



ARMY NATIONAL GUARD INDUSTRIAL HYGIENE - SOUTHWEST

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Industrial Hygiene Site Assistance Visit

American Fork Armory
251 South 200 East
American Fork, UT 84003

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

70

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) 854-1491



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

ARNG-CSG-IHSW

30 August 2012

MEMORANDUM THRU Utah Army National Guard, Deputy State Surgeon (DSS), 12953 S. Minuteman Drive, Draper, UT 84020-1776

FOR Commander, American Fork Armory, 251 South 200 East, American Fork, UT 84003

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit for the American Fork Armory, 251 South 200 East, American Fork, UT conducted on 28 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 American Fork Armory, American Fork, UT on 28 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. Lead Paint was found within the classroom and library area. 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)

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit for the American Fork Armory, 251 South 200 East, American Fork, UT conducted on 28 June 2012.

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 3)

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

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit for the American Fork Armory, 251 South 200 East, American Fork, UT conducted on 28 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) 804-1707 or via email at

Non-Responsive

Non-Responsive

NGB, IHSW, CV
Industrial Hygiene



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NATIONAL GUARD BUREAU
111 SOUTH GEORGE MASON DRIVE
ARLINGTON VA 22204-1382

ARNG-CSG-P

31 AUG 2012

MEMORANDUM FOR MG [Non-Responsive] The Adjutant General of Utah 12953 S.
Minuteman Dr, Draper, UT 84020-1776

SUBJECT: Executive Summary for the Industrial Hygiene Survey of American Fork
Armory at 251 South 200 East, American Fork, UT 84003 on 28 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.

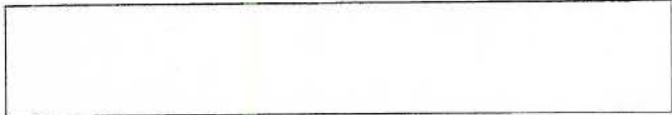
3. Recommendations. A risk assessment code (RAC) has been assigned to each health hazard identified in the report. Each type of RAC (health, safety, ergonomic) uses slightly different matrices to determine the overall severity, however a RAC 1 should be considered Critical; a RAC 2 is Serious. Follow 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 American Fork Armory on 28 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.



Non-Responsive

Chief, Industrial Hygiene

CF

Chief, Occupational Health **Non-Responsive**

DSS, **Non-Responsive** Fairview Dr, Carson City, NV 89701

CFMO, **Non-Responsive** 2460 Fairview Dr, Carson City, NV 89701

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CF w/encl

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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

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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 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.



IH ASSISTANCE VISIT

**Utah Army National Guard
American Fork Armory
251 South 200 East
American Fork, Utah 84003**

August 23, 2012

Prepared for:

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

Prepared by:

Non-Responsive

Industrial Hygiene Technician

Reviewed by:

Non-Responsive

Industrial Hygiene Program Manager

Project #12U-I6154

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EXECUTIVE SUMMARY

On June 28, 2012, [Non-Responsive] of IHI Environmental (IHI), conducted an IH Assistance Visit at the American Fork armory. The primary point of contact for information gathered during this survey was [Non-Responsive] (801) 736-6310, [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 28, 2012 Kathryn White of IHI Environmental (IHI), conducted an IH Assistance Visit at the American Fork armory located at 251 South 200 East, American Fork, Utah. The primary point of contact for information gathered during this survey was **Non-Responsive**

Non-Responsive (801) 736-6310 **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 American Fork armory has fourteen full-time guard members. The armory has offices used for administrative purposes, a training area, drill floor, storage rooms, restrooms and locker rooms, and a mechanical room. There is a Field Maintenance Shop (FMS) attached to this armory that was not included in the IH Assistance visit. There are no civilian employees at this armory. Several civilian activities carried out in this armory include use of the basketball court, and scouting activities.

Army National Guard members do not use the drill floor to clean weapons. Weapons are reportedly cleaned at Camp Williams or in the FMS.

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. A 200- $\mu\text{g}/\text{ft}^2$ criterion has been established for tool rooms, maintenance bays, furnace rooms, boiler rooms, storage closets, weapon vaults, 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 was 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 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 minimal (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™ Meter	9515	T95150720007	10/13/2011
TSI IAQ Calc™	8732	54100272	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 analytical criterion 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

The only room in this armory where peeling paint was noted was the classroom/library. One paint chip sample was collected from the wall paint in this room.

The analytical result for the paint chip sample collected indicates that it contains 0.050% lead by weight, less than the HUD standard of 0.5% for lead. Also, because there is measureable lead in the sample, OSHA's Lead in Construction Standard applies when renovation work that may affect 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 involving this painted surface that could create lead dust or fume.

4.3 Moisture Intrusion and Limited Visual Fungal Growth Evaluation

Visual evidence of water damage, moisture intrusion, of fungal growth was not observed in this armory.

Recommendation

None

4.4 Asbestos Management

An asbestos survey could not be located during this visit; however, MSG Walker 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 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 heaters in the offices. Hot water is supplied from a boiler located in the mechanical room. Air conditioning is provided by individual electrical wall-mounted air-conditioning units. Personnel reported the room temperatures are above the comfort level and maintenance personnel have been alerted to this deficiency.

The average outdoor CO₂ concentration at the time of the survey was 379 ppm. The highest CO₂ concentration measured inside the building was 695 ppm, which should not result in indoor air quality complaints.

Building air temperatures ranged from 72.8 to 76.1°F and relative humidity was between 30.6 and 32.6 percent during the testing period. Air temperatures were slightly above the recommended comfort range of 68-75°F and the relative humidity was within the recommended comfort range of between 30 and 60 percent. Low relative humidity is common in Utah during 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 State of Utah Division of Facilities, Construction, and Management personnel maintain all HVAC units in the armory.

Recommendation

Ensure air-conditioning units that serve the offices on the second floor are repaired to keep temperatures within the recommended comfort level.

4.6 Hazard Communication and Hazardous Material Storage

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

Only custodial products are maintained in this armory. A chemical inventory of all custodial products used by the armory along with their associated MSDSs is maintained in a master binder located in the janitor's closet. The master chemical inventory and MSDS binder is arranged by product number. 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.

Recommendations

None

4.6.2 Flammable Storage Cabinets

There are no flammable storage cabinets located in this armory. There is a flammable storage cabinet located in the FMS.

Recommendations

None

4.7 Safety Training and Record Keeping

The following safety documentation is maintained in the American Fork armory:

- Standard Safety Operating Procedure – NGUT-MEB-Z, 19 March 2011

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 American Fork armory:

- H.E.A.T Training
- Safeguard Training
- Hazard Communication
- Hearing Conservation

The last Safety Council Meeting was held on 9 May 2012. In addition, the UTARNG has numerous 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.

Recommendations

None

4.8 Kitchen Ventilation Survey

There is one exterior wall-mounted exhaust fan that serves the kitchen appliances. Duct velocity measurements were obtained and an average of 266 fpm was measured.

Recommendations

Upgrade the duct velocity to 500 fpm for this kitchen exhaust fan.

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 maintained by a local fire alarm company and was last tested in May 2012.
3. Fire extinguishers are strategically located throughout the armory. All extinguishers were current on their annual and monthly inspections.
4. There are no eyewash stations in this facility and no chemical use that would require one.
5. Fire evacuation routes are posted in most rooms of this armory.
6. Electrical panel boxes were inspected and were found to contain no exposed wiring or openings in the panel.

