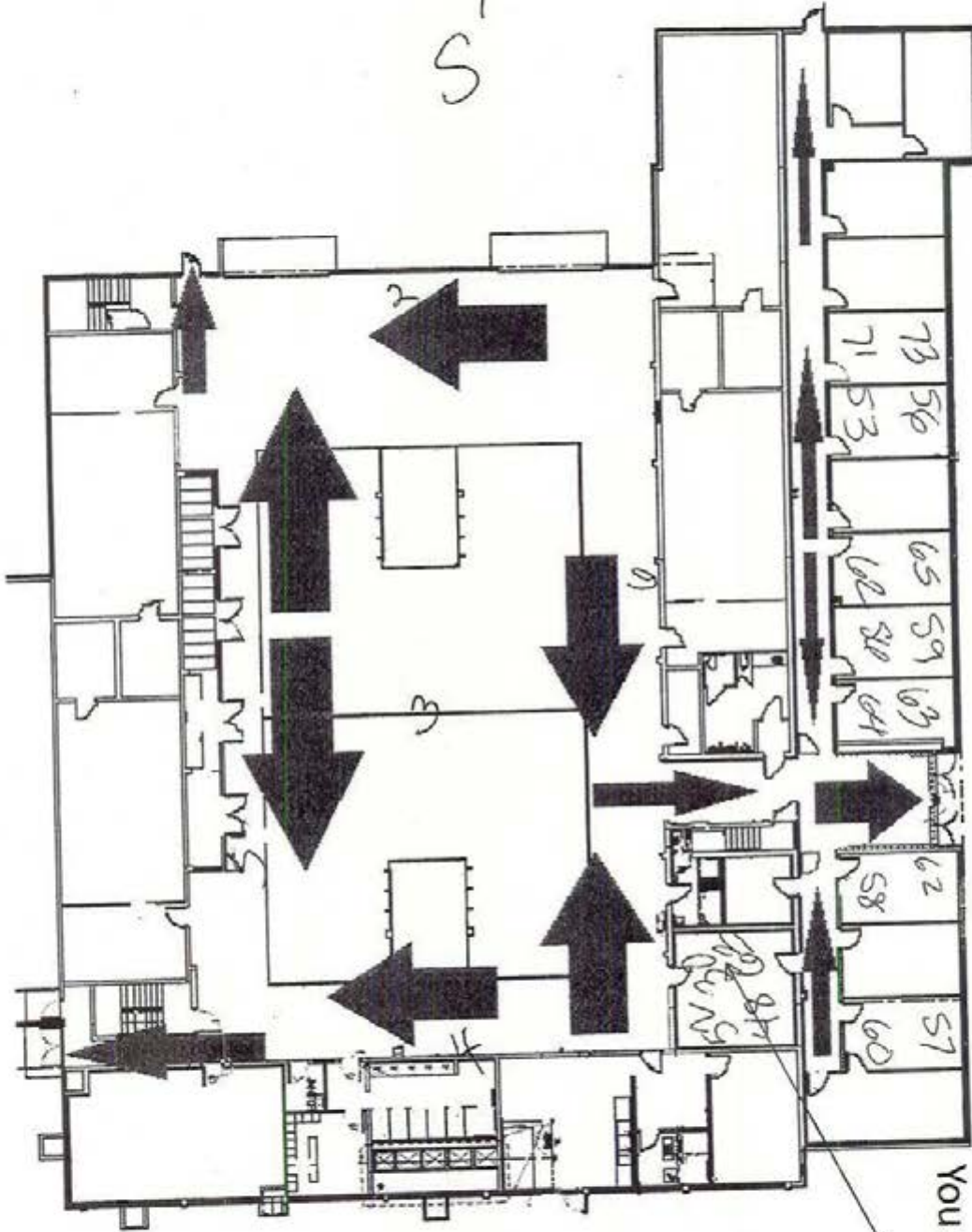
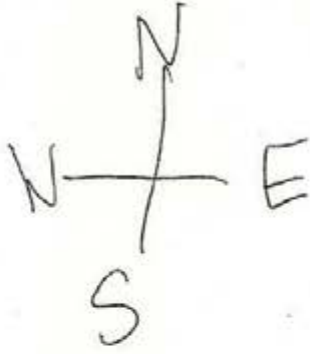


Photo #14- Drill Hall

Appendix D

Floor Plan/Illumination Survey

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Appendix E

Laboratory Analysis Reports Sample Location & Log

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RESERVOIRS ENVIRONMENTAL, INC.

5801 Logan St., Suite 100

Denver CO 80216

TABLE ANALYSIS: LEAD BY WIPE SAMPLING

RES Job Number: **RES 302221-1**
Client: **Aloha World**
Client Project Number / P.O.: **100214**
Client Project Description: **Ogden Armory**
Date Samples Received: **October 4, 2014**
Analysis Type: **USEPA SW846 3050B / AA (7420)**
Turnaround: **3-5 Day**
Date Samples Analyzed: **October 13, 2014**

Client ID Number	Lab ID Number	Sample Area (sq.ft.)	LEAD (µg)	Reporting Limit (µg/ft ²)	LEAD CONCENTRATION (µg/ft ²)
100214-1	EM 1270416	0.11	BRL	22.7	BRL
100214-2	EM 1270417	0.11	BRL	22.7	BRL
100214-3	EM 1270418	0.11	BRL	22.7	BRL
100214-4	EM 1270419	0.11	BRL	22.7	BRL
100214-5	EM 1270420	0.11	BRL	22.7	BRL
100214-6	EM 1270421	0.11	BRL	22.7	BRL
100214-7	EM 1270422	0.11	9.0	22.7	81.8
100214-8	EM 1270423	0.11	17.7	22.7	161
100214-9	EM 1270424	0.11	21.7	22.7	197
100214-10	EM 1270425	0.11	26.9	22.7	245
100214-11	EM 1270426	0.11	16.9	22.7	154

*Calculations Based On A 1 sq.ft. Sample Area Unless Otherwise Noted

* Unless otherwise noted all quality control samples performed within specifications established by the laboratory.

BRL = Below Reporting Limit

P: 303-964-1986
F: 303-477-4275

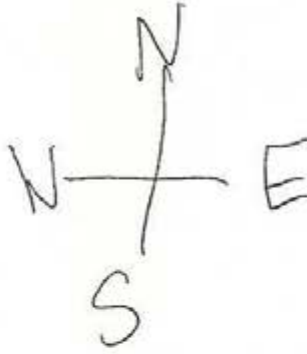
5801 Logan Street, Suite 100 Denver, CO 80216

Page 2 of 2
BEST AVAILABLE COPY

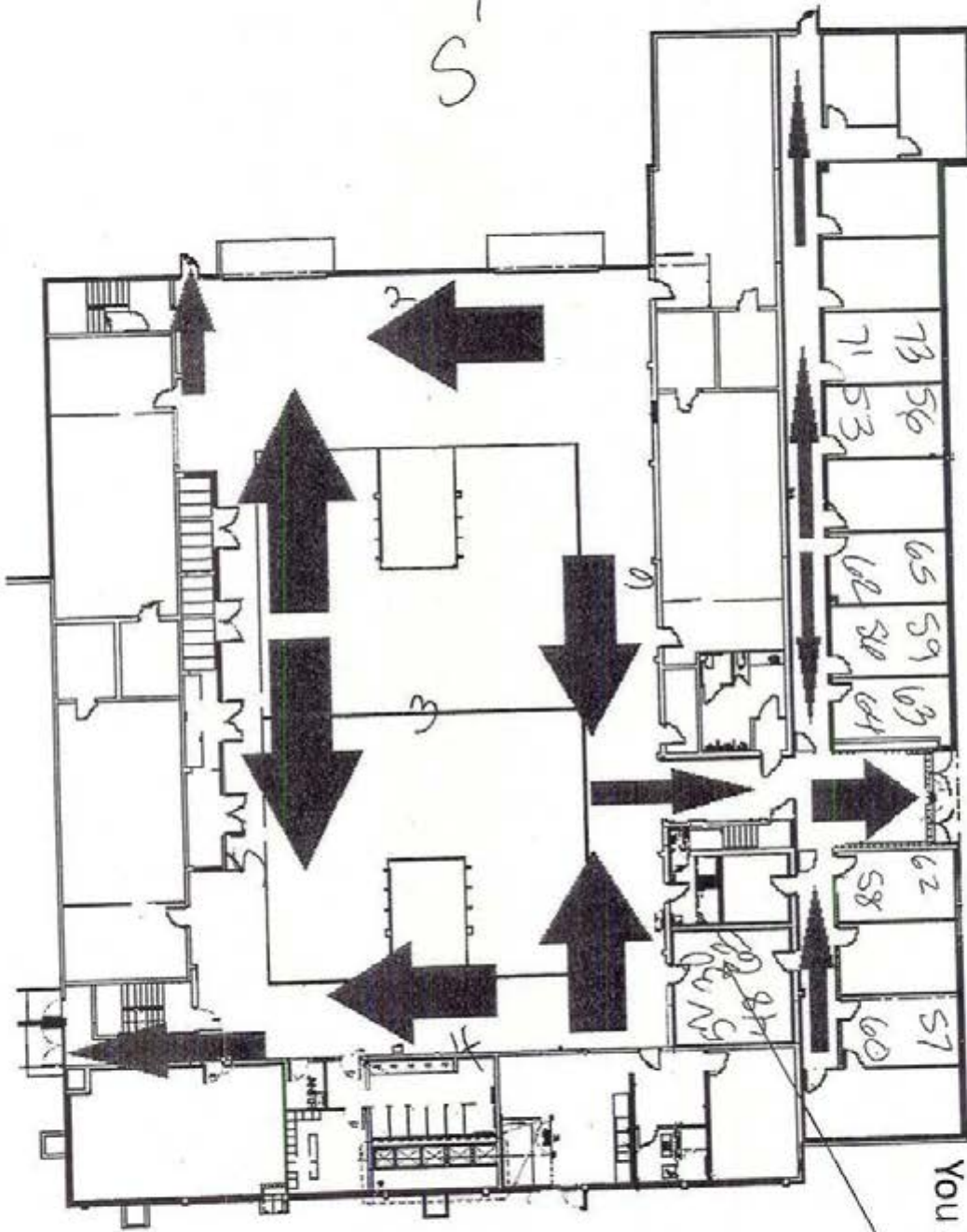
Posted to NGB FOIA Reading Room
May, 2018

FOIA Requested Record #J-15-0085 (UT)
Released by National Guard Bureau
Page 1118 of 1683

Non-Responsive



conference
 18 52 62 56 58 55 58 54
 conference



Appendix F

ARNG Survey Checklist

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Army National Guard Armory Survey (To Be Included In Report)

Five lead wipe samples collected from drill floor (take samples from dusty horizontal floor surfaces)	✓
Are any weapons cleaned in the facility, if yes where are they cleaned?	yes - vault
Additional lead wipe samples taken from 25% of the rest of the building - (on floor areas only)	✓
Is there a converted indoor firing range? If so collect additional wipe samples IAW the SOW.	yes - basement vault
Is there any peeling paint? Take bulk sample if able.	no -
Are there any signs of water damage or mold?	- 2013 - fixed
Any suspected ACM? Where and what condition is it in. Bulk sample if able.	removed asbestos tile 6 yrs retested
Quality of housekeeping	good
HVAC maintenance plan in place?	yes
Overall condition of HVAC system	↳ DFCM good
Obtained CO2, Temp, RH monitoring	good
HAZMAT inventory on hand (make copies for the report), MSDS available for all materials.	owned FMS # 1
HAZMAT storage, Condition of lockers, if outside storage building is used is it ventilated and does it meet OSHA standards.	✓ table of contents

Fire alarm in working condition - -not usually in place in older armories	good
Fire extinguishers in place and properly identified and mounted	yes
Evidence of monthly fire extinguisher inspections	yes
Annual fire extinguisher inspections tags current	yes
Are eye wash stations available in areas where hazardous materials are used and are they inspected weekly (inspections must be documented)	in gym - not
Egress routes accessible and properly marked - -noted on <u>Fire Evacuation Plan</u>	yes.
Training programs in place; Hazcom, Respiratory Protection, Confined Spaces, Hearing conservation, PPE (if applicable)	none
Any Photo labs	no
Any hazardous noise sources	n/a
Light levels checked throughout building	✓
Breaker panels properly labeled with no exposed wiring	✓
Check building occupancy 1. How many military personnel, how many civilian personnel 2. What types of units occupy facility, i.e. Administrative, Maintenance, etc.?	
Any civilian activities in armory (cub scouts, classes, day care, parties etc)	yes
Obtain two lead air samples	On IHSW Request Only

Evaluate Kitchen Stove Hood Flow if Present IAW NFPA Standard 96.	✓
Collect Source Noise Measurements of Kitchen Appliances and Document Using DD 2214	n/a
Conduct a safety walkthrough of entire facility document any safety deficiencies found.	✓
Take photos of outside of building, all sample points and any pertinent hazards or concerns.	✓
Name of Armory, POC, phone #, address and organizations in Armory	Ogden Armory 625 East 5300 South Ogden, UT 84402
(Add Checklist to Report)	(Add Checklist to Report)

Appendix I

Violation Inventory Log

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Industrial Hygiene Southwest

Violation Inventory Log

LOG OF SCHEDULE OF CORRECTIVE ACTION - COMPLIANCE WITH SAFETY AND HEALTH STANDARDS

OGDEN ARMORY, UTAH 84402

CONTROL NUMBER	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/NCOIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
CLOSED <input checked="" type="checkbox"/> UTOA-10012014-3.1	Lead levels exceeded the minimum requirements.	Armory	3	Upgrade housekeeping practices throughout this facility to help prevent migration of lead dust. Thoroughly clean areas identified during this SAV that are above 40 ug/ft of lead dust. Utilize Armory Clean-up SOP during cleaning episodes. After cleaning weapons, the area should be cleaned to help prevent migration of heavy metals.					Occupational Safety and Health Administration (OSHA) standard for lead: 1910.1025 (h)(1)
UTOA-10012014-3.2	There was no Asbestos Management plan in place.	Armory	3	Conduct a facility survey to identify Asbestos Containing Material (ACM) within the facility and develop ACM Management Plan. Conduct awareness training to all personnel who occupy the facility regarding the finding and the ACM Management Plan. The survey may have been completed, however, at the time of this assistance visit, awareness training, ACM identification, or an ACM Management Plan was not available.					29 CFR 1910.1001
UTOA-10012014-3.5 <input type="checkbox"/>	The SDS file is still listed as MSDS since the Globally Harmonized System (GHS) Classification of Labeling Chemicals has just taken effect this year and the documents are still MSDS documents.	Armory	4	Update all MSDS for the facility with the new SDS format by June 2016					(CFR 1910.120)

1 OCT 14



**ARMY NATIONAL GUARD
INDUSTRIAL HYGIENE - SOUTHWEST**

Guam • Hawaii • California • Oregon • Washington • Nevada • Arizona • Idaho • Utah • Wyoming • Montana • New Mexico • Nebraska

**Industrial Hygiene Site
Assistance Visit**

**Ogden Armory - Indoor Firing Range
(IFR)**

**625 East 5300 South Street
Ogden, UT 84402**

10510 Superfortress Avenue, Suite C, Mather, CA 95655

(916) 854-1494

Industrial Hygiene Southwest's mission is to ensure all military personnel and military leadership is provided the specialized technical expertise, consultation and assistance to ensure all military operations and processes are conducted in a healthy manner

10510 Superfortress Avenue, Suite C, Mather, CA 95655 (916) 854-1494



DEPARTMENT OF THE ARMY AND AIRFORCE
NATIONAL GUARD BUREAU
INDUSTRIAL HYGIENE SOUTHWEST
10510 Superfortress Ave, Ste. C
Mather, CA 95655

27 SEP 2015

ARNG-CSG-P

MEMORANDUM THRU Utah Army National Guard, ATTN: **Non-Responsive** 12953 S. Minuteman Dr., Draper, UT 84020

FOR Commander, Ogden Armory Indoor Firing Range (IFR), 625 East 5300 South Street, Ogden, UT 84402

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for Ogden Armory Indoor Firing Range (IFR), 625 East 5300 South Street, Ogden, UT 84402, conducted on 01 OCT 2014

1. References. See survey report.

2. General.

a. At the request of the NGB Industrial Hygiene, Southwest (IHSW) Region, an IHSAV was conducted at the Ogden Armory Indoor Firing Range (IFR), 625 East 5300 South Street, Ogden, UT 84402 conducted on 01 OCT 2014.

b. The findings and recommendations in this Executive Summary are controlling and supersede all recommendations within the attached Industrial Hygienist report. However, IHSW concurs with the observations and findings within the attached Industrial Hygiene report.

c. Risk Assessment Codes (RAC) provided in this report have been derived from two sources: Deriving Risk Assessment Codes (RAC's) for Health Hazards (Ref: DOD Instruction 6055.1) and AR 385-10, The Army Safety Program.

d. Use of trademark names in the attached report, or this Executive Summary, does not imply Army National Guard endorsement of any product.

3. Findings. See survey report.

4. Observations / Recommendations.

NOTE: This section provides conclusions and recommendations for the findings and observations made within the attached contractors report. The paragraphs are numbered to correspond to the sections where they were first noted. (i.e., paragraph 2.1a represents the 2.1a located within the contractors report.

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for Ogden Armory Indoor Firing Range (IFR) 625 East 5300 South Street, Ogden, UT 84402, conducted on 01 OCT 2014

a. The observations made during this site visit indicate there were efforts to convert the facility space designed as an IFR for other uses. However, the wipe sampling collected from within the IFR space returned with elevated ($> 40 \text{ ug/ft}^2$) lead level results. Although the lead levels reported are comparatively low to other like spaces observed within the IHSW Region, they do raise concerns regarding origin, depth, and scope for lead levels throughout the other areas of the facility as it relates to elevated lead levels. **(RAC 2)**

(1) Recommend conducting a Holistic Lead Evaluation of facility to properly and clearly identify the lead impact. This evaluation will provide the command with a clear assessment of areas that potentially could impact the facility and occupants. During this opportunity Hazard Assessments (HA's) for processes involving facility maintenance and repair activities may be developed.

(a) IFR. - Determine status of IFR - Active, In-Active, Converted, Closed. Collect appropriate samples to identify lead levels and identify potential areas/systems that may impact other areas of facility and occupancies. Collect representative sampling of the IFR area.

(b) Source identification and confirmation. Evaluate facility and surrounding environment to validate and identify any and all potential lead sources, i.e. wipe, soil, and air sampling.

(c) HVAC and Air Handling Systems/Equipment. Evaluate Air Handling Equipment to determine lead levels and how elevated lead levels may impact facility, ventilation systems, and occupants. Collect wipe sampling from both upstream and downstream airflows of the air handling equipment to properly identify any elevated lead levels and provide corrective measures.

(d) Facility Air Handling Duct Systems. Evaluate facility air ducting through the collection of wipe sampling at supply and return registers within facility. Include wipe sampling from within duct systems to further clarify elevated lead levels.

(e) Exterior Roof Top areas. Evaluate roof top air handling systems and any ventilation systems identifying any potential lead particulate entry routes into the facility areas, collect representative roof top air and roof top wipe samples to verify lead levels.

(f) Non-Occupied Spaces.

(1) Above ceiling spaces. Evaluate and collect wipe samples of all crawl spaces, plenum areas, and above drop ceilings to determine lead levels and how elevated lead levels may impact facility and occupants.

(2) Below flooring. Evaluate below floor crawl spaces to determine lead levels and methods to remediate if necessary. If the facility does not have these spaces the final evaluation must indicate such.

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for Ogden Armory Indoor Firing Range (IFR) 625 East 5300 South Street, Ogden, UT 84402, conducted on 01 OCT 2014

(3) Plenum areas. Evaluate all plenum spaces to ensure a complete understanding for how these spaces were designed/used for air circulation. These may prove to significantly enhance lead migration throughout the facility.

(g) Occupancy Density and Occupancy Types. Identify owning unit by Unit Identification Code (UIC), co-tenant organizations (include UIC), status of ARNG personnel (AGR, TECH., IDT, State (maintenance), Contract, Civilian, Volunteer(s), youth programs, and any other activities conducted at facility.

(1) Based on occupancies observed, provide notifications and education – Personal Protective Equipment (PPE) usage requirements, routine cleaning methods (general housekeeping), measures personnel should take to protect their health (frequent washing (hands/clothes), eating, drinking, etc.) to all personnel.

(2) Recommend the State ARNG determine what Non-ARNG occupancies should be allowed to occupy or utilize the facility prior to the conclusion of the lead evaluation.

(h) Occupied spaces (wipe sampling and area air sampling). Collect representative wipe samples to identify elevated lead levels and identify any potential areas/systems that may impact other areas of facility and occupancies. This sampling regime should include air sample collection for all spaces persons may enter, to properly identify inhalation hazards.

(i) It is important for the State ARNG take a holistic approach to remove all potential and existing lead hazards from within this facility by treating/remediating all non-occupied, as well as occupied, areas of this facility.

(j) It is important for all remediation activities be followed by post-remediation sampling verification. Recommend an ARNG Industrial Hygiene resource be utilized to verify all post-remediation/cleaning activities and are completed IAW the AR, ARNG, and UT ARNG Scope of Work. This will ensure lead levels are acceptable for re-occupancy and all work has been conducted accordingly.

b. Occupant Notifications. It is important for the State ARNG make appropriate notifications to all occupants outlining the potential hazards, measures persons must take to ensure their health, and to outline the State ARNG's plan to remediate (abate), if necessary, the elevated lead levels within the facility as required by Federal, State, and local laws, regulations, and requirements. At the minimum, the following occupancy groups should be included within the notifications: AGR, IDT personnel, state employees, contract employees, youth program personnel, and all civilians. Note, the attached report may provide co-tenant organizations for inclusion of notifications. Documentation of notifications should be maintained by the facility command for future reference. (reference 29 CFR 1910.1025 as a resource guide)

c. It is important for UT ARNG to determine a classification of this IFR to properly implement the appropriate control measures for continued occupant health and to control lead surface contamination to "as clean as possible," i.e. 40ug/ft², throughout the non-IFR areas of the

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for Ogden Armory Indoor Firing Range (IFR) 625 East 5300 South Street, Ogden, UT 84402, conducted on 01 OCT 2014

facility. Also note, given the IFR status criteria below, the state should identify all IFR's within the state and determine a status for each. The following are provided:

(1) **Active IFR.** The range is continually used for normal small arms use as long as it is maintained IAW with the criteria outlined in NGR 385-15, Policy and Responsibilities for Inspection, Evaluation and Operation of Army National Guard Indoor Firing Ranges.

(2) **Inactive IFR.** The range is deactivated and maintained IAW criteria outlined in NGR 385-15, this allows the command to reopen to an Active IFR status to support future small arms usage.

(3) **Closed IFR.** The IFR is locked with no access and maintained as necessary IAW NGR 385-15. In a Closed status, the range must not be used for any occupancy or any storage. The Closed IFR must remain vacant of all activities until all remediation has been completed and the IFR remediation is certified "complete" by an ARNG Industrial Hygienist (OPM 0690 Series) resource.

(4) **Converted IFR.** The IFR is converted IAW NG Pam 420-15, Guidelines and Procedures for Rehabilitation and Conversion of Indoor Firing Ranges. It is important for the work to convert the IFR be certified by an ARNG Industrial Hygienist (OPM 0690 Series) resource and all supporting documentation to be retained for future reference.

d. Medical Surveillance.

(1) It is important for the State Occupational Health, or Medical Service Corp, determine the medical surveillance requirements based on occupancy type and occupancy responsibilities, i.e. administrative personnel, state maintenance workers, contract personnel, civilian population, and personnel who maintain or support IFR operations.

e. Although this IHSAV's focus was to evaluate the IFR area, the other area wipe samples collected returned below the limit of detection for lead. Prevention efforts should continue to ensure the workplace is as free as practical. **(RAC NOT ASSIGNED)**

(1) Recommend continued cleaning within the administrative offices, kitchen, and communal areas to maintain lead particulate concentrations below the ARNG standard of 40ug/ft². Utilize the enclosed Clean-up SOP as a guide to assist with the prevention efforts. Ensure personnel clean-up area(s) and tables after weapons cleaning activities. Tables used for weapons cleaning should be marked, "For Weapons Cleaning Only," when utilized as such. (DODI 6055.01 Appendix to Enclosure 4, date 14 OCT 2014)

6. Violation Correction Log.

a. IHSW has provided a Violation Correction Log derived from the observations from this visit. IHSW recommends the following:

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAB) for Ogden Armory Indoor Firing Range (IFR) 625 East 5300 South Street, Ogden, UT 84402, conducted on 01 OCT 2014

(1) Commander(s) assign an Action OIC/NCOIC, Suspense Date for completion, and Estimated Cost(s) to ensure item completion and corrective status is briefed during quarterly (or monthly) Safety Meetings/Councils until resolved.

(2) Corrective measures should be implemented and accomplished at the lowest levels possible. Hazards and Corrective Measures that cannot be corrected at the facility level, and require assistance from higher headquarters or from the state level, should be elevated to the Quarterly State/BN Safety Council Meeting for resolution.

(3) Recommend a representative from the facility attend all quarterly/monthly meetings to ensure the appropriate emphasis and corrective actions are followed for hazard resolution and abatement of the observations made during this visit.

(4) Retain entries of the items corrected, or closed, for future reference. This may be accomplished by posting completed items within the Corrected Hazard Sheet portion of the Excel Violation Correction Log Workbook we've provided.

(5) The preferred method to document and track identified hazards for resolution is for their entry into the Reserve Component Automation System – Safety and Occupational Health (RCAS-SOH) Program.

7. Hazard Assessment/Job Safety Analysis (JSA).

a. IHSW recommends further program refinement through written documentation for standardized guidance to the personnel performing the processes within the facility. Conducting Hazard Assessments consistent with 29 Code of Federal Regulations (CFR) 1910.132, General Requirements for Personal Protective Equipment and AR 40-5, Preventive Medicine, would provide this continued program refinement.

b. Documenting the Hazard Assessments provides a method to obtain initial and periodic review from the Industrial Hygiene, Occupational Health and Safety Professions located at the JFHQ/HQ/state level.

c. The Hazard Assessments should be used as written training materials for the new, transfer and unit personnel working under the auspice of the facility.

d. IHSW recommends facility supervisory staff and facility personnel conduct initial Hazard Assessments outlined in AR 40-5, Army Preventive Medicine (Section V) and 29 CFR 1910.132 and submit for review and obtain approval from the state Industrial Hygiene, Occupational Health and Safety Professions.

e. We have not provided an appendix with Hazard Assessments (HA) examples of some of this facilities operations. Additional operations can utilize this format to design HA not observed during this IHSAB.

ARNG-CSG-P

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHS AV) for Ogden Armory Indoor Firing Range (IFR) 625 East 5300 South Street, Ogden, UT 84402, conducted on 01 OCT 2014

f. An integral and important factor of the Hazard Assessment/JSA process is for the review and guidance from qualified Safety, Occupational Health and Industrial Hygiene professions located at the higher headquarters level or state level. For this reason, the Hazard Assessments (to include all pertinent and supporting documents) should be completed by the facility personnel and forward to the Utah Army National Guard Industrial Hygiene, Occupational Health and Safety Office for final review and approval (signature).

NOTE: The Hazard Assessments can be used for monthly meetings to brief/train, and document large group training events and activities.