Recommendation

None

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

Industrial Hygiene Program Manager

7/23/2012

Date

Technical Assistance: For technical assistance regarding information found in this report or the performed survey, please contact **Non-Responsive** Groth 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



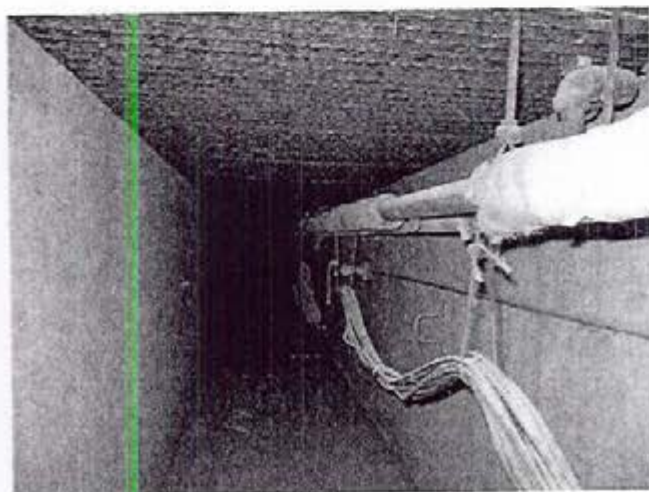
Photograph 1
American Fork Armory, Front, Exterior



Photograph 2
American Fork Armory, Rear, Exterior



Photograph 3
American Fork Armory, General View, Interior



Photograph 4
American Fork Armory, Crawl Space, Interior



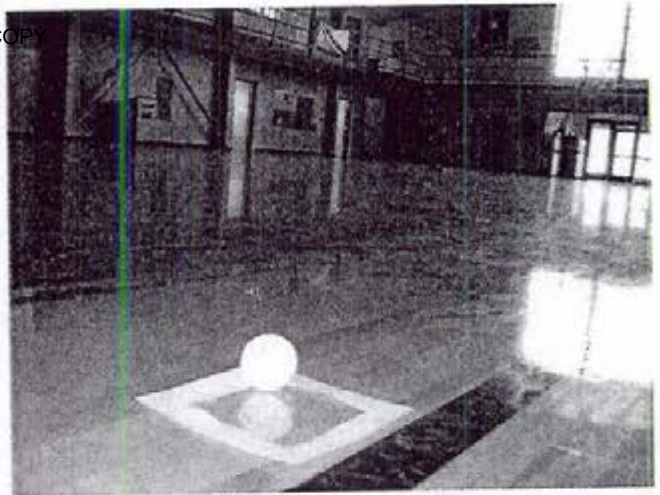
Photograph 5
Kitchen exhaust duct, Exterior



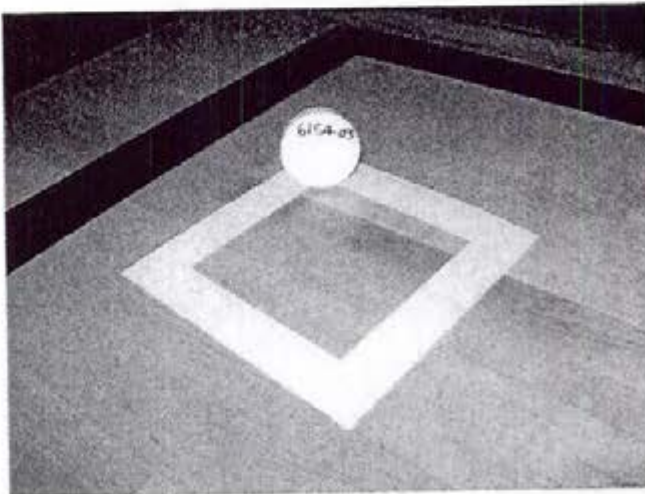
Photograph 6
Kitchen exhaust duct, Interior



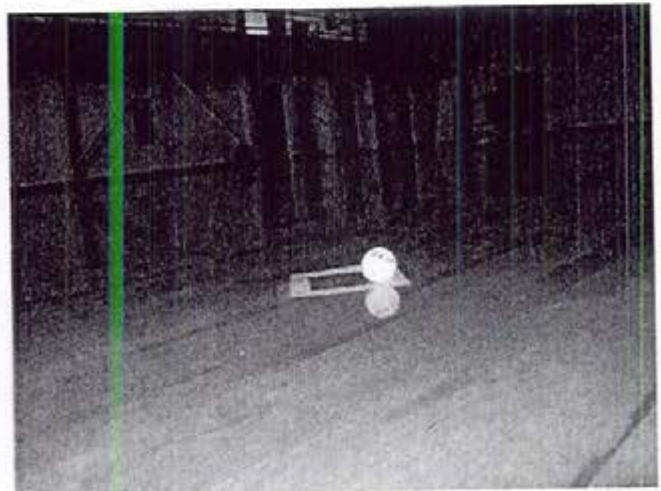
Photograph 7
Location of lead wipe sample number 6154-01



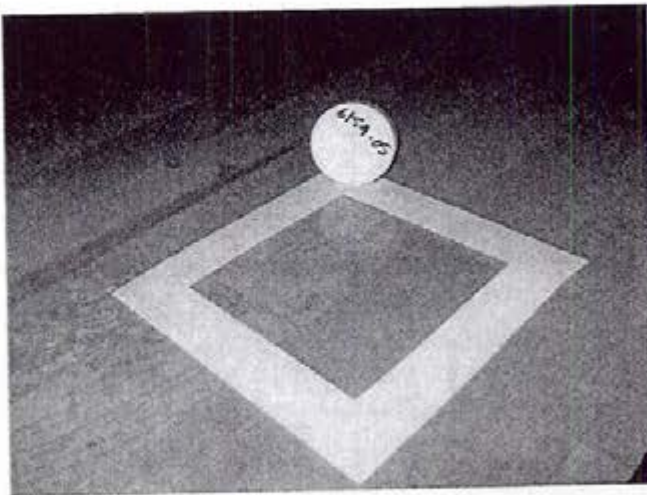
Photograph 8
Location of lead wipe sample number 6154-02



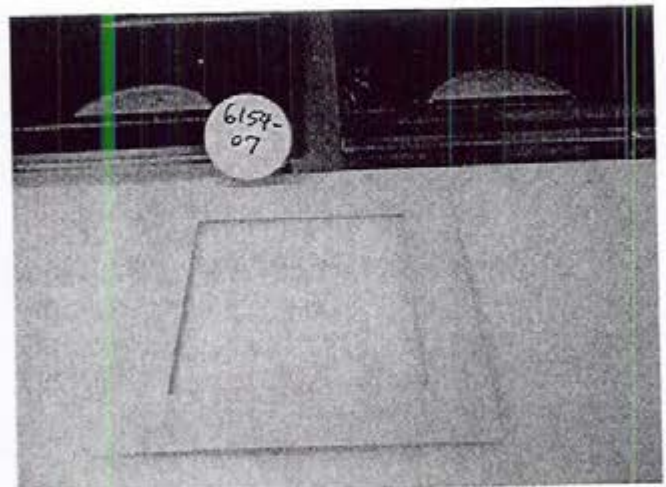
Photograph 9
Location of lead wipe sample number 6154-03



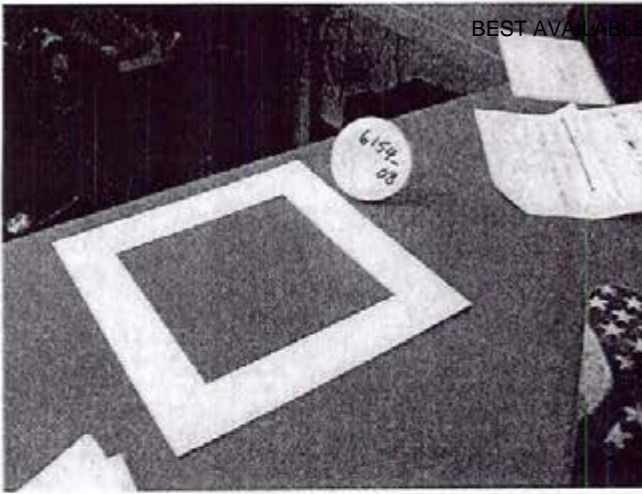
Photograph 10
Location of lead wipe sample number 6154-04



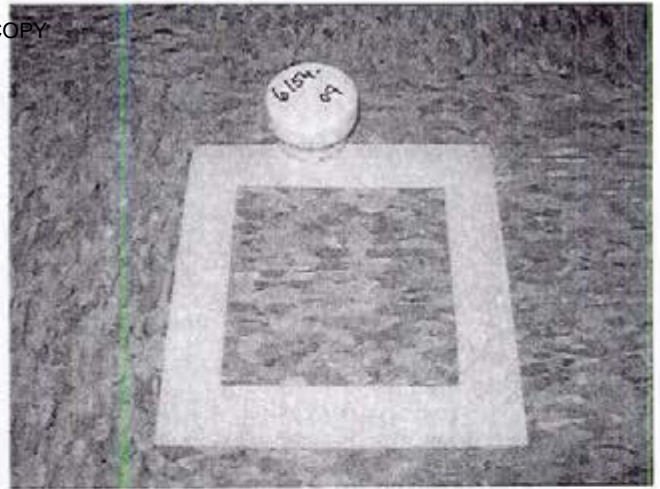
Photograph 11
Location of lead wipe sample number 6154-05



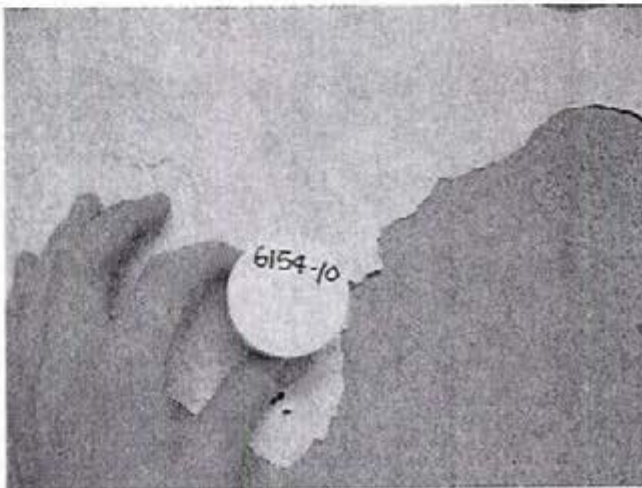
Photograph 12
Location of lead wipe sample number 6154-07



Photograph 13
Location of lead wipe sample number 6154-08



Photograph 14
Location of lead wipe sample number 6154-09



Photograph 15
Location of paint chip sample number 6154-10

Appendix D
Chemical Inventory

Amesbury, N.Y.
APM

PACKAGED PETROLEUM, OILS, AND LUBRICANTS SUBMISSION LOG

For use of this form, see DA PAM 710-2-1; the proponent agency is DCSLOG.

NOMENCLATURE 1	NSN 2	DLA CONTRACT NO. 3	BATCH/LOT NO. 4	NEW TEST DATE 5	QUANTITY ON HAND 6	REMARKS 7
CLP	9150-01-053-6688	1			4	4 pages
CLP	9150-01-054-6453	2			4	4 pages
CLP	9150-01-102-1473	3			1	3 pages
Isopropyl Alcohol	6810-01-382-2904	4			3	3 pages
Spray paint	8010-00-848-9272 8010-01-331-6105	5			7	3 pages 4 pages
Spary paint	8010-00-582-4743	6			4	3 pages
Ultra Dish Detergent		37			3	1 page
Dust mop treatment	7930-01-418-1487	8			9	2 pages
Pine disinfectant	6840-00-584-3129	9			7	4 pages
clorox	7930-00F004815	10			2	3 pages
Ring master	7930-01-423-1145	11			7	3 pages
Antibacterial Soap		12			14	4 pages
Glass cleaner	7930-01-326-8110	13			2	3 pages
All purpose cleaner	7930-00-926-5280	14			7	4 pages
Pipe cleaning Compound	6850-00-685-4763	15			2	3 pages
Spot & stain Remover.		16			3	3 pages
Brillo	7930-00-034556	17			10	3 pages

DA FORM 5832-R, AUG 1989

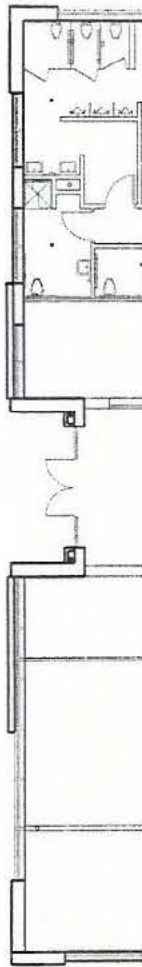
APO FE V1.00

Appendix E

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

Explanation

70.0 °F Air Temperature (°F)
 30.0% Relative Humidity (%)
 100 ppm Carbon Dioxide (ppm)



ENVIRONMENTAL
 640 E. Wilmington Ave.
 Salt Lake City, UT 84108
 801.466.2223
 ihi@ihi-env.com

State of Utah
 Utah Army National Guard
 251 South 200 East
 American Fork, Utah

Indoor Air Quality Measurements - First Level



PROJECT No: 12U-I6154
 SHEET: 3 of 4
 DRAWN BY: [Redacted]
 DATE: 6-28-2012
 REVISED BY:
 DATE:

REVIEWED BY: (UT)

Appendix F
Ventilation Data

Ventilation Survey Data and Calculations
Kitchen Exhaust Vents
American Fork, Utah Armory

General Vent Cross Section

1	2	3	4	5	6	7	8	9	10	11	12
---	---	---	---	---	---	---	---	---	----	----	----

Kitchen Exhaust Fan

Point Flow Rate (fpm)

1	409
2	334
3	365
4	289
5	70
6	56
7	444
8	426
9	396
10	283
11	69
12	55

Avg. Flow Rate = 266 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?	Generally, no - usually in Camp Williams. if so - cleaned in FMS
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.	NO
Is there any peeling paint ? Take bulk sample if able.	yes
Are there any signs of water damage or mold?	NO
Any suspected ACM ? Where and what condition is it in. Bulk sample if able.	No survey available. No training roster available.
Quality of housekeeping	good.
HVAC maintenance plan in place?	Serviced by DFCM. radiators for heating.
Overall condition of HVAC system	good. individual r/c units in offices cannot keep up w/ very hot days.
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.	NO flammable storage in armory

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	yes - 6/12
Annual fire extinguisher inspections tags current	yes - 1/12
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)	yes.
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 14 AGRS No civilian personnel ② Admin,
Any civilian activities in armory (cub scouts, classes, day care, parties etc)	Y- Basketball & Sporting events.
Obtain two lead air samples	On IHSW Request Only N/A

Evaluate Kitchen Stove Hood Flow if Present IAW NFPA Standard 96	yes.
Collect Source Noise Measurements of Kitchen Appliances and Document Using DD 2214	yes.
Conduct a safety walkthrough of entire facility document any safety deficiencies found.	yes.
Take photos 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)	American Fork Armory POC - Non-Response (801) 763-6304 251 S 200 E, American Fork, UT (Add Checklist to Report)

FMS
Supply Center
Kitchen
Classroom
Admin Office

Cooling - Wall mounted electric units
Heating - Gas-fired hot water boiler -
Hot water pumped through piping
to heaters in office areas & to
a large forced-air unit above
the drill floor.