8. IHSW recommends the Senior Unit Commander of this Facility and any Co-Tenant Organizations or Units, review and provide assistance with implementation of these recommendations. This will educate the chain of command and allow the unit or co-tenant organizations to take any necessary precautions or actions required by them and their personnel.

10. To assist you with execution of your responsibilities in correcting the observations noted, we encourage you to consult with the State Safety Manager, Occupational Health Manager and Industrial Hygiene professions located and/or authorized within the State Safety and Occupational Health Office.

11. For additional information please contact the NGB-IHSW office at (916) 854-1491 or via email at **Non-Responsive**

Non-Responsive

NGB, IHSW, CIV
Regional Industrial
Hygiene Manager



Industrial Hygiene Southwest

Violation Inventory Log

LOG OF SCHEDULE OF CORRECTIVE ACTION - COMPLIANCE WITH SAFETY AND HEALTH STANDARDS

OGDEN ARMORY IFR, UTAH 84402

CONTROL NUMBER CLOSED <input checked="" type="checkbox"/>	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/NCOIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
UTOA-10012014-3.1	Lead levels exceeded the minimum requirements.	Armory	2	Recommend conducting a Holistic Lead Evaluation of facility to properly and clearly identify the lead impact. This evaluation will provide the command with a clear assessment of areas that potentially could impact the facility and occupants. During this opportunity Hazard Assessments (HA's) for processes involving facility maintenance and repair activities may be developed.					Occupational Safety and Health Administration (OSHA) standard for lead, 1910.1025 (h)(1)

Indoor Firing Range

Decontamination and Cleaning Protocol

(Periodic Cleaning and Conversion)

1. Ensuring that all procedures listed below comply with all federal, state, and local regulation. Consult with the Regional Industrial Hygiene Office and the States Environmental Office for future guidance.

2. Ventilation System

The range ventilation system must be in operation during all cleaning activities. If no ventilation system is available all doors and windows must keep sealed to prevent contamination of other areas.

3. Materials

- I. A High Efficiency Particulate Air (HEPA) filtered vacuum system is the preferred method of cleanup. If a HEPA vacuum cannot be obtained a wet method, detailed below, should be utilized. **A high-pressured water system or dry sweeping may not be used.**
- II. A cleaning solution containing detergent and water is recommended. New solutions of detergent and water should be mixed frequently.
- III. Two containers should be used; one for wetting the applicator (rags, sponge, mop) and the other for rinsing once the dust has been wiped from the surfaces.

- IV. Wastewater in containers can be left to evaporate. Any waste left in the buckets and applicators should be disposed of as hazardous waste. Consult the Environmental Office for appropriate disposal instructions.
- V. Personnel responsible for decontamination of the range and stored items be provided with a full face air purifying respirator with a N100 filter or HEPA filter cartridge providing that all requirements for placing employees in respiratory protection have been met as detailed in 29 1910.134. Employees should be provided with protective coveralls with hood and shoe covers (i.e. Tyvex TM full body suite). If cotton coveralls are provided then the employer must provide for laundering of protective clothing. Protective clothing should not be taken home. Prior to leaving the area, personnel should thoroughly HEPA vacuum the clothing to prevent lead dust from leaving the area. Work and street clothing should not be stored together.

4. Order of Cleaning

- I. A progression of cleaning from top to bottom and from behind the steel backstop to the firing line should be used. All surface areas in the range must be cleaned. Stored items must be decontaminated prior to removal.
- II. After removing the sand/or the steel backstop, areas in front of and behind the bullet trap, along with the steel backstop plates should be cleaned.
- III. The ceilings, lights, baffles, retrieval system, heating system, and ventilation ducts should be cleaned.

- IV. Acoustical material should be vacuumed and removed instead of being painted over. A toxic Characteristic Leaching Procedure (TCLP) test may be used for acoustical material to determine if the material needs to be classified as hazardous and disposed of according to it. The Environmental Office should be contacted regarding this testing.
- V. The floor should be the last surface cleaned starting at the bullet trap and ending behind the firing line, to include the plenum area. Concrete floors should be sealed with deck enamel, or lead paint sealant.
- VI. All walls should be painted, preferably with a lead sealant paint, which will help prevent any leaching of lead after covering.
- VII. Following the wet cleaning of the area and after all surfaces have been allowed to dry thoroughly, a HEPA vacuum should be used on all surfaces, until no dust or residue can be seen. A thorough inspection to detect surface lead dust should be made following cleanup.
- VIII. The Regional Industrial Hygiene Office should be contacted for clearance sampling and to approve the range for converted use.

5. Decontamination of Stored Items

- I. All stored items must be decontaminated before removing from the range, stored equipment next to the bullet trap and firing line should be decontaminated first.

- II. A HEPA vacuum or wet cleaning method should be used. Every attempt should be made to clean the item before disposing as hazardous waste to reduce cost and waste.
- III. Porous items such as canvas tents or other fabrics may be laundered at companies, which specialize in industrial laundry services. Office partitions and carpeting present during firing should be considered grossly contaminated and disposed of as hazardous waste. Consult the Environmental Office before removing and disposing of items.

6. Medical Surveillance

A pre-placement medical examination is required for all individuals involved with range cleanup operations.

7. Air Monitoring

Worker breathing zone air samples must be collected during range cleanup to ensure that workers are not overexposed and to evaluate clean-up procedures.

8. Hazard Training

A training program must be instituted for all individuals who are subject to exposure to lead at or above the action levels, or for whom the possibility of skin or eye irritations exists. This training should be provided for all personnel currently involved in range cleanup operations, at least annually. As required by 29 CFR 1910.1025(l)

*ARMORY*CLEANUP & FOLLOW-UP HOUSEKEEPING
RECOMMENDATIONSMaterials Needed:

1. Cloth Mop head (s) & Mop head holder(s) with handle.
2. Mop bucket (s) with wringer.
3. Clean cotton rags and sponges.
4. Disposable gloves
5. Large barrel (55 gal.) to store wastewater in after changing out of dirty scrub water. Waste water containers.
6. Disposable overshoes or rubber boots. Personnel conducting cleaning operations should not take clothes, boots, etc., home for laundering.
7. HEPA vacuum
8. Six (6) mill plastic bags to dispose of waste.
9. Detergent with surfactant, e.g., Spic-N-Span, Mr. Clean, etc.

Disposal of Waste Water and Cleaning Materials:

1. *NOTE:* Consult with Local Army National Guard Environmental Office prior to taking any collection, disposal or wiping activities commence. Each state and territory may have additional regulatory guidance on collection, storage and disposal of wastewater.
2. Mop heads should be disposed of after initial cleanup, unless otherwise advised by Environmental office personnel. Note: thorough cleaning of mop heads may be sufficient enough to reuse on future Armory cleanups but check with local Environmental Office.
3. Disposable gloves should be treated as hazardous waste.
4. Soiled cotton rags should be treated as hazardous waste.
5. Wash water contaminated with Lead can be collected and allowed to slowly evaporate leaving Lead deposits/sludge that may be collected in plastic containers, placed in metal drums, and stored for future delivery to an authorized hazardous waste disposal site.

- a. Drums shall be properly labeled to identify contents In-Accordance With (IAW) Federal, State and local regulatory guidance.
- b. Disposal of containerized waste shall be coordinated IAW State hazardous waste program requirements.
- c. The Environmental Office shall coordinate removal and disposal of all containerized hazardous waste through established waste streams.

Post-Cleanup Precautionary Measures:

1. Thoroughly wash hands with soap and water.
2. Rinse off rubber boots with soap and water, capturing wastewater for collection into established waste stream. If personnel choose to use over shoes for protection, dispose of overshoes into waste stream. NOTE: This recommendation is for initial clean up activities and PPE requirements may be reduced after it has been determined non-hazardous levels have been achieved.
3. Wash BDU's or personal clothing separately from children's clothes.

NOTE: No eating, drinking or cosmetics allowed during cleanup procedures (these may be allowed after washing of hands/face and done outside of cleanup area)

NOTE: Avoid blowing, shaking or like actions which could potentially disperses lead dust. Dry sweeping, dusting, wiping or blowing with compressed air shall not be permitted

Initial Armory Cleanup:

1. Use a vacuum cleaner equipped with a HEPA exhaust filter. HEPA vacuum all surfaces in the room (ceiling, walls trim, and floors). Start with the ceiling and work down, moving toward the entry door. Completely clean each room before moving on.
2. Prepare water and detergent for the wipe down phase, according to manufactures recommendations.

3. Wet wipe, with cotton rags or sponge, any horizontal, diagonal or vertical surfaces up six (6) feet from floor surfaces using hot water and "Spic-n-Span" or an equivalent product.
 - a. Rinse out cleaning cloths thoroughly and frequently.
 - b. Change out cleaning water as necessary.

NOTE: If walls to be cleaned show signs of deterioration, e.g., chipping or crumbling paint, in which wiping, scrubbing, or disrupting might potentially increase or spread contamination, then this portion of the clean up should be avoided.

4. Now prepare water and detergent (e.g. Spic N Span, Mr. Clean, Pine Sol) for the mopping phase, according to manufactures recommendations, which should be found on the products label for general clean up.
 - a. Change out water frequently (when water appears dirty)
 - b. Rinse out mop heads frequently to prevent contamination of dirty water.
5. Cover entire drill floor surface with above prescribed water and detergent.
6. Final rinse should be with clean water only - -after mop heads have been cleaned.

Recommended Follow-up Housekeeping Practices *after Clearance sampling of cleaned area is performed by certified personnel:*

1. Floor cleaning and dusting should be accomplished using the wet method described in Initial Armory Cleanup SOP.

Note: Only exception to these wet cleaning procedures would be the use of a chemically treated dust floor mop. This can be used for follow-up armory cleaning by sweeping of large particles of dirt and paper.

- a. Pre-treated (chemically treated) dust floor mop will limit dust particles from being disbursed into the surround atmosphere.

- b. If treated dust mop is used - -Do Not Shake Mop head - - have mop head laundered after use. Always keep used dust mop heads in sealed double plastic bags when stored at armory/facility. Shaking of mop head could release unwanted contaminants into surrounding atmosphere.
2. Frequency of Cleanup- Armories will vary, according to usage and how often they should be cleaned. The following general cleaning schedule is provided:
- a. Only full-time technicians and traditional soldiers using facility during the month. (*Cleaned Monthly*)
 - b. Occasional activities taking place during the month, e.g., 1-2 classes or volleyball games, etc. (*Cleaned 2x's Monthly*)
 - c. Used regularly by soldiers or outside agencies/personnel. (*Cleaned Regularly - -at least Weekly*)

NOTE: Armories with adjoining Indoor Firing Ranges (IFR) should be cleaned more than weekly, again depending on use of Armory and IFR.

NOTE: Clearance sampling/testing is to be accomplished by certified personnel after these cleanup procedures are followed. If the area is an average Armory, occupied by adults only, for which you are cleaning and **is not a Converted IFR space**, you may continue to utilize the Armory space before the officials re-test this space. Please notify your Safety and/or Occupational Health personnel of the completion of this cleaning regime and they will notify the proper officials of the sampling/testing requirements needed.

If work is contracted out, a third party should do the clearance sampling.

Young children and females who are pregnant, there should be posted signs on all facilities, warning of the potential danger of exposure to lead dust.

UTAH ARMY NATIONAL GUARD

OGDEN ARMORY

625 East 5300 South St.
Ogden, UT 84402
(801) 476 3808



Submitted to:

Non-Responsive

National Guard Bureau
Southwest Region Industrial Hygiene Office
10510 Superfortress Avenue
Suite C
Mather, CA 95655

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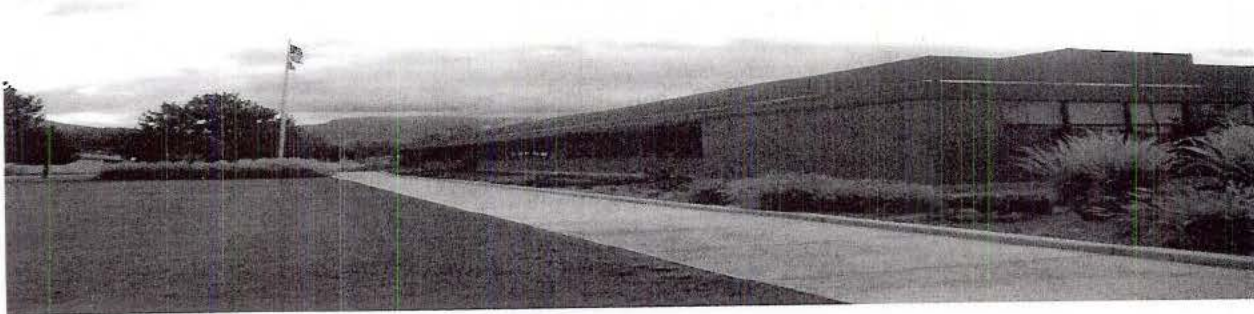
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- 2.0 Survey Procedures and Equipment Used
- 3.0 Findings and Recommendations
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 - 3.2 Operational Changes Noted
 - 3.3 Physical Safety and Condition of Facility
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INDUSTRIAL HYGIENE ASSISTANCE VISIT OGDEN ARMORY OGDEN, UTAH



1.0 Introduction and Background

1.1. This report summarizes the results of the Industrial Hygiene (IH) Site Assistant Visit (SAV) conducted at the Ogden Armory in Ogden, Utah on October 1, 2014. The Army National Guard Industrial Hygiene Southwest (ARNG-IHSW) requested Aloha World to visit the Ogden Armory to follow-up and evaluate potential high lead. This IH SAV also includes interviews with **Non-Responsive** regarding industrial hygiene issues as well as any change in operations in the work area that might affect the workers health and safety. **Non-Responsive** from Aloha World completed this survey.

1.2. The following sections will provide details on how the IH Survey was conducted. A drawing showing the facility layout and sampling locations is included as **Attachment D**. The most stringent OSHA, ARNG, Corps of Engineers (COE), American National Standards Institute (ANSI), American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) and Design Guide standards in effect at the time of the survey were used to assess the workplace.

1.3. The Ogden Armory has thirty full time guard members and 250-300 guardsmen and women on drill weekend. This armory was constructed in 1968 and renovated in 2011. This armory has offices used for administrative purposes and also contains a drill floor, arms room, classrooms, industrial kitchen and storage. Maintenance service is not done at this site. Maintenance is done in FMS 1, located adjacent to the armory.

1.4 There is a Converted Indoor Firing Range (CIFR) in this facility. The ventilation system, firing lines, lighting and bullet stop have all been removed. The firing range is located in the basement and now serves as the vault and storage area. Lead samples were taken in the the drill hall and the vault/storage area. Lead wipe samples results could not be obtained from the time of conversion.

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2.0 Survey Procedures and Equipment Used

Lead wipe samples were collected on dusty horizontal floor surfaces in the facility including but not limited to the drill floor and the CFR area (vault, storage). "Ghost Wipe" brand wipes were used with a 16 square inch template. The wipes used conform to American Standards for Testing Materials E1792-96A, *Standard Specification for Wipe Sampling Materials for Lead in Surface Dust*. The collected wipe samples were placed in clean, labeled centrifuge tubes. Samples were submitted to Reservoir Environmental Services, Inc for analysis via Flame Atomic Absorption, USEPA Method SW846 3050B. Laboratory results are listed in micrograms of lead per square foot ($\mu\text{g}/\text{ft}^2$). Copies of the raw analytical data are presented in **Appendix D**.

Samples were submitted to Reservoir Environmental Services, Inc, Denver, Colorado, for analysis via Flame Atomic Absorption.

3.0. Findings and Recommendations

3.1. Lead wipe sampling- Analytical results from the lead wipe sampling obtained from the armory are found in Table 3.1.A. A graphical and written representation of sampling locations can be found in **Appendix D** along with analytical reports. Photographs were taken of each sample point and are presented in **Appendix C**. There are currently no standards that dictate what a safe level of lead is from a wipe sample. Lead sampling results can be compared to the protocol outlined in the U.S. Department of Housing and Urban Development's (HUD's) *Guidelines For The Evaluation And Control Of Lead-Based Paint Hazards In Housing*, June 1997. HUD currently recommends an exposure limit of $40 \mu\text{g}/\text{ft}^2$. This guideline was established to prevent lead exposure to children in domestic homes, along with females who are pregnant. Areas that have levels that exceed $40 \mu\text{g}/\text{ft}^2$ should be thoroughly cleaned and employees that may come into contact with those areas should be properly trained in the hazards of lead exposure

Table 3.1.A.
Lead Wipe

Sample ID	AREA	Photo #	Result $\mu\text{g}/\text{ft}^2$
100214-1	Control	NA	BDL
100214-2	North drill hall	2	BDL
100214-3	Center drill hall	3	BDL
100214-4	South drill hall	4	BDL
100214-5	West drill hall	5	BDL
100214-6	East drill hall	6	BDL
100214-7	North CFR	7	81.8
100214-8	Center CFR	8	161
100214-9	South CFR	9	197
100214-10	West CFR	10	245
100214-11	East CFR	11	154

BDL= Below Detection Limits

$\mu\text{g}/\text{ft}^2$ = Micrograms per Square Foot

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NOTE: Adequate cleaning of working environment should be continued throughout the armory, especially in the CIFR/basement. Please utilize the attached SOP and general information paper provided for cleaning procedures.

Recommendation: Dry sweeping should be restricted in areas where accumulations of dust are present to prevent toxic metals on surfaces from becoming airborne. The cleaning of loose material from horizontal surfaces should be conducted with HEPA (High Efficiency Particulate Air) vacuums and/or wet mopping/cleaning method. Any area that exceeds 40 ug/ft² should be thoroughly decontaminated. Clean vault/storage area after every episode of cleaning weapons to help prevent migration of this heavy metal.

3.2. Operational Changes Noted- None found.

3.3. Physical Safety and Condition of Facility- A physical walk through of the facility was conducted. Overall, housekeeping was found to be in above average condition.

This 1968 building is of concrete block and brick construction. No water leakage was detected. They have had previous issues with the roof leaking but it was fixed in 2012. No water damage has been found since.

A fire evacuation plan was posted throughout the armory.

The fire extinguishers within this facility are part of the fire suppression available and should be tested annually and inspected monthly. NFPA 10, 27-3.4.1 addresses alarm systems and 29 CFR 1910.157 addresses inspection requirements for fire extinguishers. Annual inspections should be accomplished by a qualified organization, e.g., fire department, and checked and documented monthly by the facilities personnel. The fire extinguishers were found to be current on annual and monthly inspections. A fire alarm system is in place and per Non-Responsive in working order.

3.4. Recurring Events: We were unable to obtain any previous surveys for this armory.

4.0 Industrial Hygienist Certification/Project Limitations

All Industrial Hygiene Assessment techniques and tests used in the Industrial Hygiene survey of the Army National Guard Armories were reviewed by Non-Responsive Industrial Hygiene Southwest National Guard Bureau at (916) 854-1492

This Project was performed using, as a minimum, practices consistent with standards acceptable within the industry at this time, and a level of diligence typically exercised by industrial hygiene and environmental consultants performing similar services.

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Industrial Hygiene Survey
Ogden Armory

The procedures used in this investigation attempt to establish a balance between the competing goals of limiting investigative and reporting costs and time, and reducing the uncertainty about unknown conditions. Therefore, because the findings of this report were derived from the scope, costs, time, and other limitations, the conclusions should not be construed as a guarantee that all environmental or occupational hazards have been identified and fully evaluated. Where sample collection and testing have been performed, Aloha World's professional opinions are based in part on the interpretation of data from discrete sampling locations that may not represent conditions at non-sampled locations. Aloha World assumes no responsibility for omissions or errors resulting from inaccurate information or data provided by sources outside of Aloha World, or from omissions or errors in public records.

Furthermore, it is emphasized that the final decision on how much risk to accept always remains with the client since Aloha World is not in a position to fully understand all of the client's needs. Clients with a greater aversion to risk may want to take additional actions while others, with less aversion to risk, may want to take no further action

5.0 Technical Assistance For technical assistance regarding information found in this report or the performed survey, please contact **Non-Responsive** of the Southwest Regional Industrial Hygiene Office, (916) 854-1491. Contact the State Safety, State Industrial Hygiene and Occupational Health Office and/or the Regional Industrial Hygienist should any of the operations change, or should the personnel become incapable of following the previous recommendations and subsequent recommendations are needed.

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Appendix A References

American Conference of Governmental Industrial Hygienists (ACGIH), Industrial Ventilation, A Manual of Recommended Practice, 23 Edition, 1998.

American Conference of Governmental Industrial Hygienists (ACGIH), Threshold Limit Values for Chemical Substances and Physical Agents and Biological Indices for 1998.

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TG022, US Army Environmental Hygiene Agency (USAEHA), Industrial Hygiene Evaluation Guide, October 1975

TG 141, US Army for Health Promotion and Preventive Medicine (USACHPPM) Industrial Hygiene Air Sampling Guide, Nov. 1997

Title 29, Code of Federal Regulations (CFR), 1998, revision Part 1910, Occupational Safety and Health Standards

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Appendix B

Recommendations

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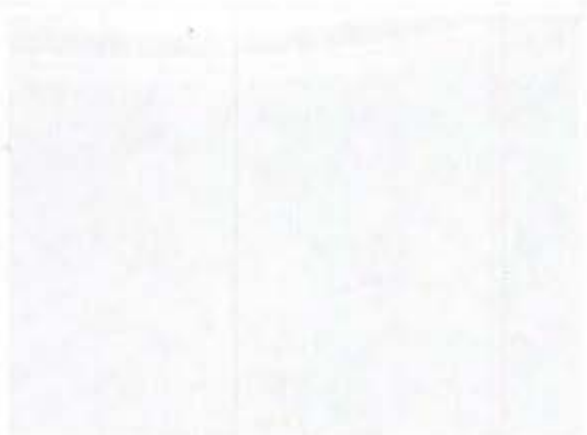
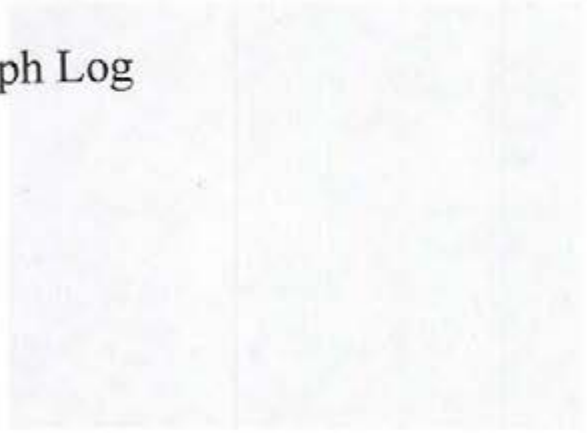
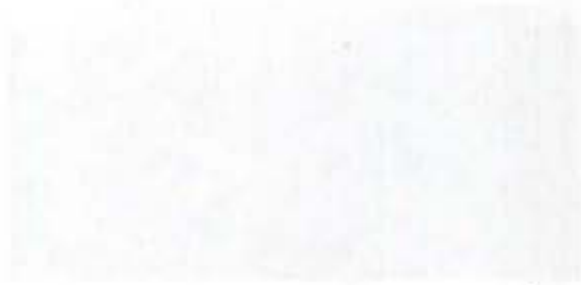
Recommendations

1. Occupational Safety and Health Administration (OSHA) standard for lead; 1910.1025 (h) (1) require that all surfaces shall be maintained as free as practicable of accumulations of lead. Dry sweeping should be restricted in areas where accumulations of dust are present to prevent toxic metals on surfaces from becoming airborne. The cleaning of loose material from horizontal surfaces should be conducted with HEPA (High Efficiency Particulate Air) vacuums and/or wet mopping. Any area that exceeds 40 ug/ ft² should be thoroughly decontaminated.