FACILITY INFORMATION

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

1. Date Prepared: **6/28/2012**
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:
American Fork Armory, Utah Army National Guard
Domestic Response Operations, Homeland Security, Federal/War-time training and mission
4. Facility Address: **251 South 200 E, American Fork, UT 84003**
5. Primary Unit Assigned to Facility: **Non-Responsive** **(1457th Engineer Battalion), WP18T0 (HHC 1457th EN BN)**
6. Co-Tenant Units Assigned or Working Within Facility (LIST ALL): **Non-Responsive** **(FSC 1457th EN BN), FMS 3A**
7. Square Ft. Area of Facility: **approximately 22,000 sq. ft**
8. Work Schedule: **0600 – 1630; Monday through Thursday**
9. Number of work bays: **FMS 3A – 4 current workbays**
10. Equipment Density and Type: **(FMS 3A)**
 - a. List Equipment Nomenclature Serviced or Maintained at Facility: **(FMS 3A)**
 - b. List Total # for Each Nomenclature Serviced or Maintained at Facility: **(FMS 3A)**
11. Total Number of Personnel: **14 AGRs assigned to the American Fork Armory; 170 personnel assigned or attached to both HHC and FSC 1457th EN BN.**
12. No. of Admin. Personnel (Include Status – AGR, Fed. Tech., IDT, State or Contract Employee): **AF Armory – 14 AGR personnel / 6 Technicians assigned to FMS 3A**
13. No. of Maintenance Personnel (Include Status – AGR, Fed. Tech., IDT, State or Contract Employee): **(FMS 3A – All technicians = 6)**
14. Total Number of Personnel Enrolled in the Hearing Conservation Program: **170 personnel (Assigned personnel to both FSC and HHC 1457th EN BN) – Annual training conducted**

PAGE 1 of 2

15. Total Number of Personnel Enrolled in the Respiratory Protection Program: **(FMS 3A)**

16. Total Number of Personnel Enrolled in the Medical Surveillance Program: **Unsure – Organic Units send Soldiers to annual SRP for medical review and surveillance. HHC has Medical personnel assigned to unit who monitor personnel throughout the battalion.**

17. Total Number of Personnel Enrolled in the Vision Program: **N/A for AF Armory – Organic Units do send Soldiers through an annual Soldier Readiness Program (SRP) where vision is checked by medical personnel, generally January of each calendar year.**

18. Facility Commander: **Non-Responsive**

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

Non-Responsive 801-432-4155 – Assigned to HHC 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 HHC 1457th EN BN

20. Facility Telephone Number: 801-763-6304 – POC: **Non-Responsive** or 801-763-6309, **Non-Responsive**

Appendix H
Calibration Certificates



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

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

[illegible]

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

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

TSI 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 %		.	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; width: fit-content;"> ***** AS FOUND DATA ***** (INITIAL CALIBRATION CHECK) </div>					
<div style="border: 1px solid black; padding: 10px; width: fit-content; margin: 10px auto;"> <p style="text-align: center;">Tolerance Limits:</p> <p>CO2: 50PPM or 3% of reading</p> </div>					

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)		
<input checked="" type="checkbox"/> AS LEFT <input type="checkbox"/> AS FOUND			<input checked="" type="checkbox"/> IN TOLERANCE <input type="checkbox"/> 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	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

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)		
<input type="checkbox"/> AS LEFT <input checked="" type="checkbox"/> AS FOUND			<input type="checkbox"/> IN TOLERANCE <input checked="" type="checkbox"/> 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 (22.28)	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)	5731~6083 (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	E001358	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

Shariol M. Elmury

VERIFIED

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.

Appendix I

Lead Wipe and Lead Paint Chip Drawing & Table

Explanation



Lead Wipe & Paint Chip Sample Locations

Sample Number	Sample Name	Lead
01	6154-01	
02	6154-02	
03	6154-03	
04	6154-04	
05	6154-05	
06	6154-06	
07	6154-07	
08	6154-08	
09	6154-09	
10	6154-10	

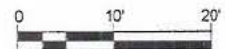
NOTE: All Wipe Sample Sizes are 100 cm²

IHI

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

State of Utah
Utah Army National Guard
251 South 200 East
American Fork, Utah

Lead Wipe & Paint Chip Sample Locations - First Level



PROJECT No: 12U-I6154

SHEET: 1 of 4

DRAWN BY: [REDACTED]

DATE: 6-28-2012

REVISED BY:

DATE:

REVIEWED BY:

DATE:

Explanation

Lead Wipe & Paint Chip Sample Locations

Sample Number	Sample Name	Lead
01	6154-01	
02	6154-02	
03	6154-03	
04	6154-04	
05	6154-05	
06	6154-06	
07	6154-07	
08	6154-08	
09	6154-09	
10	6154-10	

NOTE: All Wipe Sample Sizes are 100 cm²

ENVIRONMENTAL
640 E. Wilmington Ave.
Salt Lake City, UT 84106
801.486.2223
ih@ih-environment.com

State of Utah
Utah Army National Guard
251 South 200 East
American Fork, Utah

Lead Wipe & Paint Chip Sample Locations - Second Level



PROJECT No: 12U-I6154

SHEET: 2 of 4

DRAWN BY: Keith

DATE: 6-28-2012

REVISED BY:

DATE:

American Fork, UT - Lead Wipe and Paint Chip Sample Results

Lead Wipe Sample Results

Sample Number	Collection Date	Location	Result $\mu\text{g}/\text{ft}^2$
6154-01	6/28/2012	Center of Drill Floor	<23
6154-02	6/28/2012	NE Area of Drill Floor	<23
6154-03	6/28/2012	SE Area of Drill Floor	<23
6154-04	6/28/2012	SW Area of Drill Floor	<23
6154-05	6/28/2012	NW Area of Drill Floor	<23
6154-06	6/28/2012	Blank	N/A
6154-07	6/28/2012	Food Prep Surface in Kitchen	<23
6154-08	6/28/2012	MSG William Walker's Desk	<23
6154-09	6/28/2012	Weapons Vault Floor	93

Paint Chip Sample Result

Sample Number	Collection Date	Location	Lead Result (% by weight)
6128-10	5/23/2012	Classroom/Library E Wall	0.050

Appendix J
Laboratory Reports



BEST AVAILABLE COPY
ANALYTICAL REPORT

Report Date: July 05, 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: 34-1218053

Client Project ID: 12U-I6154/American Fork
Armory

Purchase Order: 12U-I6154
Project Manager: Non-Responsive

Analytical Results

Sample ID: 6154-01	Media: Ghost Wipe	Collected: 06/27/2012
Lab ID: 1218053001	Sampling Location: American Fork 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: 6154-02	Media: Ghost Wipe	Collected: 06/27/2012
Lab ID: 1218053002	Sampling Location: American Fork 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: 6154-03	Media: Ghost Wipe	Collected: 06/27/2012
Lab ID: 1218053003	Sampling Location: American Fork 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: 6154-04	Media: Ghost Wipe	Collected: 06/27/2012
Lab ID: 1218053004	Sampling Location: American Fork 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: 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

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ANALYTICAL REPORT

Workorder: **34-1218053**
Client Project ID: 12U-I6154/American Fork
Armory
Purchase Order: 12U-I6154
Project Manager: **Non-Responsive**

Analytical Results

Sample ID: <u>6154-05</u>	Media: Ghost Wipe	Collected: 06/27/2012
Lab ID: 1218053005	Sampling Location: American Fork 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>6154-06</u>	Media: Ghost Wipe	Collected: 06/27/2012
Lab ID: 1218053006	Sampling Location: American Fork Armory	Received: 06/28/2012
Method: NIOSH 7300 Mod.	Sampling Parameter: Area Not Applicable	Prepared: 06/29/2012
		Analyzed: 06/29/2012
Analyte	ug/sample	ug/ft ² RL (ug/sample)
Lead	<2.5	NA 2.5

Sample ID: <u>6154-07</u>	Media: Ghost Wipe	Collected: 06/27/2012
Lab ID: 1218053007	Sampling Location: American Fork 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>6154-08</u>	Media: Ghost Wipe	Collected: 06/27/2012
Lab ID: 1218053008	Sampling Location: American Fork 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>6154-09</u>	Media: Ghost Wipe	Collected: 06/27/2012
Lab ID: 1218053009	Sampling Location: American Fork 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	10	93 2.5



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ANALYTICAL REPORT

Workorder: 34-1218053
Client Project ID: 12U-I6154/American Fork
Armory
Purchase Order: 12U-I6154
Project Manager: Non-Responsive

Analytical Results

Sample ID: 6154-10	Media: Paint Chip	Collected: 06/27/2012
Lab ID: 1218053010	Sampling Location: American Fork Armory	Received: 06/28/2012
Method: NIOSH 7300 Mod.	Sampling Parameter: Weight 0.1007 grams	Prepared: 06/29/2012
		Analyzed: 06/29/2012
Analyte	%	RL (%)
Lead	0.050	0.0025

Comments

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.	Non-Responsive	Non-Responsive

Laboratory Contact Information

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

Phone: (801) 266-7700
Email: alsit.lab@ALSGlobal.com
Web: www.alsslc.com



BEST AVAILABLE COPY
ANALYTICAL REPORT

Workorder: **34-1218053**
Client Project ID: 12U-I6154/American Fork
Armory
Purchase Order: 12U-I6154
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
American Fork Armory, American Fork 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"/> AFA-006282012;4.2 <input type="checkbox"/>	The analytical result for the paint chip sample collected indicates that it contains 0.050% lead by weight, considered lead-containing by OSHA.	Classroom/ Library	3	Construction personnel must follow the requirements of the OSHA Lead in Construction Standard, 29 CFR 1926.62, prior to performing construction activities that affect this painted surface.					29 CFR 1926.62
AFA-006282012;4.4 <input type="checkbox"/>	An asbestos survey could not be located during this IH Assistance Visit.	American Fork Armory	4	Either locate the asbestos survey for this building or contract with a licensed firm to perform an asbestos survey and assessment.					Prudent Industrial Hygiene Practices
AFA-006282012;4.4 <input type="checkbox"/>	Personnel have not been provided with asbestos awareness training.	American Fork Armory	3	Based on the findings of this survey, provide awareness training to assigned personnel for the specific types of asbestos in this Armory.					Recommended Practice
AFA-006282012;4.8 <input type="checkbox"/>	Duct velocity on the exterior wall-mounted exhaust fan that serves the kitchen appliances averaged 266 fpm.	American Fork Armory	4	Upgrade the duct velocity to 500 fpm for this kitchen exhaust fan.					2011 National Fire Protection Association Standard 96, Section 8.2.1.1

Summary of Recommendations for UTARNG Armory, American Fork, Utah

4.2 Painted Surface Evaluation

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

1. Locate the asbestos survey 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

Ensure air-conditioning units that serve the offices on the second floor are repaired to keep temperatures within the recommended comfort level.

4.8 Kitchen Ventilation Survey

Upgrade the duct velocity to 500 fpm for these kitchen exhaust fans.

Appendix M
DD Form 2214

NOISE SURVEY

(Sound Level Meter Survey)

1. DATE (YYYYMMDD) 20110628				2. TYPE SURVEY (Enter code) 1 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	c. SERIAL NO. 010613107			
d. LAST ELECTROACOUSTIC CALIB DATE (YYYYMMDD) 20100916		d. LAST ELECTROACOUSTIC CALIB DATE (YYYYMMDD) 20100916		d. LAST ELECTROACOUSTIC CALIB DATE (YYYYMMDD) 20100916				
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)
Refrigerator	S	70.3	61.0	IVD	<input checked="" type="checkbox"/>			
Vulcan Oven - Top	S	73.3	68.2	IVD	<input checked="" type="checkbox"/>			
Vulcan Oven - Bottom	S	72.3	66.1	IVD	<input checked="" type="checkbox"/>			
Vulcan Oven - Both Running	S	73.3	71.0	IVD	<input checked="" type="checkbox"/>			
Overhead Vent	S	71.5	59.8	IVD	<input checked="" type="checkbox"/>			
Garbage Disposal	S	78.6	74.3	IVD	<input checked="" type="checkbox"/>			
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 G			b. TELEPHONE (Include area code) (801)763-6310		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.



**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

Beaver Readiness Center

Indoor Firing Range (CIFR)

**120 South Main Street
Beaver, UT 84713**

24 April 2014

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

28 JUN 2014

MEMORANDUM THRU **Non-Responsive** OHM, 12953 Minuteman Dr. Draper, UT 84020

FOR Commander, Beaver Readiness Center Converted Indoor Firing Range (CIFR) 120 South Main Street
Beaver, UT 84713

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for Beaver Readiness
Center Converted Indoor Firing Range (CIFR) 120 South Main Street Beaver, UT on 24 APR 2014

1. References. See survey report.

2. General.

a. At the request of the NGB Industrial Hygiene, Southwest (IHSW) Region, an Industrial Hygiene (IH) Site Assistance Visit (SAV) and cursory review of safety related items and programs was conducted at the Beaver Readiness Center Converted Indoor Firing Range (CIFR) 120 South Main Street Beaver, UT on 24 APR 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 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 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 (IHSAV) for Beaver Readiness Center Converted Indoor Firing Range (CIFR) 120 South Main Street Beaver, UT on 24 APR 2014

- 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 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 (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
IFR (Converted) - Beaver, UT

CONTROL NUMBER	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/NCIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
UTDRIFR-04242014-4.3	Lead concentrations exceed established criteria	Converted IFR	3	See 3 Recommended Corrective Actions Below					29 CFR 1910.1025 (h)(1)
UTDRIFR-04242014-5.3	Asbestos Building Materials: inspection, re-inspection and Asbestos Hazard Management Plan.	Facility	3	1) Conduct a facility survey to identify & assess extent of asbestos hazards 2) Develop & implement an Asbestos Hazard Management Plan					AR 420-1, 5-24b, c, & d

BEST AVAILABLE COPY

RECOMMENDED CORRECTIVE ACTIONS FOR UTDRIFR-04242014-4.3

- 1) Conduct a lead assessment of the CIFR space to assess the extent of lead contamination present above the drop-in ceiling.
- 2) Avoid any maintenance, repair, remodel, cleaning, and any other activities that may disturb existing lead contamination on surfaces above the drop-in ceiling tiles.
- 3) Clean/remediate contaminated surfaces in a manner that prevents spreading of lead dust/contamination.