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Appendix C

Photograph Log



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Photo Log



Photo #1 – Ogden Armory

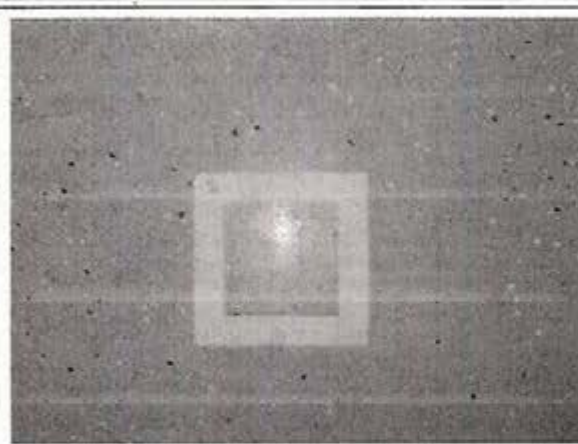


Photo #2- North drill hall wipe

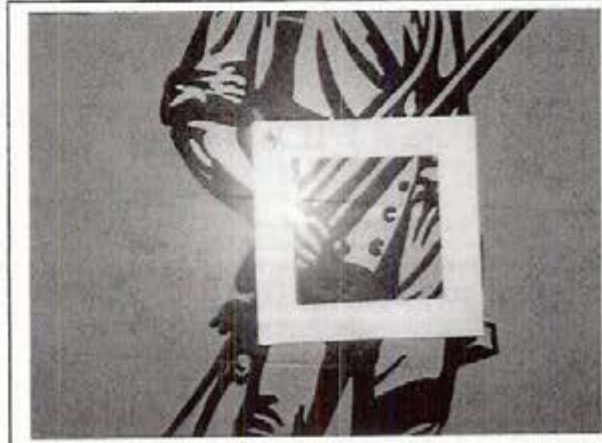


Photo #3- Center drill hall wipe

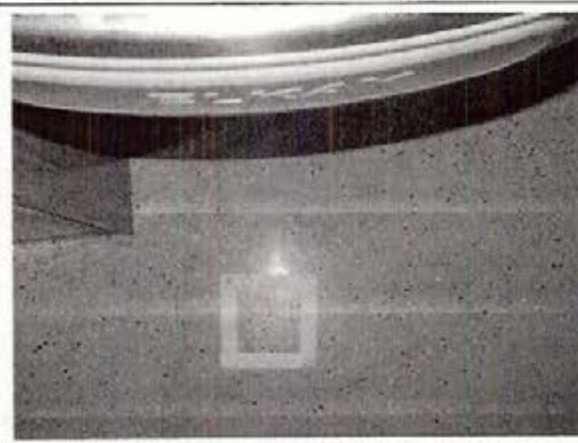


Photo #4- South drill hall wipe

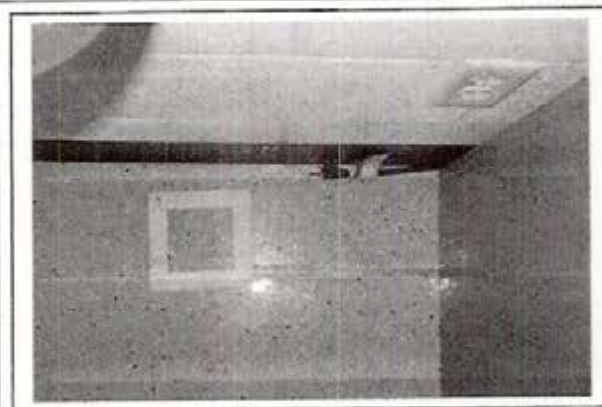


Photo #5 –West drill hall wipe

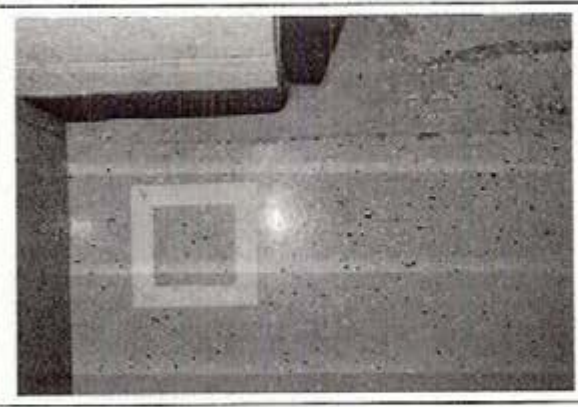


Photo #6 – East drill hall wipe

Photo Log



Photo #13 – Janitorial closet



Photo #14- Drill Hall

Photo Log



Photo #13 – Janitorial closet

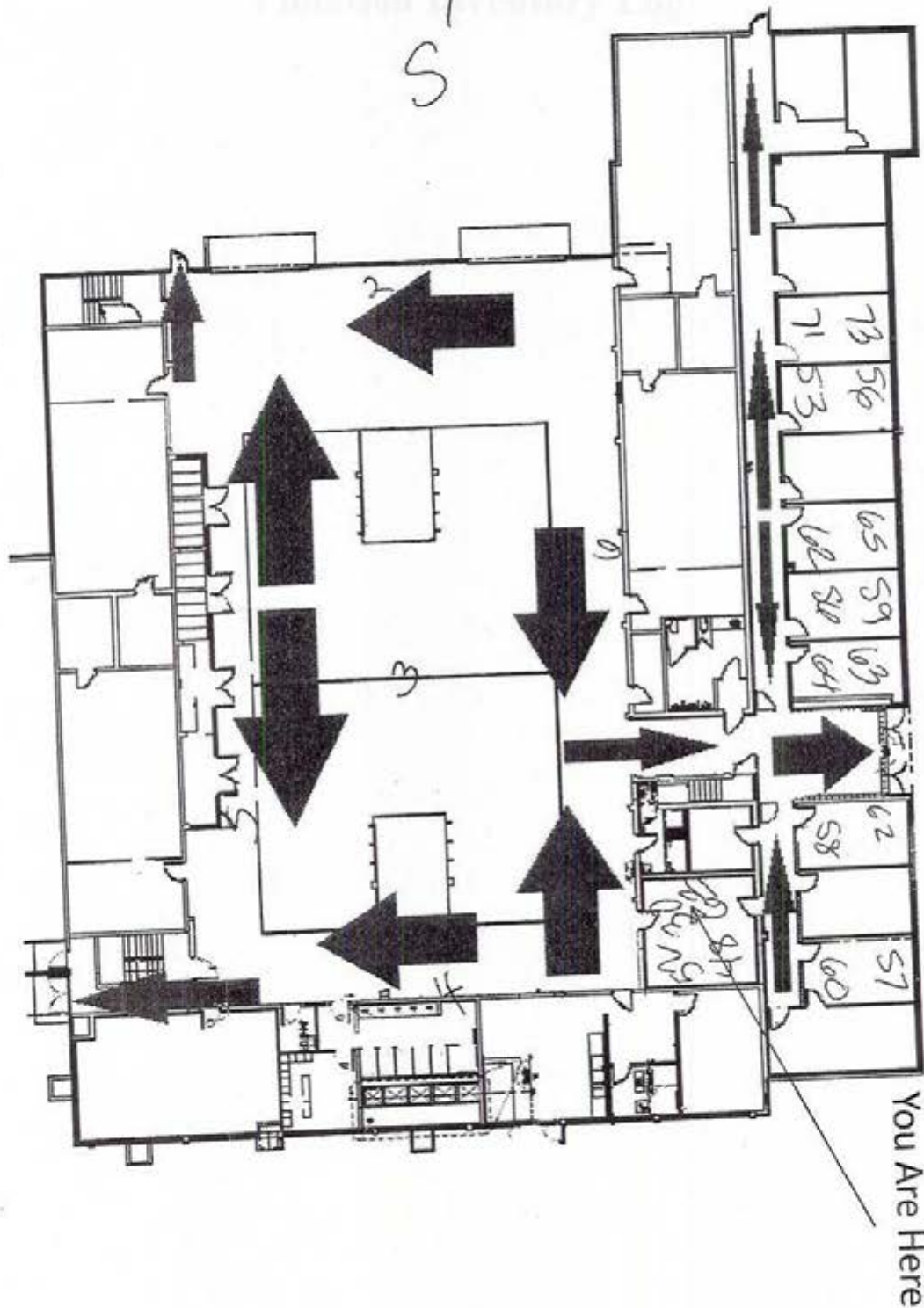


Photo #14- Drill Hall

Appendix D

Laboratory Analysis Reports Sample Location & Log

Aloha World





Industrial Hygiene Southwest
Violation Inventory Log
LOG OF SCHEDULE OF CORRECTIVE ACTION - COMPLIANCE WITH SAFETY AND HEALTH STANDARDS
OGDEN ARMORY IFR, UTAH 84402

CONTROL NUMBER	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/INCOIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
CLOSED <input checked="" type="checkbox"/> UTOA-10012014-3.1	Lead levels exceeded the minimum requirements.	Armory	2	Recommend conducting a Holistic Lead Evaluation of facility to properly and clearly identify the lead impact. This evaluation will provide the command with a clear assessment of areas that potentially could impact the facility and occupants. During this opportunity Hazard Assessments (HA's) for processes involving facility maintenance and repair activities may be developed.					Occupational Safety and Health Administration (OSHA) standard for lead, 1910.1025 (h)(1)



ARMY NATIONAL GUARD INDUSTRIAL HYGIENE - SOUTHWEST

Guam • Hawaii • California • Oregon • Washington • Nevada • Arizona • Idaho • Utah • Wyoming • Montana • New Mexico • Nebraska

Industrial Hygiene Site Assistance Visit

Ogden Indoor Firing Range (IFR)
625 East 5300 South
Ogden, UT 84405

10510 Superfortress Avenue, Suite C, Mather, CA 95655 (916) 854-1494

49



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DEPARTMENT OF THE ARMY AND AIRFORCE
NATIONAL GUARD BUREAU
INDUSTRIAL HYGIENE SOUTHWEST
10510 Superfortress Ave, Ste. C
Mather, CA 95655

24 SEP 2013

ARNG-CSG-P

MEMORANDUM THRU **Non-Responsive** HM, 12953 Minuteman Dr. Draper, UT 84020

FOR Commander Ogden Indoor Firing Range (IFR) 625 East 5300 South Ogden, UT 84405

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (SAV) for the Ogden Indoor Firing Range (IFR) 625 East 5300 South Ogden, UT on 17 Sep 2013

1. References. See survey report.

2. General.

a. At the request of the NGB Industrial Hygiene, Southwest (IHSW) Region, an Industrial Hygiene Site Assistance Visit and cursory review of safety related items and programs was conducted at the Ogden Indoor Firing Range (IFR) 625 East 5300 South Ogden, UT on 17 Sep 2013

b. The findings and recommendations in this Executive Summary are controlling and supersede all recommendations in the contractor report (reference Attachment II). However, IHSW concurs with the observations and findings within the attached contractor report.

c. Risk Assessment Codes (RAC) provided in this report have been derived from two sources: Deriving Risk Assessment Codes (RAC's) for Health Hazards (Ref: DOD Instruction 6055.1) and AR 385-10, The Army Safety Program.

d. Use of trademark names in the attached report, or this Executive Summary, does not imply Army National Guard endorsement of any product.

3. Findings. See survey report.

4. Commendable.

a. The facility was generally clean and orderly and personnel were helpful during this SAV.

5. Observations / Recommendations.

NOTE: This section provides conclusions and recommendations for the findings and observations made within the attached contractors report. The paragraphs are numbered to correspond to the sections where they were first noted. (i.e., paragraph 2.1a represents the 2.1a located within the contractors report.

ARNG-CSG-P

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (SAV) for the Ogden Indoor Firing Range (IFR) 625 East 5300 South Ogden, UT on 17 Sep 2013

- a. Clean and decontaminate the lead dust in the converted IFR by utilizing Armory Clean-Up SOP. Improve housekeeping practices so migration of heavy metals will be prevented. (para. 3.2) (RAC 3)

6. Violation Correction Log.

- a. IHSW has provided a Violation Correction Log derived from the observations from this visit. IHSW recommends the following:

1. Commander(s) assign an Action OIC/NCOIC, Suspense Date for completion, and Estimated Cost(s) to ensure item completion and corrective status is briefed during quarterly (or monthly) Safety Meetings/Councils until resolved.

2. Corrective measures should be implemented and accomplished at the lowest levels possible. Hazards and Corrective Measures that cannot be corrected at the facility level, and require assistance from higher headquarters or from the state level, should be elevated to the Quarterly State/BN Safety Council Meeting for resolution.

3. Recommend a representative from the facility attend all quarterly/monthly meetings to ensure the appropriate emphasis and corrective actions are followed for hazard resolution and abatement of the observations made during this visit.

4. Retain entries of the items corrected, or closed, for future reference. This may be accomplished by posting completed items within the Corrected Hazard Sheet portion of the Excel Violation Correction Log Workbook we've provided.

5. The preferred method to document and track identified hazards for resolution is for their entry into the Reserve Component Automation System – Safety and Occupational Health (RCAS-SOH) Program.

- b. IHSW recommends further program refinement through written documentation for standardized guidance to the personnel performing the processes. Conducting Hazard Assessments consistent with 29 Code of Federal Regulations (CFR) 1910.132, General Requirements for Personal Protective Equipment and AR 40-5, Preventive Medicine, would provide this continued program refinement.

7. Hazard Assessment/Job Safety Analysis (JSA).

- a. Documenting the Hazard Assessments provides a method to obtain initial and periodic review from the Industrial Hygiene, Occupational Health and Safety Professions located at the JFHQ/HQ/state level.

- b. The Hazard Assessments should be used as written training materials for the new, transfer and unit personnel working under the auspice of the facility.

- c. IHSW recommends facility supervisory staff and facility personnel conduct initial Hazard Assessments outlined in AR 40-5, Army Preventive Medicine (Section V) and 29 CFR 1910.132 and submit for review and obtain approval from the state Industrial Hygiene, Occupational Health and Safety Professions.

ARNG-CSG-P

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (SAV) for the Ogden Indoor Firing Range (IFR) 625 East 5300 South Ogden, UT on 17 Sep 2013

d. We have provided an appendix with Hazard Assessments (HA) examples of some of this facilities operations. Additional operations can utilize this format to design HA not observed during this SAV.

e. An integral and important factor of the Hazard Assessment/JSA process is for the review and guidance from qualified Safety, Occupational Health and Industrial Hygiene professions located at the higher headquarters level or state level. For this reason, the Hazard Assessments (to include all pertinent and supporting documents) should be completed by the facility personnel and forward to the Utah Army National Guard Industrial Hygiene, Occupational Health and Safety Office for final review and approval (signature).

f. Job Safety Analysis (JSA's)/Hazard Assessments.

NOTE: The Hazard Assessments can be used for monthly meetings to brief/train, and document large group training events and activities.

8. IHSW recommends the Senior Unit Commander of this Facility and any Co-Tenant Organizations or Units, review and provide assistance with implementation of these recommendations. This will educate the chain of command and allow the unit or co-tenant organizations to take any necessary precautions or actions required by them and their personnel.

9. To assist you with execution of your responsibilities in correcting the observations noted, we encourage you to consult with the State Safety Manager, Occupational Health Manager and Industrial Hygiene professions located and/or authorized within the State Safety and Occupational Health Office.

10. For additional information please contact the NGB-IHSW office at (916) 854-1491 or via email at

Non-Responsive

Non-Responsive

NGB, IHSW, CIV
Industrial Hygiene



Industrial Hygiene Southwest
Violation Inventory Log
LOG OF SCHEDULE OF CORRECTIVE ACTION - COMPLIANCE WITH SAFETY AND HEALTH STANDARDS
Ogden Armory (IFR), Utah

CONTROL NUMBER	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/INCOIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
UTOA-091713-3.2 <input type="checkbox"/> CLOSED	The lead wipe sample collected on the former mid-range floor showed a lead concentration of 54 µg/ft ² , the lead wipe sample collected on the former bullet trap floor showed a lead concentration of 75 µg/ft ² , the and the lead concentration on the entryway floor sample was 44 µg/ft ² .	Ogden Converted Indoor Firing Range	3	1. Clean the floors of the converted IFR and the entryway to achieve a lead level less than 40 µg/ft ² following the guidance in the attached SOPs. 2. Perform post-cleanup wipe sampling to ensure lead levels are within the criteria outlined in the IHSW SOP for Armory Cleanup.					IHSW Lead SOP & Prudent Industrial Hygiene Practice

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ARMORY

CLEANUP & FOLLOW-UP HOUSEKEEPING RECOMMENDATIONS

Materials Needed:

1. Cloth Mop head (s) & Mop head holder(s) with handle.
2. Mop bucket (s) with wringer.
3. Clean cotton rags and sponges.
4. Disposable gloves
5. Large barrel (55 gal.) to store wastewater in after changing out of dirty scrub water. Waste water containers.
6. Disposable overshoes or rubber boots. Personnel conducting cleaning operations should not take clothes, boots, etc., home for laundering.
7. HEPA vacuum
8. Six (6) mill plastic bags to dispose of waste.
9. Detergent with surfactant, e.g., Spic-N-Span, Mr. Clean, etc.

Disposal of Waste Water and Cleaning Materials:

1. *NOTE:* Consult with Local Army National Guard Environmental Office prior to taking any collection, disposal or wiping activities commence. Each state and territory may have additional regulatory guidance on collection, storage and disposal of wastewater.
2. Mop heads should be disposed of after initial cleanup, unless otherwise advised by Environmental office personnel. Note: thorough cleaning of mop heads may be sufficient enough to reuse on future Armory cleanups but check with local Environmental Office.
3. Disposable gloves should be treated as hazardous waste.
4. Soiled cotton rags should be treated as hazardous waste.
5. Wash water contaminated with Lead can be collected and allowed to slowly evaporate leaving Lead deposits/sludge that may be collected in plastic containers, placed in metal drums, and stored for future delivery to an authorized hazardous waste disposal site.

- a. Drums shall be properly labeled to identify contents In-Accordance With (IAW) Federal, State and local regulatory guidance.
- b. Disposal of containerized waste shall be coordinated IAW State hazardous waste program requirements.
- c. The Environmental Office shall coordinate removal and disposal of all containerized hazardous waste through established waste streams.

Post-Cleanup Precautionary Measures:

1. Thoroughly wash hands with soap and water.
2. Rinse off rubber boots with soap and water, capturing wastewater for collection into established waste stream. If personnel choose to use over shoes for protection, dispose of overshoes into waste stream. NOTE: This recommendation is for initial clean up activities and PPE requirements may be reduced after it has been determined non-hazardous levels have been achieved.
3. Wash BDU's or personal clothing separately from children's clothes.

NOTE: No eating, drinking or cosmetics allowed during cleanup procedures (these may be allowed after washing of hands/face and done outside of cleanup area)

NOTE: Avoid blowing, shaking or like actions which could potentially disperses lead dust. Dry sweeping, dusting, wiping or blowing with compressed air shall not be permitted

Initial Armory Cleanup:

1. Use a vacuum cleaner equipped with a HEPA exhaust filter. HEPA vacuum all surfaces in the room (ceiling, walls trim, and floors). Start with the ceiling and work down, moving toward the entry door. Completely clean each room before moving on.
2. Prepare water and detergent for the wipe down phase, according to manufactures recommendations.

3. Wet wipe, with cotton rags or sponge, any horizontal, diagonal or vertical surfaces up six (6) feet from floor surfaces using hot water and "Spic-n-Span" or an equivalent product.
 - a. Rinse out cleaning cloths thoroughly and frequently.
 - b. Change out cleaning water as necessary.

NOTE: If walls to be cleaned show signs of deterioration, e.g., chipping or crumbling paint, in which wiping, scrubbing, or disrupting might potentially increase or spread contamination, then this portion of the clean up should be avoided.

4. Now prepare water and detergent (e.g. Spic N Span, Mr. Clean, Pine Sol) for the mopping phase, according to manufactures recommendations, which should be found on the products label for general clean up.
 - a. Change out water frequently (when water appears dirty)
 - b. Rinse out mop heads frequently to prevent contamination of dirty water.
5. Cover entire drill floor surface with above prescribed water and detergent.
6. Final rinse should be with clean water only - -after mop heads have been cleaned.

Recommended Follow-up Housekeeping Practices *after Clearance sampling of cleaned area is performed by certified personnel:*

1. Floor cleaning and dusting should be accomplished using the wet method described in Initial Armory Cleanup SOP.

Note: Only exception to these wet cleaning procedures would be the use of a chemically treated dust floor mop. This can be used for follow-up armory cleaning by sweeping of large particles of dirt and paper.

- a. Pre-treated (chemically treated) dust floor mop will limit dust particles from being disbursed into the surround atmosphere.

- b. If treated dust mop is used - -Do Not Shake Mop head - - have mop head laundered after use. **Always keep used dust mop heads in sealed double plastic bags when stored at armory/facility.** Shaking of mop head could release unwanted contaminants into surrounding atmosphere.
2. Frequency of Cleanup- Armories will vary, according to usage and how often they should be cleaned. The following general cleaning schedule is provided:
 - a. Only full-time technicians and traditional soldiers using facility during the month. (*Cleaned Monthly*)
 - b. Occasional activities taking place during the month, e.g., 1-2 classes or volleyball games, etc. (*Cleaned 2x's Monthly*)
 - c. Used regularly by soldiers or outside agencies/personnel. (*Cleaned Regularly - -at least Weekly*)

NOTE: Armories with adjoining Indoor Firing Ranges (IFR) should be cleaned more than weekly, again depending on use of Armory and IFR.

NOTE: Clearance sampling/testing is to be accomplished by certified personnel after these cleanup procedures are followed. If the area is an average Armory, occupied by adults only, for which you are cleaning and **is not a Converted IFR space**, you may continue to utilize the Armory space before the officials re-test this space. Please notify your Safety and/or Occupational Health personnel of the completion of this cleaning regime and they will notify the proper officials of the sampling/testing requirements needed.

If work is contracted out, a third party should do the clearance sampling.

Young children and females who are pregnant, there should be posted signs on all facilities, warning of the potential danger of exposure to lead dust.



IH ASSISTANCE VISIT

**Indoor Firing Range
Utah Army National Guard
Ogden Armory
625 East 5300 South
Ogden, Utah 84405**

October 2, 2013

Prepared for:

**Industrial Hygiene Southwest
10510 Superfortress Avenue, Suite C
Mather, California 95655**

Prepared by:

Non-Responsive

Senior Project Manager

Reviewed by:

Non-Responsive

Industrial Hygiene Services Manager

AL137633

640 EAST WILMINGTON AVENUE

SALT LAKE CITY, UT 84106

TELEPHONE: 801-466-2223

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SALT LAKE CITY

EMERYVILLE

PHOENIX

DENVER

SEATTLE

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EXECUTIVE SUMMARY

On September 17, 2013, [Non-Responsive] E, CSP, of IHI Environmental (IHI), conducted an Industrial Hygiene (IH) Assistance Visit at the Utah Army National Guard Ogden Armory Indoor Firing Range located at 625 East 5300 South, Ogden, Utah 84405. The primary point of contact for information gathered during this survey was [Non-Responsive] (801) 336-8701,

[Non-Responsive]

Note: [Non-Responsive] was not on site during this IH Assistance Visit. Information regarding the former Indoor Firing Range was obtained from [Non-Responsive] Training NCO.

The objectives of this IH Assistance Visit were to determine if the firing range was operational or converted and to determine if the range and adjacent spaces were contaminated with lead residues above the limits outlined in the *Standard Operating Procedure (SOP) for Armory Cleanup & Follow-up Housekeeping*.

The report that follows this Executive Summary should be read in its entirety because it includes important information not included in this summary, such as task descriptions, work space locations, regulatory requirements, and additional recommendations.

EXECUTIVE SUMMARY

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[Non-Responsive]

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The report that follows this Executive Summary should be read in its entirety because it includes important information not included in this summary, such as task descriptions, work space locations, regulatory requirements, and additional recommendations.

1.0 INTRODUCTION

On September 17, 2013, [Non-Responsive] PE, CSP, of IHI Environmental (IHI), conducted an Industrial Hygiene (IH) Assistance Visit at the Utah Army National Guard Ogden Armory Indoor Firing Range located at 625 East 5300 South, Ogden, Utah 84405. The primary point of contact for information gathered during this survey was [Non-Responsive] (801) 336-8701, [Non-Responsive]

1.1 Objectives

The objectives of this IH Assistance Visit were to determine if the firing range was operational or converted and to determine if the range and adjacent spaces were contaminated with lead residues above the limits outlined in NGP 420-15, *Guidelines and Procedures for Rehabilitation and Conversion of Indoor Firing Ranges*, and the IHSW Standard Operating Procedure (SOP) for *Armory Cleanup & Follow-up Housekeeping*.

1.2 Scope of Work

To achieve the above objectives at this facility, the visit included the following:

- evaluate the status of the firing range;
- collect lead surface wipe samples from the firing range, adjacent spaces, and any areas where weapons are cleaned; and
- provide a report of findings.

2.0 METHODS

2.1 Lead Wipe Sampling

Lead wipe samples were collected on floor surfaces in the IFR at the former firing line, mid-range, and the bullet trap locations. Additional lead wipe samples were collected at the firing range entryway. Lead Wipe™ brand wipes were used within a 100-square-centimeter template. The wipes used conform to American Society for Testing and Materials E1792, *Standard Specification for Wipe Sampling Materials for Lead in Surface Dust*. The collected wipe samples were placed in clean and labeled plastic containers. Samples were submitted to ALS Laboratories for analysis, using NIOSH Method 7300. See **Appendix D** for sample locations and **Appendix C** for laboratory results.


The Mather, California, office of Industrial Hygiene Southwest has developed a Standard Operating Procedure (SOP) for lead, which is a blend of OSHA, HUD, and Army

Furthermore, it is emphasized that the final decision on how much risk to accept always remains with the client since IHI is not in a position to fully understand all of the client's needs. Clients with a greater aversion to risk may want to take additional actions while others, with less aversion to risk, may want to take no further action.

6.0 PROJECT APPROVAL

This IH Assistance Visit was reviewed and approved by:

Non-Responsive


PH, CIH, CSP
Industrial Hygiene Program Manager

September 20, 2013
Date

7.0 TECHNICAL ASSISTANCE

Technical Assistance: For technical assistance regarding information found in this report or the performed survey, please contact **Non-Responsive** 801-466-2223, or **Non-Responsive** of the Southwest Regional Industrial Hygiene Office, 916-804-1707. Contact the State Safety and Occupational Health Office and/or the Regional Industrial Hygienist if the operations change, or the personnel are incapable of following the recommendations.

APPENDIX A

References

AR 385-10, *The Army Safety Program*

Title 29, *Code of Federal Regulations (CFR)*, 2011, revision Part 1910, *Occupational Safety and Health Standards*

NGP 420-15, *Guidelines and Procedures for Rehabilitation and Conversion of Indoor Firing Ranges*

IHSW, *Standard Operating Procedure for Armory Cleanup & Follow-up Housekeeping Recommendations*

APPENDIX B

Table 1 – Lead Wipe Sample Results

Ogden, Utah - Converted Indoor Firing Range - Lead Wipe Sample Results

Sample Number	Collection Date	Location	Result $\mu\text{g}/\text{ft}^2$
633-01	9/17/2013	Former Firing Lane Floor	37
633-02	9/17/2013	Former Mid Range Floor	54
633-03	9/17/2013	Former Bullet Trap Floor	75
633-04	9/17/2013	Former Firing Lane North Wall	<12
633-05	9/17/2013	Former Bullet Trap South Wall	<12
633-06	9/17/2013	Former Mid Range North Wall	<12
633-07	9/17/2013	Entryway to Former Range	44
633-08	9/17/2013	Blank	<12

APPENDIX C
Laboratory Analytical Report - Lead



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ANALYTICAL REPORT

Report Date: September 20, 2013

Non-Responsive

IHI Environmental
640 East Wilmington Avenue
Salt Lake City, UT 84106

Phone: (801) 466-2223

Fax: (801) 466-9616

Non-ResponsiveWorkorder: **34-1326042**

Client Project ID: AL137633/Ogden Armory-IFR-Ogde

Purchase Order: AL137633

Project Manager: **Non-Responsive**

Analytical Results

Sample ID: 633-01		Media: Lead Dust Wipe		Collected: 09/17/2013
Lab ID: 1326042001		Sampling Location: Ogden Armory-IFR-Ogd		Received: 09/17/2013
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 100 cm ²		Prepared: 09/18/2013 Analyzed: 09/18/2013
Analyte	ug/sample	ug/ft ²	RL (ug/sample)	
Cadmium	0.083	0.77	0.075	
Chromium	1.2	12	0.25	
Cobalt	0.54	5.0	0.075	
Copper	24	230	1.3	
Iron oxide	2900	27000	14	
Lead	3.9	37	1.3	
Manganese	23	220	0.13	
Nickel	2.9	27	0.25	
Zinc oxide	53	490	16	

Sample ID: 633-02		Media: Lead Dust Wipe		Collected: 09/17/2013
Lab ID: 1326042002		Sampling Location: Ogden Armory-IFR-Ogd		Received: 09/17/2013
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 100 cm ²		Prepared: 09/18/2013 Analyzed: 09/18/2013
Analyte	ug/sample	ug/ft ²	RL (ug/sample)	
Cadmium	0.15	1.4	0.075	
Chromium	1.3	12	0.25	
Cobalt	0.42	3.9	0.075	
Copper	9.4	88	1.3	
Iron oxide	2300	21000	14	
Lead	5.8	54	1.3	
Manganese	17	160	0.13	
Nickel	4.3	40	0.25	
Zinc oxide	51	470	16	

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ANALYTICAL REPORT

Workorder: **34-1326042**
Client Project ID: AL137633/Ogden Armory-IFR-Ogde
Purchase Order: AL137633
Project Manager: **Non-Responsive**

Analytical Results

Sample ID: 633-03		Media: Lead Dust Wipe	Collected: 09/17/2013
Lab ID: 1326042003		Sampling Location: Ogden Armory-IFR-Ogd	Received: 09/17/2013
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 100 cm ²	Prepared: 09/18/2013 Analyzed: 09/18/2013
Analyte	ug/sample	ug/ft ²	RL (ug/sample)
Cadmium	<0.075	<0.70	0.075
Chromium	1.4	13	0.25
Cobalt	0.34	3.1	0.075
Copper	6.7	63	1.3
Iron oxide	4000	37000	14
Lead	8.1	75	1.3
Manganese	21	190	0.13
Nickel	2.0	19	0.25
Zinc oxide	63	580	16

Sample ID: 633-04		Media: Lead Dust Wipe	Collected: 09/17/2013
Lab ID: 1326042004		Sampling Location: Ogden Armory-IFR-Ogd	Received: 09/17/2013
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 100 cm ²	Prepared: 09/18/2013 Analyzed: 09/18/2013
Analyte	ug/sample	ug/ft ²	RL (ug/sample)
Cadmium	<0.075	<0.70	0.075
Chromium	<0.25	<2.3	0.25
Cobalt	<0.075	<0.70	0.075
Copper	<1.3	<12	1.3
Iron oxide	33	310	14
Lead	<1.3	<12	1.3
Manganese	1.7	16	0.13
Nickel	<0.25	<2.3	0.25
Zinc oxide	29	270	16