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 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.

**Industrial Hygiene Site Assistance Visit
Beaver Readiness Center
(Converted Indoor Firing Range)
Beaver, UT
April 29, 2014**





INDUSTRIAL HYGIENE SITE ASSISTANCE VISIT (IHSV)

BEAVER READINESS CENTER (CONVERTED INDOOR FIRING RANGE)
120 S. MAIN ST,
BEAVER, UT 84713

April 29, 2014

Prepared for:
Industrial Hygiene Southwest
10510 Superfortress Avenue, Suite C
Mather, California 95655

Prepared by:
NES, Inc.
1141 Sibley Street
Folsom, California 95630

NES Job Number: 013.IH1716.11

Prepared by:

Non-Responsive

Associate Industrial Hygienist

Reviewed by:

Non-Responsive

Non-Responsive

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EXECUTIVE SUMMARY

On April 29, 2014, **Non-Responsive** Associate Industrial Hygienist, and **Non-Responsive** Industrial Hygiene Specialist, both with Network Environmental Systems, Inc. (NES), conducted an Industrial Hygiene Site Assistance Visit (IHSAB) at the converted Indoor Firing Range (IFR) located at 120 South Main Street in Beaver, Utah. The primary point of contact (POC) for information gathered during this survey was **Non-Responsive** who may be reached by phone at (435) 438-2262 or by email at **Non-Responsive**.

The objectives of this IHSAB were to:

- Obtain historical information regarding the conversion of the IFR;
- Inspect & assess the converted IFR space & HVAC system;
- Collect metal surface wipe samples;
- Measure illumination levels;
- Collect indoor air quality data;
- Evaluate existing safety hazards;
- Inspect & evaluate the paint booth operation and systems (if present); and
- Evaluate the facility for potential asbestos, lead, and mold hazards.

Significant findings for this IHSAB can be found in the Industrial Hygiene Southwest (IHSW) – Violation Inventory Log located in Appendix L 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 methodologies, results, findings, regulatory requirements, and recommendations. Appendices may be left blank where information has been requested from the facility and not yet received.

Commendables: **Non-Responsive** deserve accolades for assisting with this IHSAB. **Non-Responsive** was cooperative with questions asked, was helpful finding information regarding site history and the IFR conversion, provided access into the necessary areas, and provided assistance obtaining information. **Non-Responsive** was critical in obtaining historical information regarding the use of the Building as an IFR. The details within this report are a direct result of the assistance provided by **Non-Responsive**.

Non-Responsive

1.0 INTRODUCTION

On April 29, 2014, **Non-Responsive** Associate Industrial Hygienist, and **Non-Responsive** Industrial Hygiene Specialist, both with NES, conducted an IHSAB at the converted IFR located at 120 South Main Street in Beaver, Utah. The primary POC for information gathered during this survey was **Non-Responsive** who may be reached by phone at (435) 438-2262 or by email at **Non-Responsive**

1.1 Objectives

The primary objective of the IHSAB was to evaluate the occupational environment of the areas within the converted IFR in order to determine the presence of health and safety risks. Processes and activities at the facilities were evaluated and recommendations to control the existence and extent of potentially hazardous operations or conditions at the Army National Guard (ARNG) facility were documented accordingly. This IHSAB will serve to establish a baseline Hazard Assessment (HA) / Job Safety Analysis (JSA) of workplace and process conditions or update/validate a previous HA/JSA so a worker's history of exposures, or potential exposures is provided for each civilian and military employee.

1.2 Scope of Work

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

- Obtain historical information regarding the conversion of the IFR;
- Inspect & assess the converted IFR space & HVAC system;
- Collect metal surface wipe samples;
- Measure illumination levels;
- Collect indoor air quality data;
- Evaluate existing safety hazards;
- Inspect & evaluate the paint booth operation and systems (if present); and
- Evaluate the facility for potential asbestos, lead, and mold hazards.

2.0 PROCESS DESCRIPTION

The Beaver Readiness Center, which is approximately 5,000 square feet (ft²) in size, contains an area that was once used as an indoor firing range (IFR). The Readiness Center currently contains a myriad of offices used for administrative support purposes, bathrooms, classrooms, drill floor, kitchen and weight room. The exact date the building was constructed was not known, however, staff reported that it was built sometime in the 1930's. There were two (2) reported renovations to the facility that were done in 1962 and 2011. It was reported that the drill floor and kitchen facilities are occasionally rented out by the local community (Boy Scouts, Jr. Jazz and other community groups).

The floor plans for the 1962 renovation showed a "Rifle Range" that was roughly 1,000 ft² running east / west along the southern edge of the drill floor and north of the kitchen and classrooms. The current Readiness Center personnel were unaware that an IFR had previously been located in the facility. **Non-Responsive** called his father, who was a member of the National Guard in Beaver for approximately 30 years. **Non-Responsive** father reported that the hallway was used as a small caliber (.22) rifle range. A three (3) inch metal plate was placed at an angle at the west end of the hallway with sand at the base to capture the bullets. The firing range was not a "typical" concrete tube IFR, but rather open on the north and east sides. Wooden columns were in place along the north edge of the IFR. It is unknown whether there was a ventilation system installed, but based on the reported configuration it seems unlikely.

NES identified two (2) current building components that were likely in place while the IFR was in use, including the wooden ceiling above the drop-in ceiling and the wooden posts along the southern edge of the drill floor. The wood ceiling ran the length of the converted IFR and was approximately 6 inches above the drop-in ceiling. The area between the drop-in ceiling and wood panels was used to run wiring. The drop-in ceiling was reported to have been installed in 2011. The wooden columns were reportedly refinished during the 2011 renovations. Two (2) additional components were present, but had been altered since the IFR was active, including the drill floor (refinished during the 2011 renovations) and concrete subfloor, which had since been repainted. The steel plate was no longer onsite and it was reported that the hallway had not been used as an IFR in approximately 20-30 years.

The primary unit assigned to the Readiness Center was the Battery "C" 2/222 FA **Non-Responsive**. There were a total of two (2) full time guard members assigned to the facility. The facility operates Monday through Thursday from 0600 to 1630. NES was unable to obtain an employee list. The Employee list is located in Appendix K.

In 2011 the Readiness Center was renovated with new walls being added and a drop-in ceiling installed over the wooden ceiling panels of the converted IFR. No documentation of the conversion or renovation was available during the IHS AV. Personnel on-site did not know whether asbestos was present, inspected, or abated during the renovations. There were no records (building material survey or Asbestos Hazard Management Plan) available to NES. Additionally, no records were present on-site indicating that a previous IHS AV had been conducted at the facility.

3.0 METHODS

NES assessed multiple conditions and operations using quantitative means. The methods used to conduct these assessments are detailed in this section. Results of these assessments are detailed in Section 4.0.

3.1 Indoor Air Quality

Carbon dioxide (CO₂) measurements are often used as a screening technique to evaluate whether adequate quantities of outdoor air are being introduced and evenly distributed to interior occupied spaces. Human occupants produce CO₂, water vapor, and other bio effluents during respiration. The American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE), in their Standard 62.1-2010, *Ventilation for Acceptable Air Quality*, recommend maintaining CO₂ below a concentration that is 700 parts per million (ppm) above outdoor levels. Outside CO₂ concentrations are typically about 350 ppm. Providing sufficient ventilation to maintain steady-state CO₂ concentrations at this level will assure that a substantial majority of people entering a space will be satisfied with respect to human bio effluents (body odors).

Temperature is commonly measured during IAQ assessments to determine comfort of occupants. Indoor temperatures are recommended to range 68-74° Fahrenheit (F) during the winter and 72.5-80 °F in the summer. Relative humidity indicates the amount of moisture in the air. Typically, interior humidity levels above 65-70% can be conducive to fungal conditions.

Carbon dioxide, temperature, and relative humidity were measured using a TSI QTrak IAQ Meter, model 8551. A copy of the current annual calibration certificate for this instrument is located in Appendix H.

3.2 Air Monitoring – Carbon Monoxide

Carbon monoxide is a colorless, odorless, poisonous gas. It is produced by the incomplete burning of solid, liquid, and gaseous fuels. Appliances fueled with natural gas, liquefied petroleum (LP gas), oil, kerosene, coal, or wood may produce CO. Through the use of ventilation, it is uncommon to find elevated concentrations of CO indoors. The health effects of CO depend on the concentration of CO and length of exposure, as well as each individual's health condition. The concentration of CO is measured in ppm. Health effects from exposure to CO levels of approximately 1 to 70 ppm are uncertain, but most people will not experience any symptoms. Air monitoring for carbon monoxide (CO) was performed

throughout the IFR area using a TSI QTrak IAQ Meter, model 8551. A copy of the annual calibration certificate for this instrument is located in Appendix H.

3.3 Metal Wipe Sampling

Lead dust may be introduced into a facility from work processes, facility finishes, consumer products, or other sources. In facilities with converted IFRs, residual lead contamination may be present as a result of insufficient decontamination prior to conversion. Lead wipe samples were collected from horizontal surfaces in various locations throughout the converted IFR to evaluate the potential presence of lead-contaminated dust and provide insight as to whether the space may have been decontaminated prior to being re-purposed.

Ghost Wipe™ brand wipes were used to wipe a four (4) square inch (in²) or one (1) square foot (ft²) areas. In sample locations where these area sizes could not be obtained, the sample area size was recorded. All sample results were converted to micrograms per square foot (µg/ft²) to allow for easier and better data evaluation. The collected wipe samples were placed in clean and labeled plastic centrifuge tubes and promptly sealed upon collection. Sampling personnel donned a clean pair of Nitrile gloves for each sample collected. Samples were submitted to ALS Environmental Laboratory, located in Salt Lake City, Utah, to be analyzed for lead in accordance with NIOSH Method 7300. The wipes used conform to American Standards for Testing Materials (ASTM) E1792, Standard Specification for Wipe Sampling Materials for Lead in Surface Dust. See Appendix I for a summary of sample results and Appendix J for laboratory reports.

3.4 Painted Surface Evaluation

Based on the age of most National Guard facilities, it is possible that lead paint could be present on walls and other surfaces. If kept intact, the potential hazard of lead paint is minor. Paint that is peeling or otherwise degraded could potentially result in lead-contaminated dust and increases the risk of exposure. Thus, an identification and assessment of deteriorating paint was conducted as part of this IHS AV.

The painted surfaces within the converted IFR were in good and intact condition. Peeling paint was not identified within the converted IFR.

3.5 Illumination Level Monitoring

Illumination measurements were taken throughout the facility using a Konica Minolta Light Meter, Model TL-1. Measurements in office areas were taken at typical work locations, such as the tops of desks and near workstations. To provide information on the overall lighting

conditions in the remainder of the facility, measurements were taken from the surfaces of typical work locations and at waist level from selected locations. A copy of the annual calibration certificate for this instrument is located in Appendix H.

3.6 Equipment Used

The following equipment was used for this survey:

Type	Model Number	Serial Number	Calibration Date
TSI QTrak IAQ Meter	8551	51380	October 2013
Konica Minolta Light Meter	TL-1	00279019	May 2013

Please see Appendix H for a complete inventory of calibration certificates of equipment used during this IHS AV.

3.7 Quality Assurance

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

- Using appropriately educated & experienced staff who receive continuing education;
- Documentation of pertinent field and sampling information;
- Peer review of sampling strategy, field methods, calculations, and reports;
- Strict adherence to documented method requirements, in particular to NIOSH & OSHA methods, & 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 SAMPLING RESULTS

4.1 Indoor Air Quality

The facility has methods and engineering controls in place to provide adequate IAQ. General dilution ventilation is provided throughout most areas within the facility. The HVAC system was able to provide general dilution by removing indoor contaminants and displacing them outdoors. Also the HVAC system was able to provide temperature controls, relative humidity controls and air cleaning. The outdoor CO₂ concentration was measured to be 375 ppm; therefore, the maximum indoor CO₂ concentration recommended by ASHRAE was 1,075 ppm. The CO₂ concentrations from inside the converted IFR ranged between 450 and 471 ppm. The areas measured were within the ASHRAE recommended range for CO₂.

ASHRAE recommends maintaining temperatures between 68 and 75°F and relative humidity between 30% and 60% to minimize the potential for growth of allergenic or pathogenic organisms. Temperatures inside the building ranged between 70.0 and 70.1°F. Relative humidity ranged from 18.8 to 20.1%. The areas measured were within the ASHRAE recommended range for temperature, but were found to be below the recommended range for relative humidity. However, the outdoor humidity was very low.

A table of the sample locations and summary of corresponding IAQ measurements is available in Appendix E of this report.

4.2 Air Monitoring – Carbon Monoxide

Carbon monoxide concentrations were measured at a total of four (4) locations near the converted IFR using a TSI QTrak IAQ Meter, model 8551. The concentration of CO was measured at 1 ppm in all locations, each below the outdoor background concentration measured (2 ppm). These concentrations are also below the exposure limit ceiling of 200 ppm set forth by OSHA. A summary of CO measurements collected is provided in Appendix E.

4.3 Metal Wipe Sampling

Wipe samples for lead dust were collected from horizontal and vertical surfaces in selected areas of the Beaver converted IFR area to determine if lead contamination was present from the former IFR. Samples were collected from building materials believed to be installed during the renovation of the IFR and from building components that could have been present when the IFR was active (wood ceiling, wood posts, drill floor and painted concrete floor).

The US Department of Housing and Urban Development (HUD) recommends 40 micrograms per square foot ($\mu\text{g}/\text{ft}^2$) as a clearance level for floors (includes carpeted and uncarpeted floors). This guideline was established to prevent lead exposure to children in domestic and public facilities. The Army National Guard has applied this criterion to any areas of a facility that may be used by the public for nonmilitary functions, including: administrative offices, restrooms, classrooms, and hallways. NES was informed that some of the spaces within the area of the converted IFR, specifically the drill floor, can be occupied by public and nonmilitary personnel. Thus, all surfaces sampled during this IHSAB were compared to the 40 $\mu\text{g}/\text{ft}^2$ criteria.

A total of ten (10) lead wipe samples were collected during the IHSAB to be analyzed in accordance with NIOSH Method 7300, modified for Ghost WipesTM. Samples were collected from the following locations: hallway floor, wood panel ceiling above drop-in ceiling, wood columns and drill floor. Photographs were taken of each sampling location and are presented in Appendix C (Photo Log). The analytical results are summarized in Table 1. Laboratory results are attached in Appendix J.