Sample ID: 633-05		Media: Lead Dust Wipe	Collected: 09/17/2013
Lab ID: 1326042005		Sampling Location: Ogden Armory-IFR-Ogd	Received: 09/17/2013
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 100 cm ²	Prepared: 09/18/2013 Analyzed: 09/18/2013
Analyte	ug/sample	ug/ft ²	RL (ug/sample)
Cadmium	<0.075	<0.70	0.075
Chromium	<0.25	<2.3	0.25
Cobalt	<0.075	<0.70	0.075
Copper	<1.3	<12	1.3
Iron oxide	<14	<130	14
Lead	<1.3	<12	1.3
Manganese	0.63	5.8	0.13

Results Continued on Next Page



ANALYTICAL REPORT

Workorder: **34-1326042**
Client Project ID: AL137633/Ogden Armory-IFR-Ogde
Purchase Order: AL137633
Project Manager: **Non-Responsive**

Analytical Results

Sample ID: 633-05		Media: Lead Dust Wipe	Collected: 09/17/2013
Lab ID: 1326042005		Sampling Location: Ogden Armory-IFR-Ogd	Received: 09/17/2013
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 100 cm²	Prepared: 09/18/2013 Analyzed: 09/18/2013
Analyte	ug/sample	ug/ft²	RL (ug/sample)
Nickel	<0.25	<2.3	0.25
Zinc oxide	28	260	16

Sample ID: <u>633-06</u>		Media: Lead Dust Wipe	Collected: 09/17/2013
Lab ID: 1326042006		Sampling Location: Ogden Armory-IFR-Ogd	Received: 09/17/2013
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 100 cm²	Prepared: 09/18/2013 Analyzed: 09/18/2013
Analyte	ug/sample	ug/ft²	RL (ug/sample)
Cadmium	<0.075	<0.70	0.075
Chromium	<0.25	<2.3	0.25
Cobalt	0.076	0.70	0.075
Copper	<1.3	<12	1.3
Iron oxide	<14	<130	14
Lead	<1.3	<12	1.3
Manganese	0.59	5.4	0.13
Nickel	<0.25	<2.3	0.25
Zinc oxide	28	260	16

Sample ID: 633-07		Media: Lead Dust Wipe	Collected: 09/17/2013
Lab ID: 1326042007		Sampling Location: Ogden Armory-IFR-Ogd	Received: 09/17/2013
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 100 cm²	Prepared: 09/18/2013 Analyzed: 09/18/2013
Analyte	ug/sample	ug/ft²	RL (ug/sample)
Cadmium	<0.075	<0.70	0.075
Chromium	0.62	5.8	0.25
Cobalt	0.42	3.9	0.075
Copper	4.1	38	1.3
Iron oxide	1200	11000	14
Lead	4.7	44	1.3
Manganese	9.1	84	0.13
Nickel	0.95	8.9	0.25
Zinc oxide	42	390	16



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ANALYTICAL REPORT

Workorder: 34-1326042

Client Project ID: AL137633/Ogden Armory-IFR-Ogde

Purchase Order: AL 137633

Project Manager: Non-Responsive

Analytical Results

Sample ID: 633-08		Media: Lead Dust Wipe	Collected: 09/17/2013
Lab ID: 1326042008		Sampling Location: Ogden Armory-IFR-Ogd	Received: 09/17/2013
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 100 cm ²	Prepared: 09/18/2013 Analyzed: 09/18/2013
Analyte	ug/sample	ug/ft ²	RL (ug/sample)
Cadmium	<0.075	<0.70	0.075
Chromium	<0.25	<2.3	0.25
Cobalt	<0.075	<0.70	0.075
Copper	<1.3	<12	1.3
Iron oxide	<14	<130	14
Lead	<1.3	<12	1.3
Manganese	0.55	5.1	0.13
Nickel	<0.25	<2.3	0.25
Zinc oxide	24	230	16

Comments

Workorder: 1326042

The reported results for iron (III) oxide and zinc oxide are based upon analysis for elemental iron and zinc that have been calculated by mathematical conversion of the elemental result using the molecular weight ratio and molar ratio of each element to each oxide. The reported values presume that all iron and zinc present are in the form of iron (III) oxide and zinc oxide.

The ug iron/sample results were converted to ug iron (III) oxide/sample by dividing the ug iron/sample by 2, next multiplying by 159.6922, and then dividing by 55.847. Where, 2 is the molar ratio of iron to iron (III) oxide, 159.6922 is the MW for iron (III) oxide, and 55.847 is the MW for iron. Note the chemical formula for iron (III) oxide is Fe₂O₃.

The ug zinc/sample results were converted to ug zinc oxide/sample by multiplying ug zinc/sample by 81.3894 and dividing by 65.39. Where, 81.3894 is the MW for zinc oxide and 65.39 is the MW for zinc. Note the chemical formula for zinc oxide is ZnO.

Quality Control: NIOSH 7300 Mod. - (HBN: 113910)

The lead dust wipe LMB 353235 was above the reporting limit for manganese (0.467 µg/sample) and zinc (33.8 µg/sample) so the LCS 353236 and LCSD 353237 results have been media blank corrected for manganese and zinc with LMB 353235.

The MCE LRB 353239 was above the reporting limit for zinc (1.07 µg/sample) so the zinc results for LMB 353240, LCS 353241, LCSD 353242, and field samples 1325667001 and 1325667002 have been reagent blank corrected for zinc with LRB 353239.

The MCE LMB 353240 was still above the reporting limit for zinc (0.670 µg/sample) after reagent blank correction so the LCS 353241 and LCSD 353242 results have been media blank corrected for zinc with LMB 353240.

Report Authorization

Method	Analyst	Peer Review
NIOSH 7300 Mod.	Non-Responsive	Non-Responsive

Laboratory Contact Information

ALS Environmental
960 W Levoy Drive
Salt Lake City, Utah 84123

Phone: (801) 266-7700
Email: alsit.lab@ALSGlobal.com
Web: www.alssl.com



ANALYTICAL REPORT

Workorder: 34-1326042

Client Project ID: AL137633/Ogden Armory-IFR-Ogde

Purchase Order: AL137633

Project Manager: Non-Responsive

General Lab Comments

The results provided in this report relate only to the items tested.
Samples were received in acceptable condition unless otherwise noted.
Samples have not been blank corrected unless otherwise noted.
This test report shall not be reproduced, except in full, without written approval of ALS.

ALS provides professional analytical services for all samples submitted. ALS is not in a position to interpret the data and assumes no responsibility for the quality of the samples submitted.

All quality control samples processed with the samples in this report yielded acceptable results unless otherwise noted.

ALS is accredited for specific fields of testing (scopes) in the following testing sectors. The quality system implemented at ALS conforms to accreditation requirements and is applied to all analytical testing performed by ALS. The following table lists testing sector, accreditation body, accreditation number and website. Please contact these accrediting bodies or your ALS project manager for the current scope of accreditation that applies to your analytical testing.

Testing Sector	Accreditation Body (Standard)	Certificate Number	Website
Environmental	ACCLASS (DoD ELAP)	ADE-1420	http://www.aiclasscorp.com
	Utah (NELAC)	DATA1	http://health.utah.gov/lab/labimp/
	Nevada	UT00009	http://ndep.nv.gov/bsdwlabservice.htm
	Oklahoma	UT00009	http://www.deq.state.ok.us/CSDnew/
	Iowa	IA# 376	http://www.iowadnr.gov/InsideDNR/RegulatoryWater.aspx
	Florida (TNI)	E871067	http://www.dep.state.fl.us/labs/bars/sas/qa/
	Texas (TNI)	T104704456-11-1	http://www.tceq.texas.gov/field/qa/lab_accred_certif.html
Industrial Hygiene	AIHA (ISO 17025 & AIHA IHLAP/ELLAP)	101574	http://www.aihaaccreditedlabs.org
Lead Testing:			
CPSC	ACCLASS (ISO 17025, CPSC)	ADE-1420	http://www.aiclasscorp.com
Soil, Dust, Paint ,Air	AIHA (ISO 17025, AIHA ELLAP and NLLAP)	101574	http://www.aihaaccreditedlabs.org
Dietary Supplements	ACCLASS (ISO 17025)	ADE-1420	http://www.aiclasscorp.com

Definitions

LOD = Limit of Detection = MDL = Method Detection Limit, A statistical estimate of method/media/instrument sensitivity.

LOQ = Limit of Quantitation = RL = Reporting Limit, A verified value of method/media/instrument sensitivity.

ND = Not Detected, Testing result not detected above the LOD or LOQ.

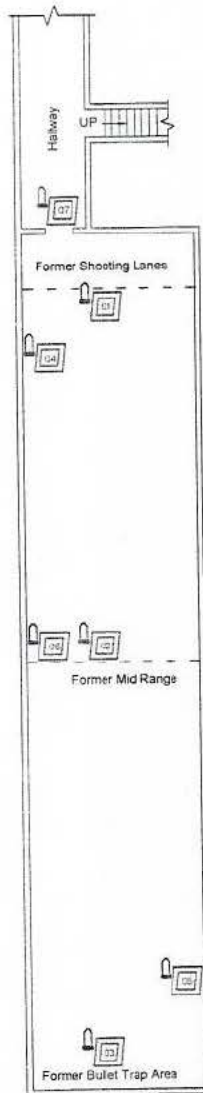
** No result could be reported, see sample comments for details.

< This testing result is less than the numerical value.

() This testing result is between the LOD and LOQ and has higher analytical uncertainty than values at or above the LOQ.

APPENDIX D

Drawing: Location of Lead Wipe Sample Locations

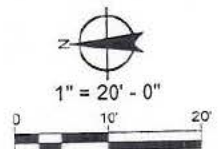


Explanation



Lead Sample Locations & Numbers

Lead Wipe Sample Locations		
Sample Number	Sample Name	Location
01	633-01	Former Firing Lane Floor
02	633-02	Former Mid Range Floor
03	633-03	Former Bullet Trap Floor
04	633-04	Former Firing Lane North Wall
05	633-05	Former Bullet Trap South Wall
06	633-06	Former Mid Range North Wall
07	633-07	Entryway To Former Range
08	633-08	Blank

NOTE: All Wipe Sample Sizes are 100 cm²

Utah Army National Guard
Converted Indoor Firing Range
625 East 5300 South
Ogden, Utah

Lead Wipe Sample Locations

PROJECT No: AL137633
SHEET NO: 1 of 1
DRAWN BY: Non-Responsive
DATE: 10-01-2013
REVIEWED BY:
DATE:

APPENDIX E
IHSW Violation Log



Industrial Hygiene Southwest

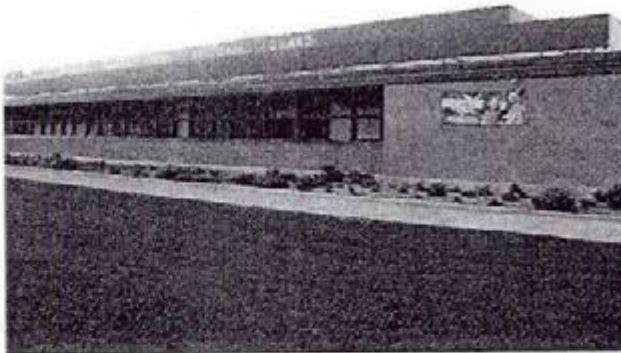
Violation Inventory Log

LOG OF SCHEDULE OF CORRECTIVE ACTION - COMPLIANCE WITH SAFETY AND HEALTH STANDARDS Ogden Armory (IFR), Utah

CONTROL NUMBER	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/NCOIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
CLOSED <input type="checkbox"/> UTOA-091713-3.2	The lead wipe sample collected on the former mid-range floor showed a lead concentration of 54 µg/ft², the lead wipe sample collected on the former bullet trap floor showed a lead concentration of 75 µg/ft², the and the lead concentration on the entryway floor sample was 44 µg/ft².	Ogden Converted Indoor Firing Range	3	1. Clean the floors of the converted IFR and the entryway to achieve a lead level less than 40 µg/ft² following the guidance in the attached SOPs. 2. Perform post-cleanup wipe sampling to ensure lead levels are within the criteria outlined in the IHSW SOP for Armory Cleanup.					IHSW Lead SOP & Prudent Industrial Hygiene Practice

APPENDIX F

Photo Log



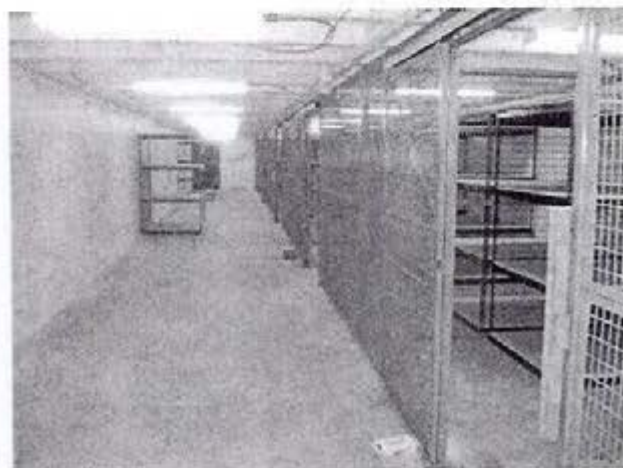
Photograph 1
John Browning Armory, Ogden, Utah, Front,
Exterior



Photograph 2
John Browning Armory, Ogden, Utah, Rear,
Exterior



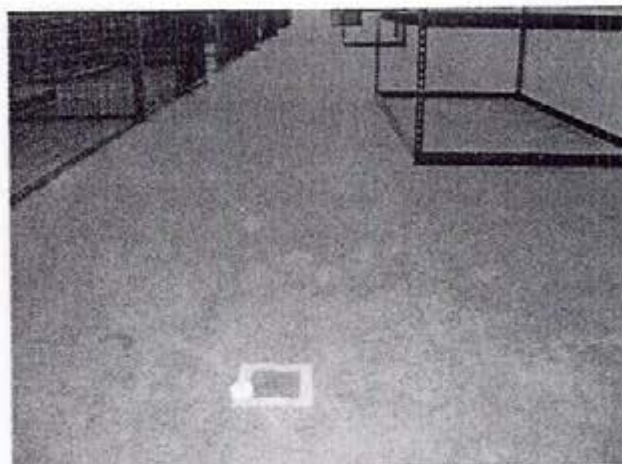
Photograph 3
Entryway to Indoor Firing Range



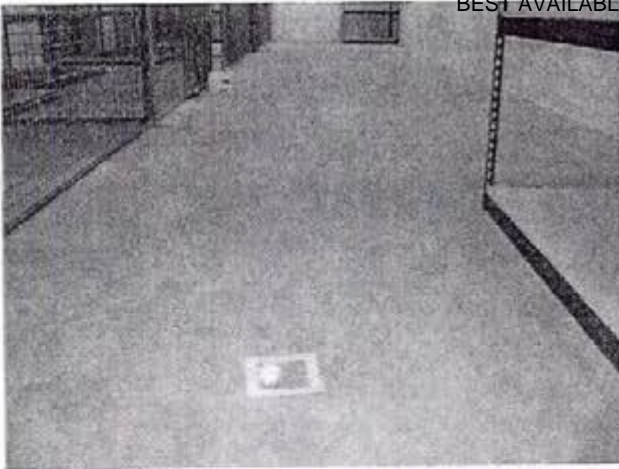
Photograph 4
View of Former Indoor Firing Range from
Former Bullet Trap to Shooting Lanes



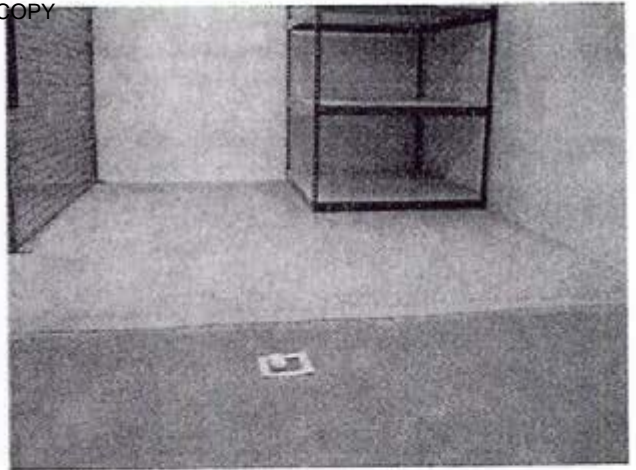
Photograph 5
View of Indoor Firing Range from Former
Shooting Lanes to Former Bullet Trap



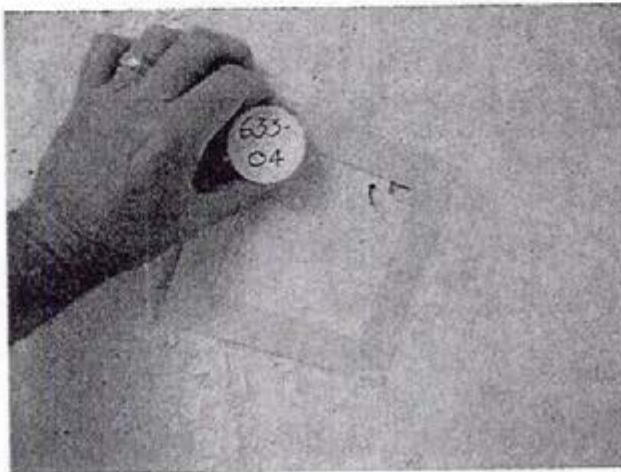
Photograph 6
Location of Lead Wipe Sample Number 633-01



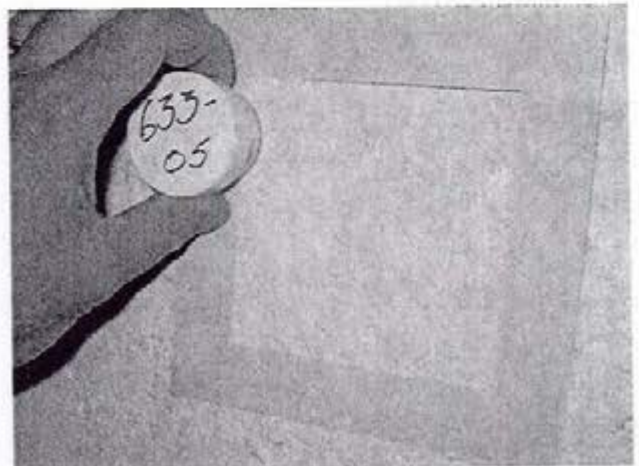
Photograph 7
Location of Lead Wipe Sample Number 633-02



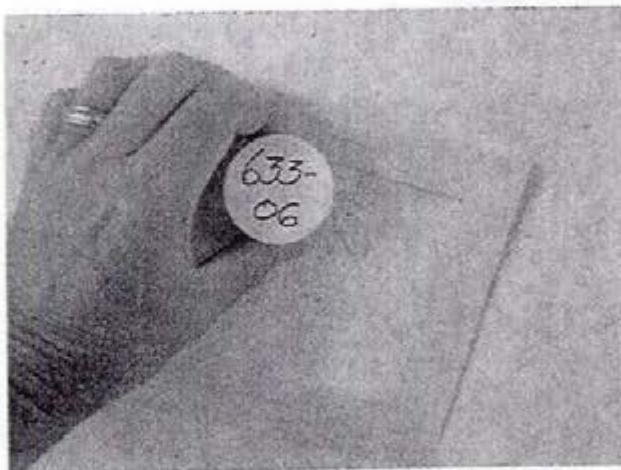
Photograph 8
Location of Lead Wipe Sample Number 633-03



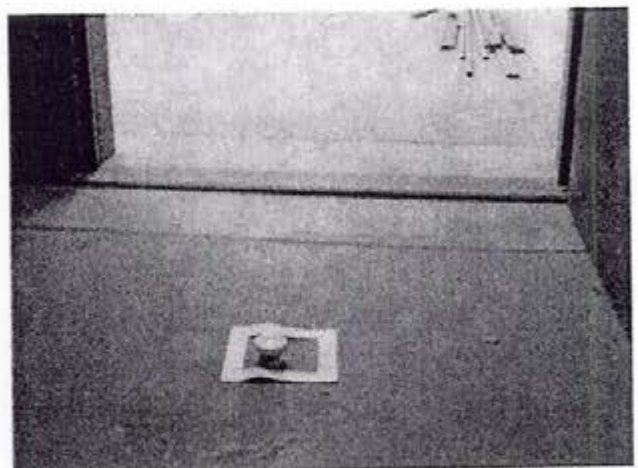
Photograph 9
Location of Lead Wipe Sample Number 633-04



Photograph 10
Location of Lead Wipe Sample Number 633-05



Photograph 11
Location of Lead Wipe Sample Number 633-06



Photograph 12
Location of Lead Wipe Sample Number 633-07

APPENDIX G

Field Notes

FACILITY INFORMATION
(Information listed in First Section)
(1st Few Paragraphs/Pages of Report)

1. Date Prepared: September 17, 2013
2. Names (and Company Name) of Personnel Conducting Industrial Hygiene Site Assistance Visit:
Non-Responsive IHI Environmental
3. Facility Name and Brief Summary of Primary Activities Conducted at Facility: John Browning Armory, Ogden, Utah
4. Facility Address: 625 East 5300 South, Ogden, Utah 84405
5. Primary Unit Assigned to Facility (Ensure to capture and provide Unit Identification Code (UIC)): **Non-Responsive** - 19th Special Forces Group Support Battalion
6. Co-Tenant Units Assigned or Working Within Facility (LIST ALL): Recruiting Retention, Honor Guard, Family Support, Recruiting (RSP)
7. Square Ft. Area of Facility: ~35,000 ft²
8. Work Schedule: 0700-1700 hours Monday-Thursday Every Friday off
9. Number of work bays: 0
10. Equipment Density and Type: N/A
 - a. List Equipment Nomenclature Serviced or Maintained at Facility: N/A
 - b. List Total Number for Each Nomenclature Serviced or Maintained at Facility: N/A
11. Total Number of Personnel: 20
12. No. of Admin. Personnel (Include Status – AGR, ADSW, Family Support
13. No. of Maintenance Personnel (Include Status –None
14. Total Number of Personnel Enrolled in the Hearing Conservation Program: 0
15. Total Number of Personnel Enrolled in the Respiratory Protection Program: 0
16. Total Number of Personnel Enrolled in the Medical Surveillance Program: 0

PAGE 1 of 2

17. Total Number of Personnel Enrolled in the Vision Program: 0

18. Facility Commander: **Non-Responsive**

a. Email address, Commercial Telephone Number and Unit Assigned to:
Non-Responsive (801) 476-3813, 19th Special Forces Group Support
Battalion

19. Safety Officer: Unknown **Non-Responsive** was not present during this survey

a. Email Address, Commercial Telephone Number and Unit Assigned to:

20. Facility Telephone Number: (801) 476-3804

Summary of Recommendations for UTARNG Ogden Armory, IFR

4.0 RECOMMENDATIONS

1. Clean the floors of the converted IFR and the entryway to achieve a lead level less than $40 \mu\text{g}/\text{ft}^2$ following the guidance in the attached SOPs.
2. Perform post-cleanup wipe sampling to ensure lead levels are within the criteria outlined in the IHSW SOP for Armory Cleanup.

APPENDIX I

IHSW Lead Cleanup SOP

Lead

CLEANUP & FOLLOW-UP HOUSEKEEPING
RECOMMENDATIONS

Materials Needed:

1. Cloth Mop head (s) & Mop head holder(s) with handle.
2. Mop bucket (s) with wringer.
3. Clean cotton rags and sponges.
4. Disposable gloves
5. Large barrel (55 gal.) to store wastewater in after changing out of dirty scrub water.
6. Disposable overshoes or rubber boots. Personnel conducting cleaning operations should not take clothes, boots, etc., home for laundering.
7. HEPA vacuum
8. Six (6) mill plastic bags to dispose of waste.
9. Waste water containers.

Disposal of Waste Water and Cleaning Materials:

1. *NOTE:* Consult with Local Army National Guard Environmental Office prior to taking any collection, disposal or wiping activities commence. Each state and territory may have additional regulatory guidance on collection, storage and disposal of wastewater.
2. Mop heads should be disposed of after initial cleanup, unless otherwise advised by Environmental office personnel. Note: thorough cleaning of mop heads may be sufficient enough to reuse on future Armory cleanups but check with local Environmental Office.
3. Disposable gloves should be treated as hazardous waste.
4. Soiled cotton rags should be treated as hazardous waste.
5. Wash water contaminated with Lead can be collected and allowed to slowly evaporate leaving Lead deposits/sludge that may be collected in plastic containers, placed in metal drums, and stored for future delivery to an authorized hazardous waste disposal site.

- a. Drums shall be properly labeled to identify contents In-Accordance With (IAW) Federal, State and local regulatory guidance.
- b. Disposal of containerized waste shall be coordinated IAW State hazardous waste program requirements.
- c. The Environmental Office shall coordinate removal and disposal of all containerized hazardous waste through established waste streams.

Post-Cleanup Precautionary Measures:

1. Thoroughly wash hands with soap and water.
2. Rinse off rubber boots with soap and water, capturing wastewater for collection into established waste stream. If personnel choose to use over shoes for protection, dispose of overshoes into waste stream. NOTE: This recommendation is for initial clean up activities and PPE requirements may be reduced after it has been determined non-hazardous levels have been achieved.
3. Wash BDU's or personal clothing separately from children's clothes.

NOTE: No eating, drinking or cosmetics allowed during cleanup procedures (these may be allowed after washing of hands/face and done outside of cleanup area)

NOTE: Avoid blowing, shaking or like actions which could potentially disperses lead dust. Dry sweeping, dusting, wiping or blowing with compressed air shall not be permitted

Initial Cleanup:

1. Use a vacuum cleaner equipped with a HEPA exhaust filter. HEPA vacuum all surfaces in the room (ceiling, walls trim, and floors). Start with the ceiling and work down, moving toward the entry door. Completely clean each room before moving on.
2. Prepare water and detergent for the wipe down phase, according to manufactures recommendations.

3. Wet wipe, with cotton rags or sponge, any horizontal, diagonal or vertical surfaces up six (6) feet from floor surfaces using hot water and "Spic-n-Span" or an equivalent product.
 - a. Rinse out cleaning cloths thoroughly and frequently.
 - b. Change out cleaning water as necessary.

NOTE: If walls to be cleaned show signs of deterioration, e.g., chipping or crumbling paint, in which wiping, scrubbing, or disrupting might potentially increase or spread contamination, then this portion of the clean up should be avoided.

4. Now prepare water and detergent (e.g. Spic N Span, Mr. Clean, Pine Sol) for the mopping phase, according to manufactures recommendations, which should be found on the products label for general clean up.
 - a. Change out water frequently (when water appears dirty)
 - b. Rinse out mop heads frequently to prevent contamination of dirty water.
5. Cover entire drill floor surface with above prescribed water and detergent.
6. Final rinse should be with clean water only - -after mop heads have been cleaned.

Recommended Follow-up Housekeeping Practices *after Clearance sampling of cleaned area is performed by certified personnel:*

1. Floor cleaning and dusting should be accomplished using the wet method described in Initial Armory Cleanup SOP.

Note: Only exception to these wet cleaning procedures would be the use of a chemically treated dust floor mop. This can be used for follow-up armory cleaning by sweeping of large particles of dirt and paper.

- a. Pre-treated (chemically treated) dust floor mop will limit dust particles from being disbursed into the surround atmosphere.

SOP FOR ARMORY CLEANUP

1. General.

1.1 Objective.

1.1.1. The purpose of this SOP (Standard Operating Procedure) is once a lead dust hazard has been identified and excess exists, how to lower the level of lead dust to afford a safe building, which is clean enough for all personnel exposed to this potential hazard.

1.2 Description of An Armory.

1.2.1 Armories provide a space for units to support and train soldiers.

1.2.2 The facility is utilized by Army National Guard (ARNG) family members, usually in a recreational or festive setting. This may include all members and all ages of a given family.

1.2.3 The Armory can be used for community activities, which may include all age levels.

1.3 Responsibilities.

1.3.1 It is the ARNG specialty branches, e.g., Industrial Hygiene (IH), Occupational Health & Safety's, responsibility to notify occupants of any known health risk within their facility.

1.3.2 It is the building managers responsibility to warn any users of this facility about potential hazards by, e.g., verbal, written or warning signs.

1.3.3 The ultimate responsibility falls back on the TAG of each state.

2. Background.

2.1 IH Investigation.

2.1.1 The IH community found unexpectedly high levels of lead dust during a normal IH investigation (survey) in an armory that had an Indoor Firing Range (IFR) within it. Wipe samples were taken in another armory without an IFR, only to find that this armory had higher than expected levels of lead dust, also.

2.1.2 Each ARNG Regional Industrial Hygienist has planned to survey all their armories spearheaded by the Midwest regional office, to determine the magnitude of these findings.

2.1.3 About 2/3rds of the armories tested so far, did not have "a clean bill of health". Now the IH community will attempt to discern where the contamination is coming from and also, give guidance on how to deal with these contaminant.

2.1.4 Air sampling of the armories tested have shown very low levels of lead dust in the breathing area. Dust wipe samples have varied in quantities present but have exceeded the EPA's floor standard and the ARNG IFR guidelines.

3. Relevant Standards and Guidelines.

3.1 Airborne Lead.

3.1.1 The Occupational Safety and Health Administrations (OSHA) Permissible Exposure Level (PEL) for airborne lead is **50 micrograms per cubic meter (ug/m3)**, averaged over an 8-hour work shift. The OSHA action level is 30 ug/m3.

3.2 Blood Lead Level (BLL).

3.2.1 OSHA requires that personnel who are exposed to airborne lead above the PEL be offered medical surveillance that includes blood lead level monitoring. Personnel with total **BLL above 50 micrograms per deciliter (ug/dl)** of blood are required to be removed from occupational lead exposures until the BLL drops back to 40.

3.2.2 Women who may become pregnant who are exposed to lead should consult with their physician. Fetal and newborn BLLs are similar to those of

the mother. The Center for Disease Control and Prevention considers levels above 10 ug/dl in children under 6 to be elevated BLLs.

3.3 Lead in Surface Dust.

3.3.1 There are no established standards for lead levels in dust within buildings other than those used by children under 6. The Environmental Protection Agency (EPA) along with Housing and Urban Development (HUD) floor dust lead level standard (which is currently 40 ug/ft²) does not apply to workplace surfaces, and would be impossible to maintain in many industrial facilities. (EPA 40 CFR Part 745)

3.3.1.1 The EPA interior windowsill standard is 250 ug/ft².

3.3.1.2 The EPA standard for window trough is 400 ug/ft².

3.3.2 OSHA cites a level of 200 ug/ft² as guidance to its own inspectors for evaluating the cleanliness of lunchroom and locker room surfaces that are supposed to be kept as clean as possible.

3.4 Lead in Paint.

3.4.1 EPA's standard for lead-based paint or other surface coatings that contain lead equal to or exceeding 1.0 milligram per square centimeter (mg/cm²) or 0.5 percent (%) by weight or 5000 parts per million (ppm) by weight.

4. Indoor Firing Ranges (IFR).

4.1 Relevant Standards and Guidelines.

4.1.1 OSHA guidelines stated above (see 3.3.2) are the recommended working levels to achieve in an active IFR.

4.1.2 NGR 385-10 guideline reflects that of OSHA at 200 ug/ft² for lead dust on surfaces.

4.2 Maintenance and Cleaning.

4.2.1 Follow NGR 385-10, along with SOP found in All States Letter (Log Number P00-0059 along with All States Letter (Log Number P01-0075)

the mother. The Center for Disease Control and Prevention considers levels above 10 ug/dl in children under 6 to be elevated BLLs.

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3.4 Lead in Paint.

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4.2 Maintenance and Cleaning.

4.2.1 Follow NGR 385-10, along with SOP found in All States Letter (Log Number P00-0059 along with All States Letter (Log Number P01-0075)

addressing Policy and Responsibilities for Inspection, Evaluation and Operation of ARNG Indoor Firing Ranges. Also, utilize AR 385-63 Range Safety.

4.2.2 Cross contamination is a concern where Armories and IFR's are co-located. Keeping an IFR dust level at 200 ug/ft² does not meet the 40 ug/ft² required on floor surfaces for children 6 and under. Tracking lead dust to other parts of the armory is a concern and should be addressed by the facilities manager and the range custodian.

5. Converted/Closed Indoor Firing Ranges.

5.1 Closed IFR.

5.1.1 Closed IFR's should be not utilized for anything, e.g. storage, office space or anything else. This should be a voided space with no entry. The IFR should have been cleaned to at least 200 ug/ft² before closure to prevent contamination via air stream or other means.

5.1.2 Should be locked and signage placed on entryway to warn personnel of lead contents.

5.2 Converted IFR-- NG PAM 385-16 "Guidelines for converting of IFR."

5.2.1 These spaces should have been cleaned and taken to lowest possible level, e.g. 0-40 ug/ft², and then the proper sealant applied, retested via wipe samples. The results should be below the pre-sealant sample results and as close to zero as possible.

5.2.2 The backstop and ventilation system should have been removed prior to cleaning of the range.

5.2.3 If all of this wasn't accomplished initially and you have high lead levels after this Baseline survey, or if it was accomplished, you need to talk to the original contractor who was responsible for the cleanup or get the area re-cleaned by a different contractor. Converted IFR's have to meet certain criteria before they can be changed into something that will be utilized for an office, storage, or something else where contamination to an individual may occur.



ARMY NATIONAL GUARD INDUSTRIAL HYGIENE – SOUTHWEST

Guam • Hawaii • California • Oregon • Washington • Nevada • Arizona • Idaho • Utah • Wyoming • Montana • New Mexico • Nebraska

Industrial Hygiene Site Assistance Visit

Old St. George Armory
285 South 400 East
St. George, UT 84770

10510 Superfortress Avenue, Suite C, Mather, CA 95655 (916) 854-1491



BEST AVAILABLE COPY
DEPARTMENT OF THE ARMY AND AIRFORCE
NATIONAL GUARD BUREAU
INDUSTRIAL HYGIENE SOUTHWEST
10510 Superfortress Ave, Ste. C
Mather, CA 95655

ARNG-CSG-IHSW

23 January 2013

MEMORANDUM THRU Utah Army National Guard, ATTN:
Minuteman Drive, UT 84020-1776

(OHN), 12953 S.

FOR Commander, Old St. George Armory, 285 South 400 East, St. George, UT 84770

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for Old St. George Armory, 285 South 400 East, St. George, UT conducted on 11 July 2012.

1. References. See survey report.

2. General.

a. At the request of the NGB Industrial Hygiene, Southwest (IHSW) Region, an Industrial Hygiene Site Assistance Visit and cursory review of safety related items and programs was conducted at the Old St. George Armory, 285 South 400 East, St. George, UT on 11 JUL 2012.

b. The findings and recommendations in this Executive Summary are controlling and supersede all recommendations in the contractor report (reference Attachment II). However, IHSW concurs with the observations and findings within the attached contractor report.

c. Risk Assessment Codes (RAC) provided in this report have been derived from two sources: Deriving Risk Assessment Codes (RAC's) for Health Hazards (Ref: DOD Instruction 6055.1) and AR 385-10, The Army Safety Program.

d. Use of trademark names in the attached report, or this Executive Summary, does not imply Army National Guard endorsement of any product.

3. Findings. See survey report.

4. Commendable.

a. The facility was generally clean and orderly and personnel were helpful during this SAV.

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHSW) for Old St. George Armory, 285 South 400 East, St. George, UT conducted on 11 July 2012.

5. Observations / Recommendations.

NOTE: This section provides conclusions and recommendations for the findings and observations made within the attached contractors report. The paragraphs are numbered to correspond to the sections where they were first noted. (i.e., paragraph 2.1a represents the 2.1a located within the contractors report.

a. This facility is currently closed and a newer armory in St. George is being occupied by UT ARNG personnel at 1710 East 4150 South in St. George, Utah.

6. Violation Correction Log.

a. IHSW has provided a Violation Correction Log derived from the observations from this visit. IHSW recommends the following:

1. Commander(s) assign an Action OIC/NCOIC, Suspense Date for completion, and Estimated Cost(s) to ensure item completion and corrective status is briefed during quarterly (or monthly) Safety Meetings/Councils until resolved.

2. Corrective measures should be implemented and accomplished at the lowest levels possible. Hazards and Corrective Measures that cannot be corrected at the facility level, and require assistance from higher headquarters or from the state level, should be elevated to the Quarterly State/BN Safety Council Meeting for resolution.

3. Recommend a representative from the facility attend all quarterly/monthly meetings to ensure the appropriate emphasis and corrective actions are followed for hazard resolution and abatement of the observations made during this visit.

4. Retain entries of the items corrected, or closed, for future reference. This may be accomplished by posting completed items within the Corrected Hazard Sheet portion of the Excel Violation Correction Log Workbook we've provided.

5. The preferred method to document and track identified hazards for resolution is for their entry into the Reserve Component Automation System – Safety and Occupational Health (RCAS-SOH) Program.

b. IHSW recommends further program refinement through written documentation for standardized guidance to the personnel performing the processes. Conducting Hazard

ARNG-CSG-IHSW

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for Old St. George Armory, 285 South 400 East, St. George, UT conducted on 11 July 2012.

Assessments consistent with 29 Code of Federal Regulations (CFR) 1910.132, General Requirements for Personal Protective Equipment and AR 40-5, Preventive Medicine, would provide this continued program refinement.

7. Hazard Assessment/Job Safety Analysis (JSA).

a. Documenting the Hazard Assessments provides a method to obtain initial and periodic review from the Industrial Hygiene, Occupational Health and Safety Professions located at the JFHQ/HQ/state level.

b. The Hazard Assessments should be used as written training materials for the new, transfer and unit personnel working under the auspice of the facility.

c. IHSW recommends facility supervisory staff and facility personnel conduct initial Hazard Assessments outlined in AR 40-5, Army Preventive Medicine (Section V) and 29 CFR 1910.132 and submit for review and obtain approval from the state Industrial Hygiene, Occupational Health and Safety Professions.

d. We have provided an appendix with Hazard Assessments (HA) examples of some of this facilities operations. Additional operations can utilize this format to design HA not observed during this SAV.

e. An integral and important factor of the Hazard Assessment/JSA process is for the review and guidance from qualified Safety, Occupational Health and Industrial Hygiene professions located at the higher headquarters level or state level. For this reason, the Hazard Assessments (to include all pertinent and supporting documents) should be completed by the facility personnel and forward to the Utah Army National Guard Industrial Hygiene, Occupational Health and Safety Office for final review and approval (signature).

f. Job Safety Analysis (JSA's)/Hazard Assessments.

NOTE: The Hazard Assessments can be used for monthly meetings to brief/train, and document large group training events and activities.

8. IHSW recommends the Senior Unit Commander of this Facility and any Co-Tenant Organizations or Units, review and provide assistance with implementation of these recommendations. This will educate the chain of command and allow the unit or co-tenant

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHS AV) for Old St. George Armory, 285 South 400 East, St. George, UT conducted on 11 July 2012.

organizations to take any necessary precautions or actions required by them and their personnel.

9. To assist you with execution of your responsibilities in correcting the observations noted, we encourage you to consult with the State Safety Manager, Occupational Health Manager and Industrial Hygiene professions located and/or authorized within the State Safety and Occupational Health Office.

10. For additional information please contact the undersigned at (916) 854-1491 or via email at

Non-Responsive

FOR
Non-Responsive

Industrial Hygiene



December 17, 2012

Non-Responsive

H.
Industrial Hygiene Southwest
10510 Superfortress Avenue, Suite C
Mather, California 95655

Dear **Non-Responsive**

On June 27, 1994, the City of St. George purchased the former St. George Armory located at 285 South 400 East in St. George, Utah 84770.

The City of St. George is now the current owner and has converted the building into the City of St. George Recreation Center.

The Utah Army National Guard is no longer the owner of this building.

Sincerely,

Non-Responsive

Leisure Services Department

LEISURE SERVICES
86 South Main Street, St. George, Utah 84770
Phone: (435) 827-4500
Fax: (435) 827-4508
www.sgcity.org

DIRECTOR

MAYOR

CITY MANAGER

CITY COUNCIL

Gail Borman, Dennis Hughes
Benjamin Nickle, Jon Pike

BEST AVAILABLE COPY



IH ASSISTANCE VISIT

**Utah Army National Guard
St. George Armory II
285 South 400 East
St. George, Utah 84770**

January 4, 2012

Prepared for:

**Industrial Hygiene Southwest
10510 Superfortress Avenue, Suite C
Mather, California 95655**

Prepared by:

Non-Responsive

Senior Project Manager

Reviewed by:

Non-Responsive

Project #AL127198

640 EAST WILMINGTON AVENUE

SALT LAKE CITY, UT 84106

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FAX: 801-466-9616

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SALT LAKE CITY

EMERYVILLE

PHOENIX

DENVER

SEATTLE



December 17, 2012

Industrial Hygiene Southwest
10510 Superfortress Avenue, Suite C
Mather, California 95655

Non-Responsive

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The City of St. George is now the current owner and has converted the building into the City of St. George Recreation Center.

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Sincerely,

Non-Responsive

Leisure Services Department

LEISURE SERVICES

86 South Main Street St. George, Utah 84770
Phone: (435) 627-4600
Fax: (435) 627-4600
www.stgeorgeutah.gov

DIRECTOR

MAYOR

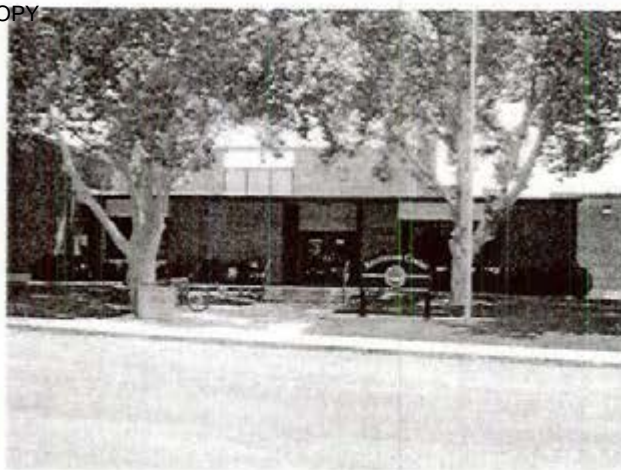
CITY MANAGER

CITY COUNCIL

Garth Ruppel, Chairman
Benjamin Finkbeiner, Vice Chair



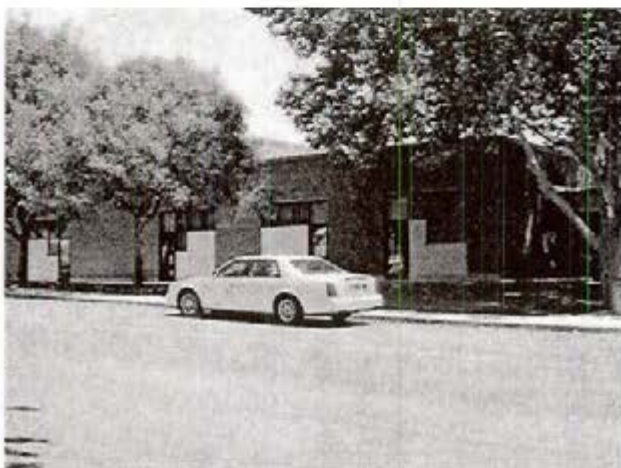
Photograph 1
View of sign depicting City of Saint George Recreation Center, formerly the St. George, Utah, Armory



Photograph 2
Another view of sign depicting City of Saint George Recreation Center, formerly the St. George Armory



Photograph 3
Overall view of building housing the City of Saint George Recreation Center, formerly the St. George, Armory



Photograph 4
Closer view of the north side of the building housing the City of Saint George Recreation Center, formerly the St. George Armory



ARMY NATIONAL GUARD INDUSTRIAL HYGIENE - SOUTHWEST

Guam • Hawaii • California • Oregon • Washington • Nevada • Arizona • Idaho • Utah • Wyoming • Montana • New Mexico • Nebraska

Industrial Hygiene Site Assistance Visit

Orem Armory
951 South Geneva Road
Orem, UT 84058

10510 Superfortress Avenue, Suite C, Mather, CA 95655 (916) 854-1491



DEPARTMENT OF THE ARMY AND AIRFORCE
NATIONAL GUARD BUREAU
INDUSTRIAL HYGIENE SOUTHWEST
10510 Superfortress Ave, Ste. C
Mather, CA 95655

ARNG-CSG-IHSW

8 November 2012

MEMORANDUM THRU Utah Army National Guard, Deputy State Surgeon (DSS), 12953 S. Minuteman Drive, Draper, Utah 84020

FOR Commander Orem Armory, 951 South Geneva Road, Orem, UT 84058

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) on the Orem Armory 951 South Geneva Road, Orem, UT conducted on 27 June 2012.

1. References. See survey report.

2. General.

a. At the request of the NGB Industrial Hygiene, Southwest (IHSW) Region, an Industrial Hygiene Site Assistance Visit and cursory review of safety related items and programs was conducted at the Orem Armory 951 S. Geneva Rd., Orem, UT on 27 JUN 2012.

b. The findings and recommendations in this Executive Summary are controlling and supersede all recommendations in the contractor report (reference Attachment II). However, IHSW concurs with the observations and findings within the attached contractor report.

c. Risk Assessment Codes (RAC) provided in this report have been derived from two sources: Deriving Risk Assessment Codes (RAC's) for Health Hazards (Ref: DOD Instruction 6055.1) and AR 385-10, The Army Safety Program.

d. Use of trademark names in the attached report, or this Executive Summary, does not imply Army National Guard endorsement of any product.

3. Findings. See survey report.

4. Commendable.

a. The facility was generally clean and orderly and personnel were helpful during this SAV.

5. Observations / Recommendations.

NOTE: This section provides conclusions and recommendations for the findings and observations made within the attached contractors report. The paragraphs are numbered to correspond to the sections where they were first noted. (i.e., paragraph 2.1a represents the 2.1a located within the contractors report.

a. Secure compressed gas cylinders to prevent accidental dislodgement, becoming a missile hazard. (para. 4.10.7) (RAC 3)

ARNG-CSG-IHSW

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) on the Orem Armory
951 South Geneva Road, Orem, UT conducted on 27 June 2012.

- b. Upgrade the duct velocity to 500 fpm (feet per minute) for the exhaust fan found over the kitchen oven/stove. (para. 4.8) (RAC 4)
- c. Find asbestos survey or have one accomplished and provide assigned personnel with asbestos awareness training. (para. 4.4) (RAC 4)

6. Violation Correction Log.

a. IHSW has provided a Violation Correction Log derived from the observations from this visit. IHSW recommends the following:

1. Commander(s) assign an Action OIC/NCOIC, Suspense Date for completion, and Estimated Cost(s) to ensure item completion and corrective status is briefed during quarterly (or monthly) Safety Meetings/Councils until resolved.
 2. Corrective measures should be implemented and accomplished at the lowest levels possible. Hazards and Corrective Measures that cannot be corrected at the facility level, and require assistance from higher headquarters or from the state level, should be elevated to the Quarterly State/BN Safety Council Meeting for resolution.
 3. Recommend a representative from the facility attend all quarterly/monthly meetings to ensure the appropriate emphasis and corrective actions are followed for hazard resolution and abatement of the observations made during this visit.
 4. Retain entries of the items corrected, or closed, for future reference. This may be accomplished by posting completed items within the Corrected Hazard Sheet portion of the Excel Violation Correction Log Workbook we've provided.
 5. The preferred method to document and track identified hazards for resolution is for their entry into the Reserve Component Automation System – Safety and Occupational Health (RCAS-SOH) Program.
- b. IHSW recommends further program refinement through written documentation for standardized guidance to the personnel performing the processes. Conducting Hazard Assessments consistent with 29 Code of Federal Regulations (CFR) 1910.132, General Requirements for Personal Protective Equipment and AR 40-5, Preventive Medicine, would provide this continued program refinement.

7. Hazard Assessment/Job Safety Analysis (JSA).

- a. Documenting the Hazard Assessments provides a method to obtain initial and periodic review from the Industrial Hygiene, Occupational Health and Safety Professions located at the JFHQ/HQ/state level.
- b. The Hazard Assessments should be used as written training materials for the new, transfer and unit personnel working under the auspice of the facility.
- c. IHSW recommends facility supervisory staff and facility personnel conduct initial Hazard Assessments outlined in AR 40-5, Army Preventive Medicine (Section V) and 29 CFR 1910.132

ARNG-CSG-IHSW

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) on the Orem Armory 951 South Geneva Road, Orem, UT conducted on 27 June 2012.

and submit for review and obtain approval from the state Industrial Hygiene, Occupational Health and Safety Professions.

d. We have provided an appendix with Hazard Assessments (HA) examples of some of this facilities operations. Additional operations can utilize this format to design HA not observed during this SAV.

e. An integral and important factor of the Hazard Assessment/JSA process is for the review and guidance from qualified Safety, Occupational Health and Industrial Hygiene professions located at the higher headquarters level or state level. For this reason, the Hazard Assessments (to include all pertinent and supporting documents) should be completed by the facility personnel and forward to the Utah Army National Guard Industrial Hygiene, Occupational Health and Safety Office for final review and approval (signature).

f. Job Safety Analysis (JSA's)/Hazard Assessments.

NOTE: The Hazard Assessments can be used for monthly meetings to brief/train, and document large group training events and activities.

8. IHSW recommends the Senior Unit Commander of this Facility and any Co-Tenant Organizations or Units, review and provide assistance with implementation of these recommendations. This will educate the chain of command and allow the unit or co-tenant organizations to take any necessary precautions or actions required by them and their personnel.

9. To assist you with execution of your responsibilities in correcting the observations noted, we encourage you to consult with the State Safety Manager, Occupational Health Manager and Industrial Hygiene professions located and/or authorized within the State Safety and Occupational Health Office.

10. For additional information please contact the undersigned at (916) 854-1491 or via email at

Non-Responsive

Non-Responsive

FOR
NGB, IHSW, CIV
Industrial Hygiene



NATIONAL GUARD BUREAU
111 SOUTH GEORGE MASON DRIVE
ARLINGTON VA 22204-1382

ARNG-CSG-P

02 NOV 2012

MEMORANDUM FOR [Redacted] **Non-Responsive** The Adjutant General of Utah 12953 S.
Minuteman Dr, Draper, UT 84020-1776

SUBJECT: Executive Summary for the Industrial Hygiene Survey of Orem Armory at
951 South Geneva Road, Orem, UT 84058 on 27 JUN 2012.

1. Purpose. Industrial Hygiene Southwest Region contracted to have an Annual Industrial Hygiene (IH) survey conducted which would identify, assess, and make recommendations for the reduction or elimination of potential health hazards present in the workplace. This EXSUM provides the most critical recommendations which need to be addressed promptly. The IH Report contains additional findings and recommendations which should be addressed as funding and manpower permit.

2. Findings.

a. The Armory had the following high risk level findings:

1. There were no Risk Assessment Code(s) (RAC 1 or RAC 2) identified during this Industrial Hygiene Survey.

b. The full IH report contains information which can be used in correcting deficiencies, establishing priorities and developing suspense dates.

c. Some locations were not evaluated during this visit. However, additional IH services can be requested to monitor them for potential health hazards when operations are ongoing.

3. Recommendations. A risk assessment code (RAC) has been assigned to each health hazard identified in the report. Each type of RAC (health, safety, ergonomic) uses slightly different matrices to determine the overall severity, however a RAC 1 should be considered Critical; a RAC 2 is Serious. Follow all recommendations made in the attached IH survey report, the Violation Log as well as the following recommendations.

a. No RAC 1, or RAC 2 hazard(s) were identified at this facility.

ARNG-CSG-P

SUBJECT: Executive Summary for the Industrial Hygiene Survey of Orem Armory on 27 June 2012.

4. The technical point of contact is [Non-Responsive] at (775) 771-3956. For follow up information, contact the Occupational Health Manager, [Non-Responsive] [Non-Responsive] at (801) 432-4456.

[Redacted]
[Non-Responsive]

Chief, Industrial Hygiene

CF

Chief, Occupational Health

[Non-Responsive]

DSS, [Non-Responsive] Fairview Dr, Carson City, NV 89701

CFMO, [Non-Responsive] 460 Fairview Dr, Carson City, NV 89701

ASO, [Redacted] 20,000 Army Aviation Dr, Reno, NV 89506

CF w/encl

OHN, [Non-Responsive] 460 Fairview Dr, Carson City, NV 89701

Facility Supervisor, [Non-Responsive] 20,000 Army Aviation Dr, Reno, NV 89506



Industrial Hygiene Southwest
Violation Inventory Log
LOG OF SCHEDULE OF CORRECTIVE ACTION - COMPLIANCE WITH SAFETY AND HEALTH STANDARDS
Orem Armory, Orem, Utah

CONTROL NUMBER	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/NCIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
UTOA-062712-4.4 <input type="checkbox"/>	An asbestos survey could not be located during this IH Assistance Visit	Orem Armory	4	Contract with a licensed firm to perform an asbestos survey and assessment.					1910.1001(d)(3)(i)
UTOA-062712-4.4 <input type="checkbox"/>	Personnel have not been provided with asbestos awareness training.	Orem Armory	4	Based on the findings of this survey, provide awareness training to assigned personnel for the specific types of asbestos in this Armory.					1910.1001(d)(3)(iii)
UTOA-062712-4.8 <input type="checkbox"/>	The kitchen oven/stove exhaust fan has an average duct velocity less than the recommended 500 fpm	Orem Armory/ Kitchen	4	Upgrade the duct velocity to 500 fpm for this exhaust fan					NEPA, Standard 96, Section 8.2.1.1 (2011)
UTOA-062712-4.4.3 <input type="checkbox"/>	Not all fire extinguishers have current monthly and annual maintenance checks	Orem Armory	4	Conduct monthly and annual maintenance checks on all fire extinguishers					1910.157 (d) (2) 1910.157 (e) (2)
UTOA-062712-4.10.6 <input type="checkbox"/>	Emergency evacuation plan is not posted throughout the building	Orem Armory	4	Signs must be posted along the exit access indicating the direction of travel to the nearest exit and exit discharge.					1910.37 (b) (4)
UTOA-062712-4.10.7 <input type="checkbox"/>	Three compressed gas cylinders are not secured from tipping within the storage cage.	Orem Armory	3	Firmly secure compressed gas cylinders against accidental dislodgement					1910.253 (b) (2) (ii)
UTOA-062712-4.10.8 <input type="checkbox"/>	One electrical outlet next to a kitchen sink was noted with an open ground and broken GFCI outlet.	Orem Armory/ Kitchen	4	Correct the open ground wiring and repair the GFCI outlet in the kitchen.					1910.303(b)(1) & NFPA 70, Article 210-8

ARMORY**CLEANUP & FOLLOW-UP HOUSEKEEPING
RECOMMENDATIONS****Materials Needed:**

1. Cloth Mop head (s) & Mop head holder(s) with handle.
2. Mop bucket (s) with wringer.
3. Clean cotton rags and sponges.
4. Disposable gloves
5. Large barrel (55 gal.) to store wastewater in after changing out of dirty scrub water. Waste water containers.
6. Disposable overshoes or rubber boots. Personnel conducting cleaning operations should not take clothes, boots, etc., home for laundering.
7. HEPA vacuum
8. Six (6) mill plastic bags to dispose of waste.
9. Detergent with surfactant, e.g., Spic-N-Span, Mr. Clean, etc.

Disposal of Waste Water and Cleaning Materials:

1. *NOTE:* Consult with Local Army National Guard Environmental Office prior to taking any collection, disposal or wiping activities commence. Each state and territory may have additional regulatory guidance on collection, storage and disposal of wastewater.
2. Mop heads should be disposed of after initial cleanup, unless otherwise advised by Environmental office personnel. Note: thorough cleaning of mop heads may be sufficient enough to reuse on future Armory cleanups but check with local Environmental Office.
3. Disposable gloves should be treated as hazardous waste.
4. Soiled cotton rags should be treated as hazardous waste.
5. Wash water contaminated with Lead can be collected and allowed to slowly evaporate leaving Lead deposits/sludge that may be collected in plastic containers, placed in metal drums, and stored for future delivery to an authorized hazardous waste disposal site.

- a. Drums shall be properly labeled to identify contents In-Accordance With (IAW) Federal, State and local regulatory guidance.
- b. Disposal of containerized waste shall be coordinated IAW State hazardous waste program requirements.
- c. The Environmental Office shall coordinate removal and disposal of all containerized hazardous waste through established waste streams.

Post-Cleanup Precautionary Measures:

1. Thoroughly wash hands with soap and water.
2. Rinse off rubber boots with soap and water, capturing wastewater for collection into established waste stream. If personnel choose to use over shoes for protection, dispose of overshoes into waste stream. NOTE: This recommendation is for initial clean up activities and PPE requirements may be reduced after it has been determined non-hazardous levels have been achieved.
3. Wash BDU's or personal clothing separately from children's clothes.

NOTE: No eating, drinking or cosmetics allowed during cleanup procedures (these may be allowed after washing of hands/face and done outside of cleanup area)

NOTE: Avoid blowing, shaking or like actions which could potentially disperses lead dust. Dry sweeping, dusting, wiping or blowing with compressed air shall not be permitted

Initial Armory Cleanup:

1. Use a vacuum cleaner equipped with a HEPA exhaust filter. HEPA vacuum all surfaces in the room (ceiling, walls trim, and floors). Start with the ceiling and work down, moving toward the entry door. **Completely clean each room before moving on.**
2. Prepare water and detergent for the wipe down phase, according to manufactures recommendations.

3. Wet wipe, with cotton rags or sponge, any horizontal, diagonal or vertical surfaces up six (6) feet from floor surfaces using hot water and "Spic-n-Span" or an equivalent product.
 - a. Rinse out cleaning cloths thoroughly and frequently.
 - b. Change out cleaning water as necessary.

NOTE: If walls to be cleaned show signs of deterioration, e.g., chipping or crumbling paint, in which wiping, scrubbing, or disrupting might potentially increase or spread contamination, then this portion of the clean up should be avoided.

4. Now prepare water and detergent (e.g. Spic N Span, Mr. Clean, Pine Sol) for the mopping phase, according to manufactures recommendations, which should be found on the products label for general clean up.
 - a. Change out water frequently (when water appears dirty)
 - b. Rinse out mop heads frequently to prevent contamination of dirty water.
5. Cover entire drill floor surface with above prescribed water and detergent.
6. Final rinse should be with clean water only - -after mop heads have been cleaned.

Recommended Follow-up Housekeeping Practices *after Clearance sampling of cleaned area is performed by certified personnel:*

1. Floor cleaning and dusting should be accomplished using the wet method described in Initial Armory Cleanup SOP.

Note: Only exception to these wet cleaning procedures would be the use of a chemically treated dust floor mop. This can be used for follow-up armory cleaning by sweeping of large particles of dirt and paper.

- a. Pre-treated (chemically treated) dust floor mop will limit dust particles from being disbursed into the surround atmosphere.

- b. If treated dust mop is used - -Do Not Shake Mop head - - have mop head laundered after use. **Always keep used dust mop heads in sealed double plastic bags when stored at armory/facility.** Shaking of mop head could release unwanted contaminants into surrounding atmosphere.
2. Frequency of Cleanup- Armories will vary, according to usage and how often they should be cleaned. The following general cleaning schedule is provided:
- a. Only full-time technicians and traditional soldiers using facility during the month. (*Cleaned Monthly*)
 - b. Occasional activities taking place during the month, e.g., 1-2 classes or volleyball games, etc. (*Cleaned 2x's Monthly*)
 - c. Used regularly by soldiers or outside agencies/personnel. (*Cleaned Regularly - -at least Weekly*)

NOTE: Armories with adjoining Indoor Firing Ranges (IFR) should be cleaned more than weekly, again depending on use of Armory and IFR.

NOTE: Clearance sampling/testing is to be accomplished by certified personnel after these cleanup procedures are followed. If the area is an average Armory, occupied by adults only, for which you are cleaning and **is not a Converted IFR space**, you may continue to utilize the Armory space before the officials re-test this space. Please notify your Safety and/or Occupational Health personnel of the completion of this cleaning regime and they will notify the proper officials of the sampling/testing requirements needed.

If work is contracted out, a third party should do the clearance sampling.

Young children and females who are pregnant, there should be posted signs on all facilities, warning of the potential danger of exposure to lead dust.

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IH ASSISTANCE VISIT

**Utah Army National Guard
Orem Armory
951 South Geneva Road
Orem, Utah 84058**

October 30, 2012

Prepared for:

**Industrial Hygiene Southwest
10510 Superfortress Avenue, Suite C
Mather, California 95655**

Non-Responsive

Industrial Hygiene

Reviewed by:

Non-Responsive

IH Services Group Manager

Project #AL127185

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EXECUTIVE SUMMARY

On June 27, 2012, **Non-Responsive** MPH, an Industrial Hygienist with IHI Environmental (IHI), conducted an Industrial Hygiene (IH) Assistance Visit at the Orem Armory located at 951 South Geneva Road, Orem, Utah 84058. The primary point of contact for information gathered during this survey was **Non-Responsive** (801) 722-6828,

Non-Responsive

The objectives of this IH Assistance Visit were to perform the following activities:

- collect lead wipe samples;
- evaluate the condition of painted surfaces and collect paint chip samples for lead analysis where painted surfaces are peeling;
- inspect the interior rooms of the armory for water damage and the presence of fungal growth;
- review asbestos survey and assessment files and determine if documentation of asbestos awareness training is current;
- evaluate the condition of the Heating, Ventilation, and Air-Conditioning system, and collect indoor air quality data;
- review hazardous material storage and use procedures;
- review safety training and record keeping;
- perform a ventilation survey on the kitchen stove hood (if present);
- perform a noise survey on the kitchen appliances; and
- conduct a safety walk-through evaluation and note any existing safety hazards.

Significant findings for this IH Assistance Visit can be found in the Industrial Hygiene Southwest – Violation Inventory Log located in Appendix K of this report.

The report that follows this Executive Summary should be read in its entirety because it includes important information not included in this summary, such as task descriptions, work space locations, regulatory requirements, and additional recommendations.

1.0 INTRODUCTION

On June 27, 2012, **Non-Responsive** an Industrial Hygienist with IHI Environmental (IHI), conducted an Industrial Hygiene (IH) Assistance Visit at the Orem Armory located at 951 South Geneva Road, Orem, Utah 84058. The primary point of contact for information gathered during this survey was **Non-Responsive** (801) 722-6828,

Non-Responsive

1.1 Objectives

Evaluate the occupational environment of the administrative areas in the armory to determine the presence of operational health and safety risks, and make recommendations for corrective actions or follow-up work to manage those risks.

1.2 Scope of Work

To achieve the above objectives at this facility, the survey included the following work:

- collect lead wipe samples;
- evaluate the condition of painted surfaces and collect paint chip samples for lead analysis where painted surfaces are peeling;
- inspect the interior rooms of the armory for water damage and the presence of fungal growth;
- review asbestos survey and assessment files and determine if documentation of asbestos awareness training is current;
- evaluate the condition of the Heating, Ventilation, and Air-Conditioning system and collect indoor air quality data;
- review hazardous material storage and use procedures;
- review safety training, and record keeping;
- perform a ventilation survey on the kitchen stove hood (if present);
- perform a noise survey on the kitchen appliances; and
- conduct a safety walk-through evaluation and note any existing safety hazards.

2.0 PROCESS DESCRIPTION

The Orem Armory has 13 full-time guard members. The armory has offices used for administrative purposes, training facilities, a drill floor, storage rooms, a break room, a locker room, a kitchen, and an equipment storage bay. The organizations assigned to this armory are the Military Intelligence Unit, Homeland Response Force, Counter Drug, Family Assistance Center, and a Joint Language Training Center (JLTC). There are 23 state civilian employees working at the JLTC and one civilian contract employee who is responsible for

floor to perform dog training for members with post-traumatic stress disorder. Army National Guard members occasionally use the drill floor as a staging area to clean weapons.

3.0 METHODS AND APPLICABLE REGULATIONS AND STANDARDS

3.1 Lead Wipe Sampling

Lead residue (dust) wipe samples were collected on horizontal surfaces, such as the drill floor, kitchen, administrative areas, and indoor firing ranges (where present), to determine housekeeping standards. Lead Wipe™ brand wipes were used with a 100-square-centimeter template. The wipes used conform to American Standards for Testing Materials E1792, Standard Specification for Wipe Sampling Materials for Lead in Surface Dust. The collected wipe samples were placed in clean and labeled plastic containers. Samples were submitted to ALS Laboratories for analysis, using NIOSH Method 7300. See Appendix I for sample locations and Appendix J for laboratory results.

The Mather, California, office of Industrial Hygiene Southwest has developed a Standard Operating Procedure (SOP) for lead, which is a blend of OSHA, HUD, and Army regulations. Essentially, this SOP sets forth a criterion of 40 micrograms per square foot ($\mu\text{g}/\text{ft}^2$) for converted indoor firing ranges, break rooms, floor surfaces, or any area that might be used for non-military functions. Additionally, a 200 $\mu\text{g}/\text{ft}^2$ criterion has been established for tool rooms, maintenance bays, furnace rooms, boiler rooms, storage closets, and other areas where general public access is not expected.

3.2 Painted Surface Evaluation

The interior of the armory was visually inspected for peeling paint on the walls and ceilings. Upon encountering peeling paint, a paint chip sample was collected by removing all paint inside a two-inch x two-inch template and placing it in a sampling vial. All samples were submitted to American West Analytical Laboratories (AWAL) in Salt Lake City, Utah. AWAL analyzed the samples for lead using inductively coupled plasma (ICP) and atomic emission spectroscopy (EPA SW-846, Method 6010C). See Appendix I for sample locations and Appendix J for laboratory results.

The U.S. Department of Housing and Urban Development (HUD) and EPA define "lead-based paint" as any coating that has a lead concentration of 1.0 milligram per square

centimeter (mg/cm^2) or greater, or if the lead concentration is greater than 0.5 percent (%) by weight. The Consumer Product Safety Commission (CPSC) currently considers paint to be lead-containing if the concentration of lead exceeds 600 parts per million (ppm) or 0.06% by weight. Both the CPSC and HUD definitions of lead paint are aimed at protecting the general population from exposure to lead in the residential setting.

By contrast, the mission of the Occupational Safety and Health Administration (OSHA) with respect to lead-containing paint is to protect workers during construction activities that could result in hazardous exposures. OSHA states that construction work (including renovation, maintenance, and demolition) performed on structures coated with paint that contains levels of lead lower than HUD and CPSC standards can still result in exposures that exceed the regulatory limits. For this reason, OSHA has not defined a lower threshold level of lead content for lead-containing paint, but states that paint with any measurable level of lead may pose a significant potential for overexposure.

Therefore, construction activities that create lead containing dust or fume must be performed in accordance with OSHA's Lead in Construction Standard, 29 CFR 1926.62. This standard requires, among other things, medical surveillance, lead training, initial exposure assessments, respiratory protection, and worker hygiene facilities.

3.3 Moisture Intrusion and Limited Visual Fungal Growth Evaluation

The interior of the armory was visually inspected for signs of moisture intrusion that could result in fungal growth. Any signs of moisture intrusion (e.g., discoloration, staining, blistering) were noted and documented on a drawing for a follow-up evaluation.

3.4 Asbestos Management

Armory personnel were asked if an asbestos survey and assessment had been conducted and whether there was a written Operations and Maintenance Program for the facility. IHI also reviewed any asbestos awareness training records.

3.5 Heating, Ventilation, and Air-Conditioning Systems and Indoor Air Quality

An evaluation of the heating, ventilation, and air-conditioning (HVAC) systems that serve the armory was accomplished. This evaluation consisted of a visual inspection of the system

to note any obvious problems, and a review of the facility maintenance plan, if one is available.

Carbon dioxide (CO₂), temperature, and relative humidity were measured throughout the armory using a TSI Model 8762 IAQ-Calc™ Monitor. The unit was calibrated before use with certified zero gas and 1,000-ppm CO₂ span gas. See Appendix E for IAQ data.

Carbon dioxide is a normal constituent of exhaled breath and is commonly measured as a screening tool to evaluate whether adequate fresh outdoor air is being provided. If typical CO₂ levels within a building are maintained at or less than 1,000 ppm, with appropriate temperature and humidity levels, complaints about indoor air quality should be minimized (American Society for Testing and Material (ASTM) – International D6245-12, Using Indoor Carbon Dioxide Concentrations to Evaluate Indoor Air Quality). If a building exceeds this guideline, it should not be interpreted as an unhealthy or hazardous situation. An elevated CO₂ level is only an indication that the amount of outside air being brought into a building may be inadequate or poorly distributed and further investigation may be warranted.

In building areas where there are potential sources of CO₂ other than exhaled breath, the guidelines above cannot be used. The Occupational Safety and Health Administration (OSHA) standard for CO₂ should be used in these instances. The OSHA standard is an eight-hour time-weighted average (TWA) of 5,000 ppm with a short-term 15-minute average limit of 30,000 ppm.

3.6 Hazard Communication and Hazardous Material Storage

A review of the armory's chemical inventory and Material Safety Data Sheet (MSDS) file was accomplished. Chemical storage areas, i.e., flammable storage cabinets/rooms, were also inspected.

3.7 Safety Training and Record Keeping

An inspection of safety training programs and documentation was performed to determine if the armory's site-specific training programs and annual documentation were current.

3.8 Kitchen Ventilation Survey

Duct velocity measurements are performed on facility kitchen exhaust hoods (when present) using a TSI VelociCalc, Model 8345.

The 2011 National Fire Protection Association Standard 96, Section 8.2.1.1, requires exhaust fan ducts used in commercial cooking equipment to have a duct velocity of not less than 500 feet per minute (fpm).

3.9 Kitchen Appliance Sound-Level Measurements

Sound-pressure-levels of the kitchen appliances (when present) are measured using a Sound Level Meter in the dBA and dBC ranges, with the meter set on slow response. DD Forms 2214 are provided in Appendix M.

3.10 General Safety Walk-Through

A limited fire life safety code walk-through evaluation of the armory was performed to:

- document the presence of a fire alarm,
- determine if fire extinguishers are properly mounted and current on their monthly and annual inspections,
- determine if eyewash station inspections are current, and
- document any fire or safety hazards in the armory.

3.11 Equipment Used

The following equipment was used for this survey.

Type	Model Number	Serial Number	Calibration Date
TSI VelociCalc™	8345	98060408	10/13/2011
TSI IAQ Calc™	8732	02100504	03/19/2012
Greenlee® Sound Level Meter	SM-100	010613107	10/05/2011

The calibration certificates for these instruments are attached in Appendix H.

3.12 Quality Assurance

IHI employs, at a minimum, the following methods to help assure quality of field investigations and reports:

- Use of appropriately educated and experienced personnel;
- Documentation of pertinent field and sampling information
- Continuing education of technical personnel through attendance at training sessions and conferences, and literature review;
- Peer and supervisory review of sampling strategy, field methods, calculations, and reports;
- Strict adherence to method requirements, in particular to NIOSH and OSHA, standard methods, including strict chain-of-custody protocol;
- Use of accredited laboratories, or, in cases where specific accreditation is not available, choice of laboratories of good reputation, having strong QA/QC programs.
- Calibration of instruments, including field calibration via manufacturers' recommended procedures and routine (typically annual) off-site calibration of equipment via certified third parties.

4.0 FINDINGS AND RECOMMENDATIONS

4.1 Lead Wipe Sampling

Analytical results for lead wipe sampling indicate all locations were below the criterion levels outlined in the IHSW SOP. See Appendix I for a data table and a drawing showing sample locations and Appendix J for the laboratory reports. Photographs were taken of each sampling point and are presented in Appendix C.

Recommendation

None

4.2 Painted Surface Evaluation

Peeling paint was noted on several walls. All of the paint appeared to be the same and was applied to gypsum board substrates. One paint chip sample was collected from a damaged wall surface in the drill floor area.

The analytical result for the paint chip sample collected indicates that it contains <0.012% lead by weight, less than the HUD standard of 0.5% for lead. However, because there is measureable lead in the sample, OSHA's Lead in Construction Standard applies when renovation work that may disturb this paint is conducted. See Appendix I for a data table and

a drawing showing sample locations and Appendix J for the laboratory reports. Photographs were taken of each sampling point and are presented in Appendix C.

Recommendation

Construction personnel must follow the requirements of the OSHA Lead in Construction Standard, 29 CFR 1926.62, if they perform activities that could create lead dust or fume involving this painted surface.

4.3 Moisture Intrusion and Limited Visual Fungal Growth Evaluation

Water-damaged ceiling tiles were noted in three rooms; however, no fungal growth was observed. See the drawing in Appendix E for locations of these ceiling tiles.

Recommendation

None

4.4 Asbestos Management

An asbestos survey could not be located during this visit. Personnel have not been provided asbestos awareness training.

Recommendations

1. Contract with a licensed firm to perform an asbestos survey and assessment.
2. Once asbestos-containing materials have been identified and assessed, provide awareness training to assigned personnel for the specific material types and locations of asbestos in this armory.

4.5 Heating, Ventilation, and Air-Conditioning Systems and Indoor Air Quality

The HVAC system servicing the armory consists of two gas-fired water boilers supplying hot water to the heating system. The hot water is pumped to Variable Air Volume (VAV) boxes located throughout the facility. The VAV boxes convert hot water to heated air with a coil system. The heated air is then distributed to areas of the building through HVAC ducting. The supply rooms on the north side of the first floor have supplemental unit heaters suspended from the ceiling. These units use the same hot water provided by the boilers.

One large chiller unit supplies cold water to the HVAC system. The cold water is pumped to heat exchange coils within the air-handling units located in Mechanical Room 201. The air-

handling units distribute cool air through the same HVAC ducting to various areas of the building. There are seven air-handling units in Room 201.

Return air travels through registers in the ceilings to the open-air plenum between the suspended ceiling tiles and the upper flow deck back to Room 201. The return air is mixed in a large mixing box with a portion of outside air determined by the automated system.

The entire system is computer controlled by a system called INET, which is provided by Utah Controls, a local sub-contractor.

The State of Utah, Division of Facilities, Construction, and Management (DFCM), regularly services and provides monthly preventive maintenance checks of the HVAC system for this armory. Filters are changed out quarterly at a minimum and sometimes as often as monthly due to numerous nearby construction projects taking place.

The kitchen has its own exhaust fan system located on the roof.

The average outdoor CO₂ concentration at the time of the survey was 306 ppm. The highest CO₂ concentration measured inside the building was 542 ppm, which should not result in indoor air quality complaints.

Building air temperatures ranged from 74.2°F to 76.4°F and relative humidity was between 25.8% and 28.8 % during the testing period. Air temperatures were slightly above the recommended comfort range of 68°F to 75°F and the relative humidity was lower than the recommended comfort range of between 30% and 60%. Low relative humidity is common in Utah during the majority of the year. Humidity levels above 60% can result in proliferation of bacteria and fungi, while levels below 30% can cause dry eyes, skin, and mucous membranes.

Recommendation

None

4.6 Hazard Communication and Hazardous Material Storage

4.6.1 Hazardous Materials Inventory and Material Safety Data Sheets (MSDS)

Hazardous materials for the armory are stored in three flammable storage cabinets, each in a separate supply room. Each cabinet has its own inventory and MSDSs, with both the

inventory and MSDSs arranged by product name. Only one of the three supply rooms was accessible for this visit. For the cabinet in this room, the chemical inventory was complete and associated MSDSs were available.

Copies of chemical inventories are provided in Appendix D.

Recommendation

None

4.6.2 Flammable Storage Cabinets

The one accessible flammable locker that was inspected contained no storage incompatibilities or leaking materials. In addition, it was in good condition and all doors were noted to close properly.

Recommendations

Inspect the two inaccessible flammable storage cabinets to ensure the following:

- the chemical inventory is complete,
- MSDSs are available for each product,
- the cabinet is in good condition with properly closing doors, and
- the cabinet has flammable liquids signs and the room has a proper placard.

4.7 Safety Training and Record Keeping

The following safety documentation is maintained in the Orem Armory:

Safety Standard Operating Procedure

- Safety Program Process
- Tracking Hazards
- Safety Councils
- Accident and Safety Hazard Reporting
- Safety Education and Training
- Safety Displays and Documentation
- Unit Safety Awards Program

Safety Program, Utah National Guard Regulation 385-10

All other safety related regulations are maintained electronically on the Utah Army National Guard Portal (Home page).

The following safety training documentation is maintained in the Orem Armory:

- Hazard Communication
- Hearing Conservation
- Composite Risk Management
- Safe Guard – General Safety Training before Annual Training
- Crane Operations

The last Safety Council Meeting was held on June 19, 2011. In addition, the UTARNG has several required computer-based training courses with reference to safety training.

Note: IHI did not conduct a thorough evaluation of the contents or quality of any of the documents identified during this visit.

Recommendation

None

4.8 Kitchen Ventilation Survey

There is a roof-mounted exhaust fan that services the kitchen stove and oven. Duct velocity measurements were obtained on this hood. The estimated average duct velocity measured during this visit was 248 fpm. See Appendix F for the ventilation worksheet.

Recommendation

Increase the duct velocity to 500 fpm for this exhaust.

4.9 Kitchen Appliance Sound-Level Measurements

Sound-level measurements were collected from the following kitchen appliances:

- Garbage disposal
- Freezer
- Refrigerator
- Exhaust hood above the stove
- Titan Mixer/Food Prep Machine

All the kitchen appliances measured produced noise levels well below the hazardous noise criterion of 85 dBA. Based on this information, there is no need for noise reduction measures or noise dosimetry surveys for this area.

Recommendation

None

4.10 General Safety Walk-Through

1. Housekeeping throughout the facility was good.
2. There are fire alarms present in this facility.
3. Fire extinguishers are strategically located throughout the armory. The annual and monthly inspections were out of date on most of the fire extinguishers.
4. Eyewash stations were not observed in this facility.
5. Fire evacuation routes are not posted in the rooms of this armory.
6. One electrical panel box "HA" was found to contain exposed wiring and an opening in the panel.
7. Three pressurized cylinders of carbon dioxide in a storage cage in Room 138C and were not secured against movement.
8. A ground fault circuit interrupter (GFCI) within six feet of a water source in the kitchen had an open ground and did not function when tested.

Recommendations

1. Ensure all fire extinguishers undergo an annual and monthly maintenance check.
2. Replace the electrical access panel on electrical panel box "HA" so electrical wires cannot be contacted.
3. Secure the pressurized cylinders of carbon dioxide in the storage cage so they cannot fall.
4. Repair the wiring for the kitchen outlet and repair or replace the GFCI outlet.

5.0 PROJECT LIMITATIONS

This Project was performed using, as a minimum, practices consistent with standards acceptable within the industry at this time, and a level of diligence typically exercised by industrial hygiene and environmental consultants performing similar services.

The procedures used in this investigation attempt to establish a balance between the competing goals of limiting investigative and reporting costs and time, and reducing the uncertainty about unknown conditions. Therefore, because the findings of this report were derived from the scope, costs, time, and other limitations, the conclusions should not be construed as a guarantee that all environmental or occupational hazards have been identified and fully evaluated. Where sample collection and testing have been performed, IHI's professional opinions are based in part on the interpretation of data from discrete sampling locations that may not represent conditions at non-sampled locations. IHI assumes no

responsibility for omissions or errors resulting from inaccurate information or data provided by sources outside of IHI, or from omissions or errors in public records.

Furthermore, it is emphasized that the final decision on how much risk to accept always remains with the client since IHI is not in a position to fully understand all of the client's needs. Clients with a greater aversion to risk may want to take additional actions while others, with less aversion to risk, may want to take no further action.

6.0 PROJECT APPROVAL

This IH Assistance Visit was reviewed and approved by:

Non-Responsive

IH Services Grip Manager

October 30, 2012
Date

Technical Assistance: For technical assistance regarding information found in this report or the performed survey, please contact **Non-Responsive** at 801-466-2223, or **Non-Responsive** of the Southwest Regional Industrial Hygiene Office at 916-804-1707.

Contact the State Safety and Occupational Health Office and/or the Regional Industrial Hygienist should any of the operations change, or should the personnel become incapable of following the previous recommendations and subsequent recommendations are needed.

Appendix A

References

- American Conference of Governmental Industrial Hygienists (ACGIH), Industrial Ventilation, A Manual of Recommended Practice
- American Conference of Governmental Industrial Hygienists (ACGIH), Threshold Limit Values for Chemical Substances and Physical Agents and Biological Indices
- American National Standards Institute (ANSI)/Illuminating Engineering Society (IES), Industrial Lighting.
- American National Standards Institute, Z358. 1-1998. Emergency Eyewash and Shower Equipment
- AR 40-5, Preventative Medicine
- AR 40-10, Appendix B – Health Hazard Assessment Program in Support of Army Material Acquisition Decision Process
- AR 385-10, The Army Safety Program
- Corps of Engineers Guide Specification, CEGS-1585 1, Overhead vehicle tailpipe (and welding fume) Exhaust Systems
- DA PAM 40-ERG, Ergonomics
- DA PAM 40-501, Hearing Conservation.
- National Safety Council, Fundamentals of Industrial Hygiene
- NOR 385-10, Army National Guard Safety and Occupational Health Program
- TB MED 503, The Army Industrial Hygiene Program
- TG022, US Army Environmental Hygiene Agency (USAEHA), Industrial Hygiene Evaluation Guide
- TG 141, US Army for Health Promotion and Preventive Medicine (USACHPPM) Industrial Hygiene Air Sampling Guide, Nov. 1997
- Title 29, Code of Federal Regulations (CFR), 2011, revision Part 1910, Occupational Safety and Health Standards

Appendix B

Assessment Criteria

A. Ventilation Standards

Ventilation rates were compared to recommendations made in 29 CFR 1910, ACGIH Industrial Ventilation Manual, and Corps of Engineers specifications. See Appendix A for reference information.

B. Illumination Standards

Illumination measurements were compared with recommendations made by the Industrial Engineering Society (IES)/American National Standards Institute (ANSI) RP7-1991 Standard and MIL-STD-1472E.

C. Noise

Noise measurements were taken and compared with OSHA Standard 29 CFR 1910.95 and Department of the Army Pamphlet 40-501.

D. Air Sampling

Personal air sampling was conducted in compliance with applicable NIOSH Analytical Methods. Sampling results were compared to relevant Occupational Safety and Health Administration (OSHA) Permissible Exposure Limits (PEL), American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLV), or National Institute of Occupational Safety and Health (NIOSH) Recommended Exposure Limits (REL).

Occupational Safety and Health Administration (OSHA)

OSHA has established Permissible Exposure Limits (PELs) for workplace toxic and hazardous substances listed in 29 CFR 1910.1000 Table Z-1. Most OSHA PELs are based on 8-hour time weighted averages (TWAs); when sampling periods differ from 8 hours, the result must first be converted to an 8-hour TWA before comparing it to the OSHA PEL. Some OSHA PELs are based on Short Term Exposures Limits (STEL) of 15 minutes of worst case exposure or Ceiling Limits of worst case peak exposures (sampled as a 15 minute exposure if direct-reading methods are not available).

OSHA regulations are legally enforceable. Employers are required to maintain employee exposures below PELs. The best practice is to eliminate hazards and use safer substitutes. Alternatively, engineering and/or administrative (work practice) controls may reduce exposures to acceptable levels. Personal protective equipment should be the solution of last resort, implemented after all other efforts to eliminate the hazard have been exhausted or deemed infeasible. OSHA 29 CFR 1910.134 covers the use of respiratory protection in the work place.

American Conference of Governmental Industrial Hygienists (ACGIH)

Unlike the OSHA PELs, the ACGIH TLVs are not consensus standards; however, TLVs represent a scientific opinion based on a review of existing peer-reviewed scientific literature by committees of experts in public health and related sciences.

Occupational Exposure Limit

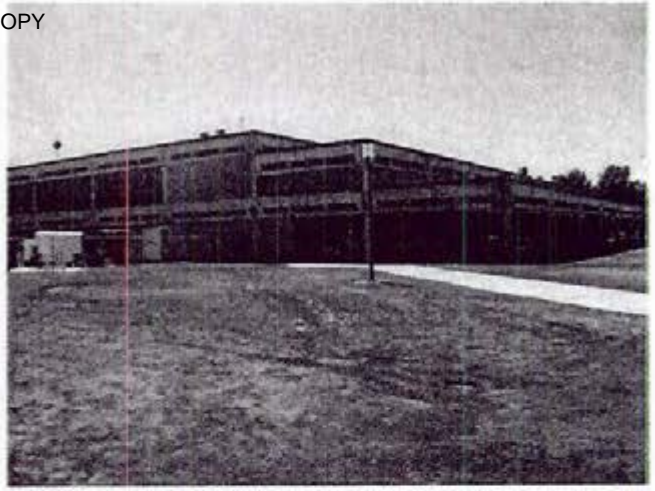
In accordance with the Department of the Army (DA) Pamphlet 40-503, Industrial Hygiene Program (DA PAM 40-503), "The DA mandates the use of ACGIH TLVs when they are more stringent than OSHA regulations or when there is no PEL." The DA defines the resulting exposure limit as the Occupational Exposure Limit (OEL).

Appendix C

Photo Log



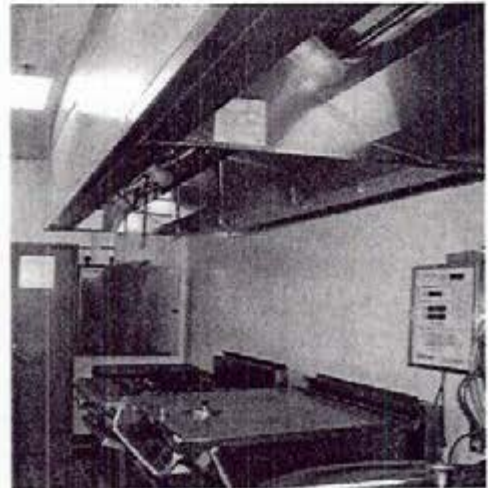
Photograph 1
Orem Armory, Front, Exterior



Photograph 2
Orem Armory, Rear, Exterior



Photograph 3
Kitchen exhaust ducts, exterior



Photograph 4
Kitchen exhaust ducts, interior



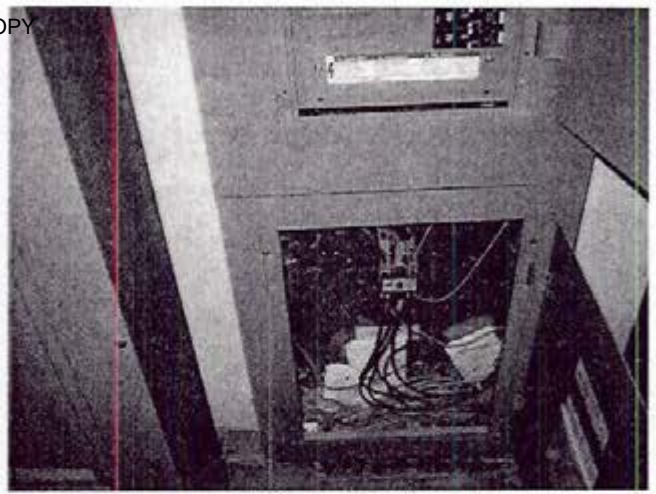
Photograph 5
Flammable cabinet: doors closed



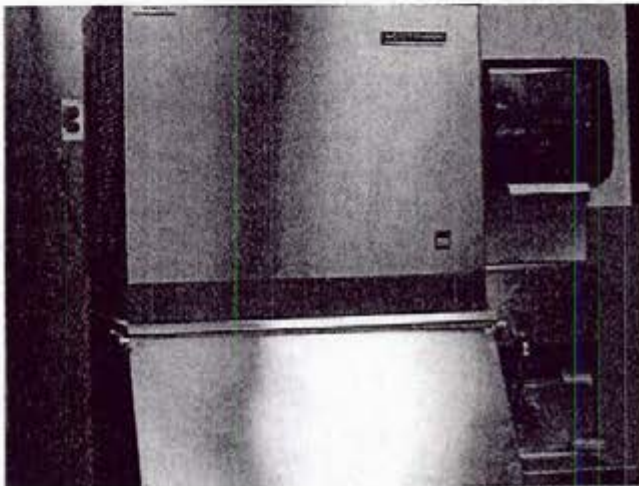
Photograph 6
Flammable cabinet: doors open



Photograph 7
Safety: Expired fire extinguishers



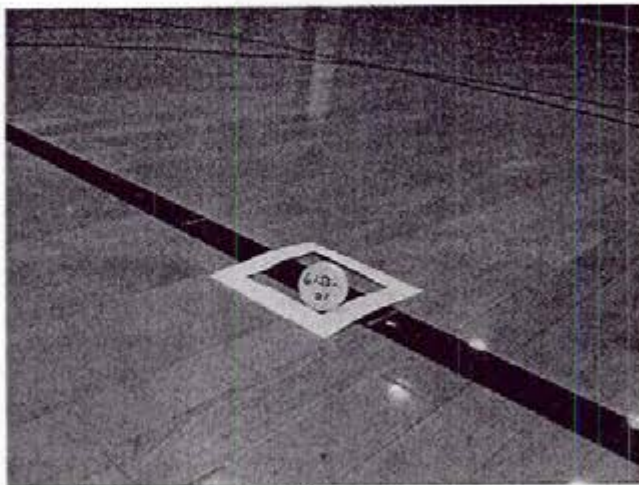
Photograph 8
Safety: Electrical panel box with missing cover plate



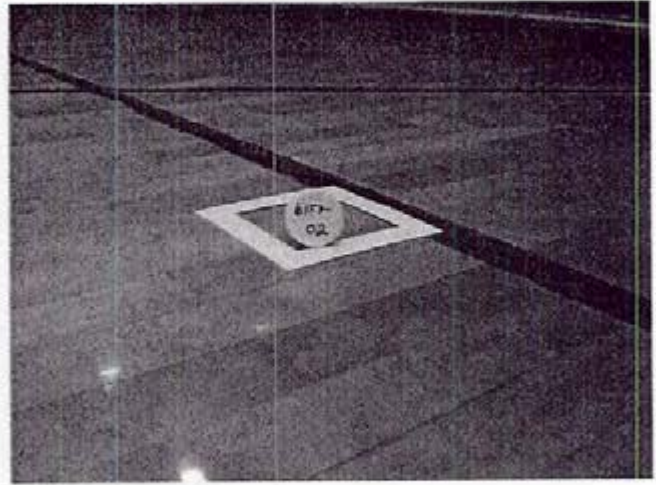
Photograph 9
Safety: Electrical GFCI located within six feet of a water source does not work



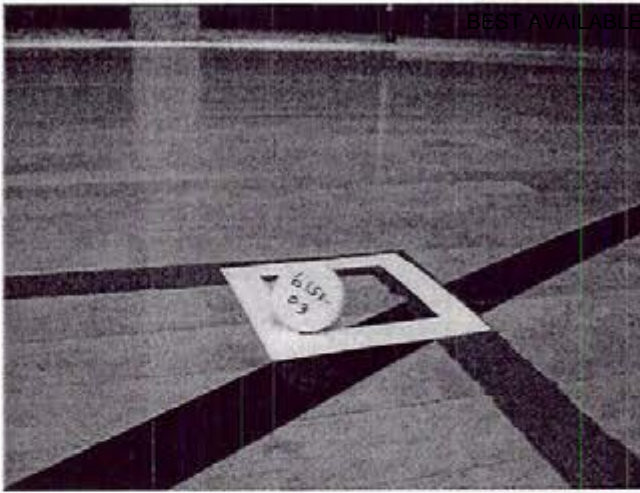
Photograph 10
Safety: Unsecured compressed gas cylinders



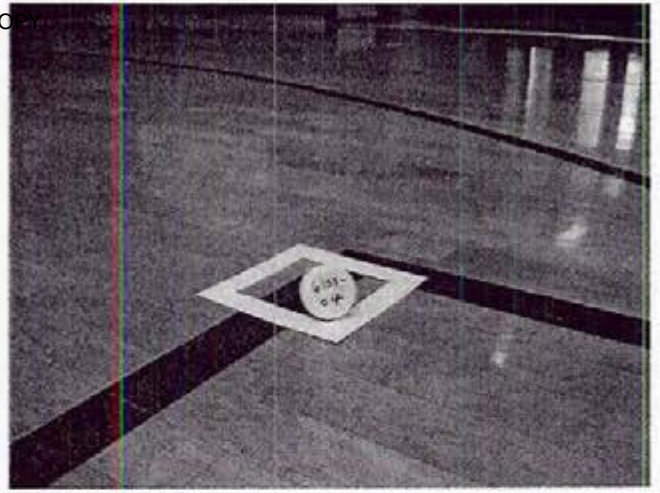
Photograph 11
Lead wipe sample location 6153-01



Photograph 12
Paint chip sample location 6153-02



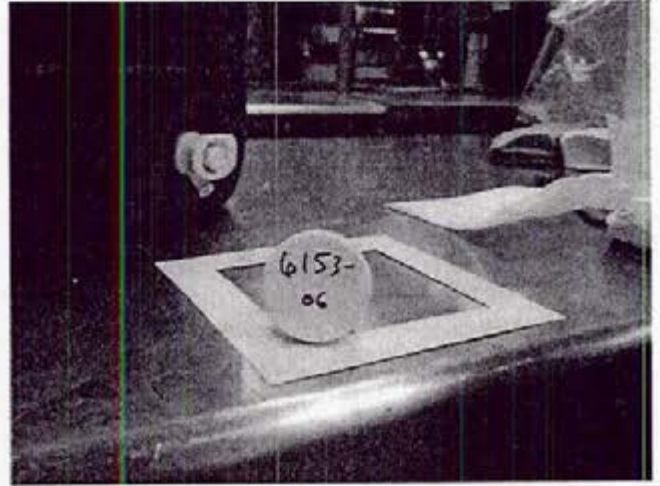
Photograph 13
Lead wipe sample location 6153-03



Photograph 14
Lead wipe sample location 6153-04



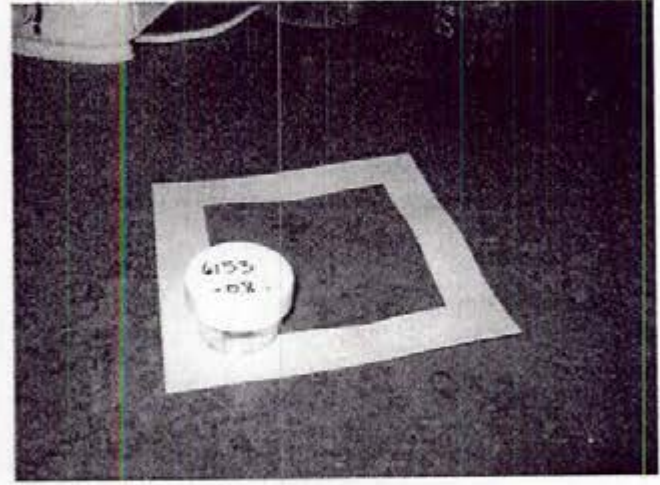
Photograph 15
Lead wipe sample location 6153-05



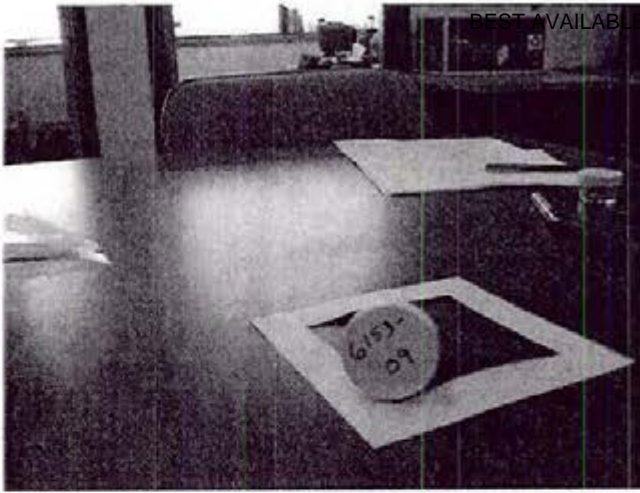
Photograph 16
Lead wipe sample location 6153-06



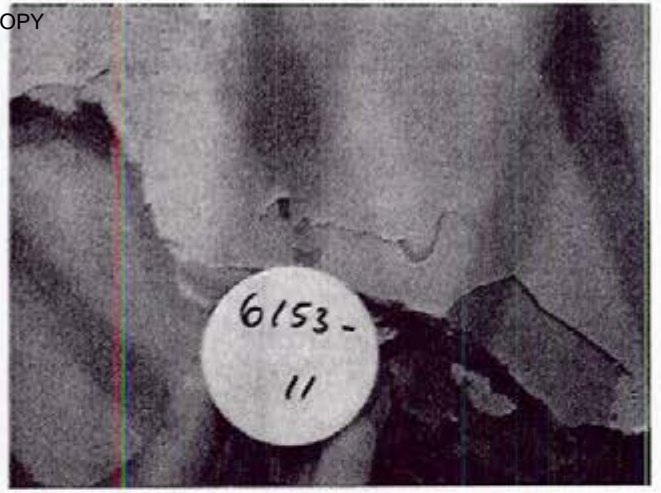
Photograph 17
Lead wipe sample location 6153-07



Photograph 18
Lead wipe sample location 6153-08



Photograph 19
Lead wipe sample location 6153-09



Photograph 20
Paint chip sample location 6153-11

Appendix D
Chemical Inventory

MSDS INVENTORY

<u>NAME</u>	<u>LOCATION</u>
CARBON REMG	FLAMMABLE CABINET
CARBON REMG COMPOUND TYPE II	FLAMMABLE CABINET
ENDUST	FLAMMABLE CABINET
FALCON DUST-OFF	FLAMMABLE CABINET
EXPO CLEANER	FLAMMABLE CABINET
SPRAY PAINT-BLUE	FLAMMABLE CABINET
SPRAY PAINT-YELLOW	FLAMMABLE CABINET
DETERGENT-GENERAL PURPOSE	FLAMMABLE CABINET
DETERGENT, GENERAL PURPOSE	FLAMMABLE CABINET
SKILCRAFT POWER DUSTER	FLAMMABLE CABINET
SHREDDER OIL	FLAMMABLE CABINET
WD-40	FLAMMABLE CABINET
WINDEX	FLAMMABLE CABINET
FP-10 LUBRICANT	FLAMMABLE CABINET
CLP LIQUID (6124)	FLAMMABLE CABINET
CLP LIQUID (1473)	FLAMMABLE CABINET
SPRAY PAINT-WHITE	FLAMMABLE CABINET
SPRAY PAINT-BLACK	FLAMMABLE CABINET
GLUE STICK	OFFICE/SUPPLY CAGE
SUPER GLUE	OFFICE/SUPPLY CAGE
PAINT MARKERS	OFFICE/SUPPLY CAGE
HAND CLEANER	OFFICE/SUPPLY CAGE
FALCON DUST-OFF	OFFICE/SUPPLY CAGE
DETERGENT, GENERAL PURPOSE	OFFICE/SUPPLY CAGE
DETERGENT, GENERAL PURPOSE	MIDDLE CAGE
REGUALR DRY CHEMICAL FIRE EXTINGUISHER	MIDDLE CAGE
LAUNDRY DETERGENT	MIDDLE CAGE
WINDEX	MIDDLE CAGE

Appendix E

Floor Plan/IAQ - Temp, RH, & CO₂ Monitoring

Tooele Armory - Lead Wipe and Paint Chip Sample Results

Lead Wipe Sample Results

Sample Number	Collection Date	Location	Result $\mu\text{g}/\text{ft}^2$
6153-01	6/27/2012	Drill Hall (Gym), Center	< 23
6153-02	6/27/2012	Drill Hall (Gym), NW	< 23
6153-03	6/27/2012	Drill Hall (Gym), SW	< 23
6153-04	6/27/2012	Drill Hall (Gym), SE	23
6153-05	6/27/2012	Drill Hall (Gym), NE	< 23
6153-06	6/27/2012	Kitchen, food preparation surface	< 23
6153-07	6/27/2012	SFC Shreve's Desk	< 23
6153-08	6/27/2012	Top of food prep surface 2nd floor breakroom	< 23
6153-09	6/27/2012	Room #234 top of conference table CO. B 141 MIBN	< 23
6153-10	6/27/2012	Field Blank	< 23

Paint Chip Sample Result

Sample Number	Collection Date	Location	Lead Result mg/kg
6153-11	6/27/2012	Paint chip at E center of gym 1st floor	< 0.012

Appendix F
Ventilation Data

Ventilation Survey Data and Calculations
Kitchen Exhaust Vents
Orem, Utah Armory

General Vent Cross Section (all three vents)

1	2	3	4	5	6	7	8	9	10	11	12
---	---	---	---	---	---	---	---	---	----	----	----

Kitchen Exhaust Fan
(KEH-3)

Point Flow Rate (fpm)

1	361
2	345
3	194
4	150
5	170
6	216
7	235
8	240
9	246
10	258
11	274
12	291

Avg. Flow Rate = 248 fpm

Appendix G

Field Notes

FACILITY INFORMATION(Information listed in First Section)
(1st Few Paragraphs/Pages of Report)

1. Date Prepared: 6/27/12

2. Names (and Company Name) of Personnel Conducting Industrial Hygiene Site Assistance Visit: **Non-Responsive**

3. Facility Name and Brief Summary of Primary Activities Conducted at Facility:

Orem Armory; Primary activities include: Military intelligence, Homeland Response, Counter drug, family assistance, joint language training

4. Facility Address: 951 South Geneva Road Orem, Utah 84058

5. Primary Unit Assigned to Facility (Ensure to capture and provide Unit Identification Code (UIC)): HHC 141 MI BN **Non-Responsive**

6. Co-Tenant Units Assigned or Working Within Facility (LIST ALL):

B Co 141 MI BN WYH6B0	JLTC
C Co 141 MI BN WYH6C0	COUNTER DRUG
HHC 141 MI BN WYH6T0	FAMILY ASSISTANCE CENTER
COMMUNITY COVENANT	HFR

7. Square Ft. Area of Facility: 70,871

8. Work Schedule: MON-FRI

9. Number of work bays: 1 MAINTENANCE BAY

10. Equipment Density and Type: 4 – 5 ton
 17 - HMWV
 8 – Generators, Trailer Mounted

a. List Equipment Nomenclature Serviced or Maintained at Facility: N/A

b. List Total Number for Each Nomenclature Serviced or Maintained at Facility: N/A

11. Total Number of Personnel: 69

12. No. of Admin. Personnel (Include Status – AGR, Fed. Tech., IDT, State or Contract Employee): 13 AGR, 31 ADOS, 1 Fed Tech, 23 State Employees, 1 Civilian Contract

13. No. of Maintenance Personnel (Include Status – AGR, Fed. Tech., IDT, State or Contract Employee): N/A

14. Total Number of Personnel Enrolled in the Hearing Conservation Program: 0

15. Total Number of Personnel Enrolled in the Respiratory Protection Program: 0

16. Total Number of Personnel Enrolled in the Medical Surveillance Program: 0

17. Total Number of Personnel Enrolled in the Vision Program: 0

18. Facility Commander: Maj David Christopherson

a. Email address, Commercial Telephone Number and Unit Assigned to:

Non-Responsive

19. Safety Officer: **Non-Responsive**

a. Email Address, Commercial Telephone Number and Unit Assigned to:

Non-Responsive

20. Facility Telephone Number: (801)722-6823

OREM, UT ^{ARMORY}
 951 So. GENEVA Rd.
 OREM, UT
Army National Guard Armory Survey
(To Be Included In Report)

Five lead wipe samples collected from drill floor (take samples from dusty horizontal floor surfaces)	Yes ✓
Are any weapons cleaned in the facility, if yes where are they cleaned?	Yes - You Bet ✓
Additional lead wipe samples taken from 25% of the rest of the building - (on floor areas only)	✓
Is there a converted indoor firing range? If so collect additional wipe samples IAW the SOW.	No
Is there any peeling paint? Take bulk sample if able.	couple spots - 1 sample
Are there any signs of water damage or mold?	couple spots - small - photo's taken No mold
Any suspected ACM? Where and what condition is it in. Bulk sample if able.	Building is only 12 years old. No Report on file
Quality of housekeeping	Good
HVAC maintenance plan in place?	yes STATE DFCM
Overall condition of HVAC system	Excellent
Obtained CO2, Temp, RH monitoring	yes ✓
HAZMAT inventory on hand (make copies for the report), MSDS available for all materials.	✓
HAZMAT storage, Condition of lockers, if outside storage building is used is it ventilated and does it meet OSHA standards.	✓

Fire alarm in working condition - -not usually in place in older armories	Yes
Fire extinguishers in place and properly identified and mounted	Yes
Evidence of monthly fire extinguisher inspections	✓ - Though not current
Annual fire extinguisher inspections tags current	✓ - Though NOT CURRENT
Are eye wash stations available in areas where hazardous materials are used and are they inspected weekly (inspections must be documented)	NA - NONE observed
Egress routes accessible and properly marked - -noted on <u>Fire Evacuation Plan</u>	Yes
Training programs in place; Hazcom, Respiratory Protection, Confined Spaces, Hearing conservation, PPE (if applicable)	✓
Any Photo labs	No
Any hazardous noise sources	Yes ✓
Light levels checked throughout building	NA
Breaker panels properly labeled with no exposed wiring	Yes ✓
Check building occupancy 1. How many military personnel, how many civilian personnel 2. What types of units occupy facility, i.e. Administrative, Maintenance, etc.?	13 military 1 civilian
Any civilian activities in armory (cub scouts, classes, day care, parties etc)	only Dog Training for PTSD Victims
Obtain two lead air samples	On IHSW Request Only

Evaluate Kitchen Stove Hood Flow if Present IAW NFPA Standard 96.	Yes - Less Than Requirement
Collect Source Noise Measurements of Kitchen Appliances and Document Using DD 2214	✓
Conduct a safety walkthrough of entire facility document any safety deficiencies found.	✓
Take photos of outside of building, all sample points and any pertinent hazards or concerns.	✓
Name of Armory, POC, phone #, address and organizations in Armory (Add Checklist to Report)	✓ Non-Responsive 951 Geneva Rd. OREM, UT (801) 722-6828 (Add Checklist to Report)



CERTIFICATE OF CALIBRATION AND TESTING

TSI Incorporated, 500 Cardigan Road, Shoreview, MN 55126 USA
Tel: 1-800-874-2811 1-651-490-2811 Fax: 1-651-490-3824 <http://www.tsi.com>

ENVIRONMENT CONDITION			MODEL	8345
TEMPERATURE	67.8 (19.9)	°F (°C)	SERIAL NUMBER	98060408
RELATIVE HUMIDITY	53	%RH		
BAROMETRIC PRESSURE	28.93 (979.7)	inHg (hPa)		

☐ AS LEFT
☒ AS FOUND

☐ IN TOLERANCE
☒ OUT OF TOLERANCE

- CALIBRATION VERIFICATION RESULTS -

VELOCITY VERIFICATION				SYSTEM V-106			Unit: ft/min (m/s)
#	STANDARD	MEASURED	ALLOWABLE RANGE	#	STANDARD	MEASURED	ALLOWABLE RANGE
1	0 (0.00)	0 (0.00)	-3~3 (-0.02~0.02)	7	645 (3.28)	626 (3.18)	626~664 (3.18~3.37)
2	35 (0.18)	36 (0.18)	32~38 (0.16~0.19)	8	996.5 (5.062)	* 961.5 (4.884)	966.6~1026.4 (4.91~5.214)
3	65 (0.33)	66 (0.33)	62~68 (0.31~0.34)	9	1473.3 (7.484)	* 1386.8 (7.045)	1429.1~1517.5 (7.26~7.709)
4	100 (0.51)	101 (0.51)	97~103 (0.49~0.52)	10	2503.6 (12.718)	* 2344.6 (11.911)	2428.5~2578.7 (12.337~13.10)
5	160 (0.81)	160 (0.81)	155~164 (0.79~0.84)	11	4484 (22.78)	4451 (22.61)	4350~4619 (22.10~23.46)
6	328 (1.67)	326 (1.65)	318~338 (1.62~1.72)	12	5908 (30.01)	5884 (29.89)	5731~6085 (29.11~30.91)

TEMPERATURE VERIFICATION				SYSTEM T-119			Unit: °F (°C)
#	STANDARD	MEASURED	ALLOWABLE RANGE	#	STANDARD	MEASURED	ALLOWABLE RANGE
1	32.0 (0.0)	* 32.7 (0.39)	31.5~32.5 (-0.28~0.28)	2	140.0 (60.0)	140.0 (60.0)	139.5~140.5 (59.7~60.3)

*Indicates Out-of-Tolerance Condition

TSI does hereby certify that the above described instrument conforms to the original manufacturer's specification (not applicable to As Found data) and has been calibrated using standards whose accuracies are traceable to the United States National Institute of Standards and Technology (NIST) or has been verified with respect to instrumentation whose accuracy is traceable to NIST, or is derived from accepted values of physical constants. TSI's calibration system is registered to ISO 9001:2008 and meets the requirements of ISO 10012:2003.

Measurement Variable	System ID	Last Cal.	Cal. Due	Measurement Variable	System ID	Last Cal.	Cal. Due
DC Voltage	E004477	12-15-11	12-15-12	Temperature	E001644	01-20-12	07-20-12
Pressure	E001558	12-12-11	06-12-12	Pressure	E001560	12-12-11	06-12-12
Velocity	E003327	09-19-07	09-19-12	Barometric Pressure	E001992	04-06-12	04-06-13
Temperature	E001800	01-19-12	07-19-12	Temperature	E001799	01-19-12	07-19-12

Non-Responsive

June 5, 2012

VERIFIED

DATE

Doc ID: CERT-DEFAULT



CERTIFICATE OF CALIBRATION AND TESTING

TSI Incorporated, 500 Cardigan Road, Shoreview, MN 55126 USA
Tel: 1-800-874-2811 1-651-490-2811 Fax: 1-651-490-3824 http://www.tsi.com

ENVIRONMENT CONDITION			MODEL	8345
TEMPERATURE	68.5 (20.3)	°F (°C)	SERIAL NUMBER	98060408
RELATIVE HUMIDITY	53	%RH		
BAROMETRIC PRESSURE	28.95 (980.4)	inHg (hPa)		

☒ AS LEFT

☐ AS FOUND

☒ IN TOLERANCE

☐ OUT OF TOLERANCE

- CALIBRATION VERIFICATION RESULTS -

VELOCITY VERIFICATION				SYSTEM V-110		Unit: ft/min (m/s)	
#	STANDARD	MEASURED	ALLOWABLE RANGE	#	STANDARD	MEASURED	ALLOWABLE RANGE
1	0 (0.00)	0 (0.00)	-3~3 (-0.02~0.02)	7	548 (3.29)	644 (3.27)	628~667 (3.19~3.39)
2	35 (0.18)	34 (0.17)	32~38 (0.16~0.19)	8	996 (5.06)	991 (5.03)	966~1026 (4.91~5.21)
3	65 (0.33)	65 (0.33)	62~68 (0.32~0.35)	9	1473 (7.48)	1476 (7.50)	1428~1517 (7.26~7.70)
4	99 (0.50)	98 (0.50)	96~102 (0.49~0.52)	10	2473 (12.56)	2484 (12.62)	2399~2547 (12.18~12.94)
5	160 (0.81)	158 (0.80)	155~165 (0.79~0.84)	11	4493 (22.82)	4514 (22.93)	4358~4627 (22.14~23.51)
6	334 (1.70)	333 (1.69)	324~344 (1.64~1.75)	12	5903 (29.99)	5902 (29.98)	5726~6080 (29.09~30.89)

TEMPERATURE VERIFICATION				SYSTEM T-119		Unit: °F (°C)	
#	STANDARD	MEASURED	ALLOWABLE RANGE	#	STANDARD	MEASURED	ALLOWABLE RANGE
1	32.0 (0.0)	32.1 (0.1)	31.5~32.5 (-0.3~0.3)	2	140.0 (60.0)	140.2 (60.1)	139.5~140.5 (59.7~60.3)

TSI does hereby certify that the above described instrument conforms to the original manufacturer's specification (not applicable to As Found data) and has been calibrated using standards whose accuracies are traceable to the United States National Institute of Standards and Technology (NIST) or has been verified with respect to instrumentation whose accuracy is traceable to NIST, or is derived from accepted values of physical constants. TSI's calibration system is registered to ISO-9001:2008 and meets the requirements of ISO 10012:2003.

Measurement Variable	System ID	Last Cal.	Cal. Due	Measurement Variable	System ID	Last Cal.	Cal. Due
Temperature	E001800	01-19-12	07-19-12	Temperature	E001799	01-19-12	07-19-12
DC Voltage	E001658	06-28-11	12-28-12	Temperature	E004402	12-08-11	06-08-12
Pressure	E001719	12-13-11	06-13-12	Pressure	E001721	12-13-11	06-13-12
Barometric Pressure	E001992	04-06-12	04-06-13	Velocity	E003327	09-19-07	09-19-12

Non-Responsive

June 5, 2012

DATE

Doc. ID: CERT_DEFAULT



TSI - Customer Service report

Thank you for the opportunity to service your instrument.

RMA Number: 800245509

Ship-to party 17032 IHI ENVIRONMENTAL 640 E WILMINGTON AVE SALT LAKE CITY UT USA	Sold-to party 17032 IHI ENVIRONMENTAL 640 E WILMINGTON AVE SALT LAKE CITY UT USA
---	---

Service Information:

Purchase Order 12U-I6001TSIJCH
Purchase Order Date 06/05/2012

Description Calibration of VelociCalc 8345

Equipment 98060408
Serial Number 98060408
Material 8345

Service Description:

Return Reason:
ANNUAL CALIBRATION

Findings:
Unit sent in for clean and calibration. The unit failed as found.

Action:
The unit was cleaned, calibrated, and a complete operational checkout
was performed.

CERTIFICATE OF CALIBRATION AND TESTING

TSI Model 8732

TSI Serial No. 02100504

Description	IAQ Meter with CO2
-------------	--------------------

Calibration Standard Multi-Gas Calibration Bench #127

CALIBRATION VERIFICATION RESULTS

CALIBRATION VERIFICATION RESULTS					
Calibration Standard	Instrument Output	Difference	Error Compared to Tolerance		
			Tolerance Limit-	0	Tolerance Limit+
5001 PPM	4990 PPM	-0.2 %		*	
3000 PPM	3012 PPM	0.4 %		.	*
1000 PPM	1001 PPM	1 PPM		*	
500 PPM	496 PPM	-4 PPM		*	
0 PPM	-15 PPM	-15 PPM		*	
				.	
				.	
				.	
				.	
				.	
				.	
				.	
				.	
				.	
				.	

Tolerance Limits:

CO2: 50PPM or 3% of reading

TSI Incorporated does hereby certify that all materials, components, and workmanship used in the manufacture of this equipment are in strict accordance with the applicable specifications agreed upon by TSI and the customer and with all published specifications. All performance and acceptance tests required under this contract were successfully conducted according to required specifications. Furthermore, all test and calibration data supplied by TSI has been obtained using standards whose accuracies are traceable to the National Institute of Standards and Technology (NIST) or has been verified with respect to instrumentation whose accuracy is traceable to NIST, or is derived from accepted values of physical constants. Calibration procedures for this instrument comply with MIL-STD-45662A. The accuracy of the calibration facilities is greater than a ratio of 1:1 with respect to the accuracy specifications of the instrument being calibrated.

<u>Applicable Test Report</u>	<u>Report Number</u>	<u>Date Last Verified</u>
DC Voltage	E002415	06-21-11
Barometric Pressure	E001992	04-08-11
Pure Nitrogen	UT-230	03-02-12
CO2 1000 PPM in N2	EB0013815	01-21-10
CO2 5000 PPM in N2	EB0020543	02-01-12

Non-Responsive

☒ Final
Function Check

Mar 19, 2012
Calibration Date

TSI Incorporated, 500 Cardigan Road, Shoreview, MN 55126 USA
Tel: 800-874-2811 651-490-2874 FAX: 651-490-2121 www.tsi.com



CERTIFICATE OF CALIBRATION AND TESTING

TSI Model 8732

TSI Serial No. 02100504

Description IAQ Meter with CO2

Calibration Standard Multi-Gas Calibration Bench #127

CALIBRATION VERIFICATION RESULTS

Calibration Standard	Instrument Output	Difference	Tolerance Limit-	Error Compared to Tolerance 0	Tolerance Limit+
5001 PPM	5895 PPM	17.9 %		.	↓
3000 PPM	3762 PPM	25.4 %		.	↓
1000 PPM	1243 PPM	243 PPM		.	↓
500 PPM	614 PPM	114 PPM		.	↓
0 PPM	-15 PPM	-15 PPM		*	↓
***** AS FOUND DATA *****					
(INITIAL CALIBRATION CHECK)					
Tolerance Limits:					
CO2: 50PPM or 3% of reading					

TSI Incorporated does hereby certify that all materials, components, and workmanship used in the manufacture of this equipment are in strict accordance with the applicable specifications agreed upon by TSI and the customer and with all published specifications. All performance and acceptance tests required under this contract were successfully conducted according to required specifications. Furthermore, all test and calibration data supplied by TSI has been obtained using standards whose accuracies are traceable to the National Institute of Standards and Technology (NIST) or has been verified with respect to instrumentation whose accuracy is traceable to NIST, or is derived from accepted values of physical constants. Calibration procedures for this instrument comply with MIL-STD-45662A. The accuracy of the calibration facilities is greater than a ratio of 1:1 with respect to the accuracy specifications of the instrument being calibrated.

Applicable Test Report	Report Number	Date Last Verified
DC Voltage	E002415	06-21-11
Barometric Pressure	E001992	04-08-11
Pure Nitrogen	UT-230	03-02-12
CO2 1000 PPM in N2	EB0013815	01-21-10
CO2 5000 PPM in N2	EB0020543	02-01-12

Non-Responsive

☐ Final

Function Check

Mar 19, 2012

Calibration Date

TSI Incorporated, 500 Cardigan Road, Shoreview, MN 55126 USA
Tel: 800-874-2811 651-490-2874 FAX: 651-490-2121 www.tsi.com



THE INDUSTRIAL DISTRIBUTION EXPERTS

Certificate of Calibration

The following equipment was calibrated to manufacturer's specification with instrumentation whose accuracies are traceable to the *National Institute of Standards and Technology*.

Manufacturer:

Greenlee

Model:

SM-100

Serial Number:

010613107

Calibration Date:

October 5, 2011

Calibrated By:

Non-Responsive

1111 S. 27th St. Billings MT 59101
406-247-2050

Appendix I

Lead Wipe and Lead Paint Chip Table and Drawing

Appendix J
Laboratory Reports



BEST AVAILABLE COPY
ANALYTICAL REPORT
Amended

Report Date: July 17, 2012

Non-Responsive

IHI Environmental
640 East Wilmington Avenue
Salt Lake City, UT 84106

Phone: (801) 466-2223

Fax: (801) 466-9616

E-mail:

Non-Responsive

Workorder: **34-1218052**

Client Project ID: 12U-I6153/Orem Armory
062812

Purchase Order: 12U-I6153

Project Manager:

Non-Responsive

Analytical Results

Analytical Results				Collected: 06/26/2012
Sample ID: 6153-01		Media: Lead Dust Wipe		Received: 06/28/2012
Lab ID: 1218052001		Sampling Location: Orem Armory		
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 100 cm ²		Prepared: 06/29/2012
Analyzed: 06/29/2012				
Analyte	ug/sample	ug/ft ²	RL (ug/sample)	
Lead	<2.5	<23	2.5	

Sample ID: 6153-02		Media: Lead Dust Wipe		Collected: 06/26/2012	
Lab ID: 1218052002		Sampling Location: Orem Armory		Received: 06/28/2012	
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 100 cm ²		Prepared: 06/29/2012	
				Analyzed: 06/29/2012	
Analyte	ug/sample	ug/ft ²	RL (ug/sample)		
Lead	<2.5	<23	2.5		

Sample ID: 6153-03		Media: Lead Dust Wipe		Collected: 06/26/2012	
Lab ID: 1218052003		Sampling Location: Orem Armory		Received: 06/28/2012	
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 100 cm ²		Prepared: 06/29/2012	
				Analyzed: 06/29/2012	
Analyte	ug/sample	ug/ft ²	RL (ug/sample)		
Lead	<2.5	<23	2.5		

Sample ID: 6153-04		Media: Lead Dust Wipe		Collected: 06/26/2012
Lab ID: 1218052004		Sampling Location: Orem Armory		Received: 06/28/2012
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 100 cm ²		Prepared: 06/29/2012
Analyzed: 06/29/2012				
Analyte	ug/sample	ug/ft ²	RL (ug/sample)	
Lead	2.5	23	2.5	

ADDRESS: 640 West LeVoy Drive Salt Lake City, Utah, USA 84106 | PHONE: (801) 466-2223 | FAX: (801) 466-9616
ALS GROUP USA CORP. Part of the ALS Laboratory Group A Campbell Brothers Limited Company

Environmental

www.alsglobal.com

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FOIA Requested Record #J-15-0085 (UT)
Released by National Guard Bureau IHREP-V10.7
Page 1268 of 1683



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ANALYTICAL REPORT
Amended

Workorder: **34-1218052**
Client Project ID: 12U-I6153/Orem Armory
062812
Purchase Order: 12U-I6153
Project Manager: **Non-Responsive**

Analytical Results

Analytical Results			
Sample ID: 6153-05		Media: Lead Dust Wipe	Collected: 06/26/2012
Lab ID: 1218052005		Sampling Location: Orem Armory	Received: 06/28/2012
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 100 cm ²	Prepared: 06/29/2012
			Analyzed: 06/29/2012
Analyte	ug/sample	ug/ft ²	RL (ug/sample)
Lead	<2.5	<23	2.5

Sample ID: 6153-06		Media: Lead Dust Wipe		Collected: 06/26/2012	
Lab ID: 1218052006		Sampling Location: Orem Armory		Received: 06/28/2012	
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 100 cm ²		Prepared: 06/29/2012	
				Analyzed: 06/29/2012	
Analyte	ug/sample	ug/ft ²	RL (ug/sample)		
Lead	<2.5	<23	2.5		

Sample ID: 6153-07	Media: Lead Dust Wipe	Collected: 06/26/2012	
Lab ID: 1218052007	Sampling Location: Orem Armory	Received: 06/28/2012	
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 100 cm ²	Prepared: 06/29/2012 Analyzed: 06/29/2012	
Analyte	ug/sample	ug/ft ²	RL (ug/sample)
Lead	<2.5	<23	2.5

Sample ID: <u>6153-08</u>		Media: Lead Dust Wipe	Collected: 06/26/2012
Lab ID: 1218052008		Sampling Location: Orem Armory	Received: 06/28/2012
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 100 cm ²	Prepared: 06/29/2012 Analyzed: 06/29/2012
Analyte	ug/sample	ug/ft ²	RL (ug/sample)
Lead	<2.5	<23	2.5

Sample ID: 6153-09	Media: Lead Dust Wipe	Collected: 06/26/2012	
Lab ID: 1218052009	Sampling Location: Orem Armory	Received: 06/28/2012	
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 100 cm ²	Prepared: 06/29/2012 Analyzed: 06/29/2012	
Analyte	ug/sample	ug/ft ²	RL (ug/sample)
Lead	<2.5	<23	2.5



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ANALYTICAL REPORT
Amended

Workorder: **34-1218052**
Client Project ID: 12U-I6153/Orem Armory
062812
Purchase Order: 12U-I6153
Project Manager: **Non-Responsive**

Analytical Results

Sample ID: <u>6153-10</u>		Media: Lead Dust Wipe	Collected: 06/26/2012
Lab ID: 1218052010		Sampling Location: Orem Armory	Received: 06/28/2012
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 100 cm ²	Prepared: 06/29/2012 Analyzed: 06/29/2012
Analyte	ug/sample	ug/ft ²	RL (ug/sample)
Lead	<2.5	<23	2.5

Sample ID: <u>6153-11</u>	Media: Paint Chip	Collected: 06/26/2012
Lab ID: 1218052011	Sampling Location: Orem Armory	Received: 06/28/2012
Method: NIOSH 7300 Mod.	Sampling Parameter: Weight 0.104 grams	Prepared: 06/29/2012 Analyzed: 06/29/2012
Analyte	%	RL (%)
Lead	<0.012	0.012

Comments

Sample: 1218052011

Lead was reported from 5X dilution data for this sample because of interferences. The reporting limit was raised proportionately to the reported dilution level.

Quality Control: NIOSH 7300 Mod. - (HBN: 89200)

The relative percent differences (RPD) between field sample 1218053010 and its matrix duplicate (282731) were high outside of control limits at 21.1. Suspect non-homogeneity of sample to be the cause of the high RPD.

Report Authorization

Method	Analyst	Peer Review
NIOSH 7300 Mod.	Penny A. Foote	Whitney Redd

Laboratory Contact Information

ALS Environmental
960 W Levoy Drive
Salt Lake City, Utah 84123

Phone: (801) 266-7700
Email: alslt.lab@ALSGlobal.com
Web: www.alsslc.com



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ANALYTICAL REPORT

Amended

Workorder: **34-1218052**
Client Project ID: 12U-I6153/Orem Armory
062812
Purchase Order: 12U-I6153
Project Manager: **Non-Responsive**

General Lab Comments

The results provided in this report relate only to the items tested.
Samples were received in acceptable condition unless otherwise noted.
Samples have not been blank corrected unless otherwise noted.
This test report shall not be reproduced, except in full, without written approval of ALS.

ALS provides professional analytical services for all samples submitted. ALS is not in a position to interpret the data and assumes no responsibility for the quality of the samples submitted.

All quality control samples processed with the samples in this report yielded acceptable results unless otherwise noted.

ALS is accredited for specific fields of testing (scopes) in the following testing sectors. The quality system implemented at ALS conforms to accreditation requirements and is applied to all analytical testing performed by ALS. The following table lists testing sector, accreditation body, accreditation number and website. Please contact these accrediting bodies or your ALS project manager for the current scope of accreditation that applies to your analytical testing.

Testing Sector	Accreditation Body (Standard)	Certificate Number	Website
Environmental	ACCLASS (DoD ELAP)	ADE-1420	http://www.aiclasscorp.com
	Utah (NELAC)	DATA1	http://health.utah.gov/lab/labimp/
	Nevada	UT00009	http://ndep.nv.gov/bsdwlabservice.htm
	Oklahoma	UT00009	http://www.deq.state.ok.us/CSDnew/
	Iowa	IA# 376	http://www.iowadnr.gov/InsideDNR/RegulatoryWater.aspx
	Florida (TNI)	E871067	http://www.dep.state.fl.us/labs/bars/sas/qa/
	Texas (TNI)	T104704456-11-1	http://www.tceq.texas.gov/field/qa/lab_accred_certif.html
Industrial Hygiene	AIHA (ISO 17025 & AIHA IHLAP/ELLAP)	101574	http://www.aihaaccreditedlabs.org
Lead Testing:			
CPSC	ACCLASS (ISO 17025, CPSC)	ADE-1420	http://www.aiclasscorp.com
Soil, Dust, Paint, Air	AIHA (ISO 17025, AIHA ELLAP and NLLAP)	101574	http://www.aihaaccreditedlabs.org
Dietary Supplements	ACCLASS (ISO 17025)	ADE-1420	http://www.aiclasscorp.com

Definitions

LOD = Limit of Detection = MDL = Method Detection Limit, A statistical estimate of method/media/instrument sensitivity.

LOQ = Limit of Quantitation = RL = Reporting Limit, A verified value of method/media/instrument sensitivity.

ND = Not Detected, Testing result not detected above the LOD or LOQ.

** No result could be reported, see sample comments for details.

< This testing result is less than the numerical value.

() This testing result is between the LOD and LOQ and has higher analytical uncertainty than values at or above the LOQ.

Appendix K
IHSW Violation Inventory Log

Industrial Hygiene Southwest
Violation Inventory Log

LOG OF SCHEDULE OF CORRECTIVE ACTION - COMPLIANCE WITH SAFETY AND HEALTH STANDARDS
Orem Armory, Orem, Utah



CONTROL NUMBER	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/NCOIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
UTOA-062712-4.4 <input type="checkbox"/>	An asbestos survey could not be located during this IH Assistance Visit.	Orem Armory	4	Contract with a licensed firm to perform an asbestos survey and assessment.					1910.1001(j)(3)(i)
UTOA-062712-4.4 <input type="checkbox"/>	Personnel have not been provided with asbestos awareness training.	Orem Armory	4	Based on the findings of this survey, provide awareness training to assigned personnel for the specific types of asbestos in this Armory.					1910.1001(j)(3)(iii)
UTOA-062712-4.8 <input type="checkbox"/>	The kitchen oven/stove exhaust fan has an average duct velocity less than the recommended 500 fpm	Orem Armory/ Kitchen	4	Upgrade the duct velocity to 500 fpm for this exhaust fan					NFPA, Standard 96, Section 8.2.1.1 (2011)
UTOA-062712-4.4.3 <input type="checkbox"/>	Not all fire extinguishers have current monthly and annual maintenance checks	Orem Armory	4	Conduct monthly and annual maintenance checks on all fire extinguishers					1910.157 (d) (2) 1910.157 (e) (2)
UTOA-062712-4.10.6 <input type="checkbox"/>	Emergency evacuation plan is not posted throughout the building	Orem Armory	4	Signs must be posted along the exit access indicating the direction of travel to the nearest exit and exit discharge.					1910.37 (b) (4)
UTOA-062712-4.10.7 <input type="checkbox"/>	Three compressed gas cylinders are not secured from tipping within the storage cage.	Orem Armory	3	Firmly secure compressed gas cylinders against accidental dislodgement					1910.253 (b) (2) (ii)
UTOA-062712-4.10.8 <input type="checkbox"/>	One electrical outlet next to a kitchen sink was noted with an open ground and broken GFCI outlet.	Orem Armory/ Kitchen	4	Correct the open ground wiring and repair the GFCI outlet in the kitchen.					1910.303(b)(1) & NFPA 70, Article 210-8

Appendix L
Recommendations

Summary of Recommendations for Orem Armory

4.2 Painted Surface Evaluation

Recommendation

Construction personnel must follow the requirements of the OSHA Lead in Construction Standard, 29 CFR 1926.62, if they perform activities involving this painted surface that could create lead dust or fume.

4.4 Asbestos Management

Recommendations

1. Contract with a licensed firm to perform an asbestos survey and assessment.
2. If asbestos-containing materials are identified and assessed, provide awareness training to assigned personnel for the specific material types and locations of asbestos in this armory.

4.6.2 Flammable Storage Cabinets

Recommendations

Inspect the two inaccessible flammable storage cabinets to ensure;

- the chemical inventory is complete,
- MSDSs are available for each product,
- the cabinet is in good condition with properly closing doors, and
- the cabinet has flammable liquids signs and the room has a proper placard.

4.8 Kitchen Ventilation Survey

Recommendation

Increase the duct velocity to 500 fpm for this exhaust.

4.10 General Safety Walk-Through

Recommendations

1. Ensure all fire extinguishers undergo an annual and monthly maintenance check.
2. Replace the electrical access panel on electrical panel box "HA" so electrical wires cannot be contacted.
3. Secure the pressurized cylinders of carbon dioxide in the storage cage so they cannot fall.
4. Repair the wiring for the kitchen outlet and repair or replace the GFCI outlet.

Appendix M
DD Forms 2214

NOISE SURVEY (Sound Level Meter Survey)									
1. DATE (YYYYMMDD) 20120627					2. TYPE SURVEY (Enter code) 1 - INITIAL SURVEY 2 - RE-SURVEY 3 - OTHER				
3. SOUND LEVEL METER			4. MICROPHONE			5. CALIBRATOR			
a. MANUFACTURER GreenLee			a. MANUFACTURER GreenLee			a. MANUFACTURER GreenLee			
b. MODEL SM-100		c. SERIAL NO. 010613107		b. MODEL SM-100		c. SERIAL NO. 010613107		b. MODEL SM-100	
d. LAST ELECTROACOUSTIC CALIB DATE (YYYYMMDD) 20111005		d. LAST ELECTROACOUSTIC CALIB DATE (YYYYMMDD) 20111005		d. LAST ELECTROACOUSTIC CALIB DATE (YYYYMMDD) 20111005		d. LAST ELECTROACOUSTIC CALIB DATE (YYYYMMDD) 20111005			
6. WIND SCREEN (X one) <input checked="" type="checkbox"/> USED <input type="checkbox"/> NOT USED					7. MEASUREMENTS OBTAINED (X one) <input checked="" type="checkbox"/> INDOORS <input type="checkbox"/> OUTDOORS				
8. DESCRIPTION OF AREAS/DUTIES WHERE NOISE SURVEY CONDUCTED (Illustrate on additional sheet and attach to form) Orem Armory Kitchen					9. PRIMARY SOURCE OF NOISE See 11a. column below				
					10. SECONDARY SOURCE OF NOISE				
11. SOUND LEVEL DATA					12. PROTECTION REQUIRED (re: dBA - Level)				
a. LOCATION	b. METER ACTION	c. dBC	d. dBA	e. RISK ASSESSMENT CODE	a. NONE (Less than 85)	b. PLUG OR MUFF (85-100)	c. PLUG AND MUFF (100-110)	d. PLUG + MUFF + TIME LIMIT (Greater than 110)	
Garbage Disposal	S	68.2	67.0	IVD	X				
Freezer	S	74.0	63.5	IVD	X				
Refrigerator	S	70.6	60.5	IVD	X				
Kitchen Exhaust Fan	S	72.5	65.5	IVD	X				
Titan Mixer/ Food Preparation Machine	S	90	76.0	IVD	X				
					X				
NOTES: Range of levels noted by /; i.e., 102/109. At operator stations, measure at ear level. METER ACTION: Enter F for fast meter action and S for slow meter action.									
13. REMARKS (i.e., Area and equipment posted, hearing protection in use, etc.)									
14. MORE DETAILED NOISE EVALUATION REQUIRED: <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO (If "YES," identify type evaluation needed.)									
15. NAME(S) OF PERSON(S) IDENTIFIED FOR AUDIOMETRIC MONITORING (Use additional sheet if more space is needed and attach to form)									
16. SUPERVISOR OF NOISE-HAZARDOUS AREA OR OPERATION									
a. NAME (Last, First, Middle Initial) Non-Responsive			b. TELEPHONE (Include area code) (801) 722-6828			c. ORGANIZATION UTARNG			
17. SURVEY PERFORMED BY (Last Name, First Name, MI) Non-Responsive					18. HEARING CONSERVATION MONITOR (Last Name, First Name, MI) Non-Responsive				

Appendix N
IHSW Lead-Cleanup SOP

*Lead*CLEANUP & FOLLOW-UP HOUSEKEEPING
RECOMMENDATIONS**Materials Needed:**

1. Cloth Mop head (s) & Mop head holder(s) with handle.
2. Mop bucket (s) with wringer.
3. Clean cotton rags and sponges.
4. Disposable gloves
5. Large barrel (55 gal.) to store wastewater in after changing out of dirty scrub water.
6. Disposable overshoes or rubber boots. Personnel conducting cleaning operations should not take clothes, boots, etc., home for laundering.
7. HEPA vacuum
8. Six (6) mill plastic bags to dispose of waste.
9. Waste water containers.

Disposal of Waste Water and Cleaning Materials:

1. *NOTE:* Consult with Local Army National Guard Environmental Office prior to taking any collection, disposal or wiping activities commence. Each state and territory may have additional regulatory guidance on collection, storage and disposal of wastewater.
2. Mop heads should be disposed of after initial cleanup, unless otherwise advised by Environmental office personnel. Note: thorough cleaning of mop heads may be sufficient enough to reuse on future Armory cleanups but check with local Environmental Office.
3. Disposable gloves should be treated as hazardous waste.
4. Soiled cotton rags should be treated as hazardous waste.
5. Wash water contaminated with Lead can be collected and allowed to slowly evaporate leaving Lead deposits/sludge that may be collected in plastic containers, placed in metal drums, and stored for future delivery to an authorized hazardous waste disposal site.