Table 1: Summary of Lead Wipe Sample Results

Sample Number	Sample Description	Sample Area (ft^2)	Analytical Result ($\mu\text{g}/\text{ft}^2$)	ARNG/HUD Standard ($\mu\text{g}/\text{ft}^2$)
042914-IFRB-W-01	Hallway Floor, East End	1	<1.3	≤ 40
042914-IFRB-W-02	Hallway Floor, Center	1	<1.3	≤ 40
042914-IFRB-W-03	Hallway Floor, West End	1	4.4	≤ 40
042914-IFRB-W-04	Above drop-in ceiling on old wood panel ceiling, East end	1	65	≤ 40
042914-IFRB-W-05	Above drop-in ceiling on old wood panel ceiling, East of class hallway	1	75	≤ 40
042914-IFRB-W-06	Above drop-in ceiling on old wood panel ceiling, west of class hallway	1	76	≤ 40
042914-IFRB-W-07	Above drop-in ceiling on old wood panel ceiling, West end	1	53	≤ 40
042914-IFRB-W-08	Vertical wood column, West end of hallway	1	<1.3	≤ 40
042914-IFRB-W-09	Vertical wood column, east end of hallway	1	<1.3	≤ 40
042914-IFRB-W-10	Cement floor border to drill floor, east end of hallway.	1	<1.3	≤ 40

¹ = Analytical results were corrected for the actual area samples so all results were in $\mu\text{g}/\text{ft}^2$

DC = Drop ceiling

Bold = Denotes sample results were greater than the allowable level set by ARNG

Analytical results for samples which exceed the acceptable concentration are shown in bold. The analytical results indicate acceptable lead concentrations for the surfaces below the drop-in ceiling. Elevated lead concentrations were identified impacting building materials that are likely to have been in place when the IFR was active (wood panel ceiling).

Sample results indicate that the IFR was not fully decontaminated prior to being converted. Sample results from surfaces below the drop-in ceiling suggest that lead dust is not currently impacting occupied spaces. However, lead dust migration into the occupied spaces could potentially occur in the future due to disturbing settled dust above the drop-in ceiling and future renovations within the space.

Due to the location of the lead dust and the fact that lead concentrations were below limits of detection for the surfaces below the drop-in ceiling, immediate remediation is not required. Further evaluation of surfaces above the drop-in ceiling should be conducted to fully assess potential lead contamination. A site work plan should be developed to control potential employee exposures by notifying facilities personnel of the presence of lead dust above the drop in ceiling and to prevent inadvertent spreading of lead dust from within the converted IFR to outside areas. Access and work above the drop-in ceiling should be prohibited until further evaluation and remediation is completed.

4.4 Painted Surface Evaluation

Peeling paint was not identified within the converted IFR facility during this IHS AV.

4.5 Illumination Level Monitoring

Illumination levels were measured throughout the areas of the converted IFR. Measurements were collected in foot-candles (FC). In general, the measurements were taken at task surface level, such as on desks or work benches. 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.

Lighting measurements were collected in a total of four (4) locations. Based on the measurements collected in comparison to the above criteria, lighting was sufficient in each of the locations measured. See Appendix E for a summary of illumination measurements.

5.0 FACILITY SYSTEMS & HAZARDS

5.1 Facility/Building HVAC System

An evaluation of the heating, ventilation, and air-conditioning (HVAC) systems that serve the converted IFR was conducted. This evaluation consisted of a visual inspection of the system. The HVAC system helped to provide the facility with proper indoor air quality (IAQ); temperature, humidity and CO₂ levels.

Air was supplied throughout the Readiness Center via ducted supply and return lines connected to an air handling unit (AHU). It was reported that the HVAC system may have been replaced during the 2011 renovations. Some of the ducting for the HVAC system passed through the wood panel ceiling and drop-in ceiling in the converted IFR area. The design of the supply vent did not allow *NES* to view how tight the ducting was as it passed through the wooden ceiling. Additionally, *NES* was unable to access the space above the wooden ceiling and determine whether lead contamination had migrated into the space. Wipe sample results, discussed previously in Section 4.3, indicate that lead dust is not migrating from the area above the drop-in ceiling due to the ducting passing through the drop-in ceiling. *NES* was not able to observe the ducting above the wood panel ceiling or the HVAC air handling unit(s).

5.2 Water Damage and Limited Fungal Growth Evaluation

The interior of the facility was visually inspected for water damage and subsequent fungal growth resulting from moisture. There were no visual signs of fungal growth, active or former water intrusion observed during this IHS AV.

5.3 Asbestos Evaluation

Personnel on-site did not know whether asbestos was present, inspected, or abated during the renovations of the IFR. A cursory evaluation of the converted IFR interior spaces was made to identify the presence of building materials suspected to contain asbestos. Building materials suspected to contain asbestos were identified during the IHS AV, but there was no asbestos survey report and/or Asbestos Hazard Management Plan available on-site. Suspect building materials identified in the converted IFR included: base cove mastic, 2x4 foot ceiling tiles, and drywall with associated tape and joint compound.

No bulk samples were collected during this IHS AV due to variability in State regulations regarding certification and sampling requirements. Having asbestos-containing materials (ACM) in a building does not constitute a hazard in of itself. However, if the ACM is or were

to become damaged, asbestos fibers could be released and made airborne, which could result in potential exposure to asbestos fibers. Thus, ACM should be managed in a manner to protect them from becoming damaged.

6.0 OBSERVATIONS AND QUALITATIVE ASSESSMENTS

NES assessed multiple conditions and operations using qualitative means and observations. Our methods and findings of qualitative assessments made are detailed in this section.

6.1 Observations of Converted IFR

NES visually inspected the accessible spaces within the converted IFR space and select access points above the drop-in ceiling. The converted IFR was made up of a hallway between kitchen/office space and the drill floor. The majority of spaces observed were in good and clean condition. *NES* did not observe any dust accumulation on horizontal surfaces.

NES accessed the space above the drop-in ceiling in four (4) locations in order to assess whether IFR building components (ceiling, ventilation system, or other components) may still exist. It is believed that the wood panel ceiling above the drop-in ceiling was present when the IFR was active. All other visible components (Wiring, lights, supply/return ducts) appeared to be newer and likely installed during the 2011 renovation. Pictures of the access points are provided in Appendix C (Photo Log). The location of the access points are shown on the lead wipe sampling map in Appendix I.

6.2 Contract (Non-DoD) Operations

Contract (Non-DoD) operations were reportedly performed at this facility. However, the converted IFR made up only a small portion of the overall Readiness Center facility and thus, this information was not obtained during this IHSAV.

6.3 Safety Walk-Through

NES conducted a walk-through of the converted IFR to identify existing conditions and whether safety hazards or regulatory deficiencies were present. Some of the conditions observed were documented in photographs, attached in Appendix C (Photo Log).

1. The housekeeping and overall condition of the converted IFR was good. No outstanding safety issues were identified at the time of the inspection.

7.0 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, *NES*' professional opinions are based in part on the interpretation of data from discrete sampling locations that may not represent conditions at non-sampled locations. *NES* assumes no responsibility for omissions or errors resulting from inaccurate information or data provided by sources outside of *NES*, 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 *NES* 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.

8.0 PROJECT APPROVAL

This IHSAV was reviewed and approved by:

Non-Responsive

June 25, 2014

Date

Senior Industrial Hygienist

Non-Responsive

July 7, 2014

Date

Technical Assistance: For technical assistance regarding information found in this report or the performed survey; please contact NES at 916-353-2360 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

- 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).

**PHOTO LOG
IFR (CONVERTED) BEAVER
BEAVER, UT
APRIL 29, 2014**



Photo 1: Beaver Readiness Center facility, view to the south.

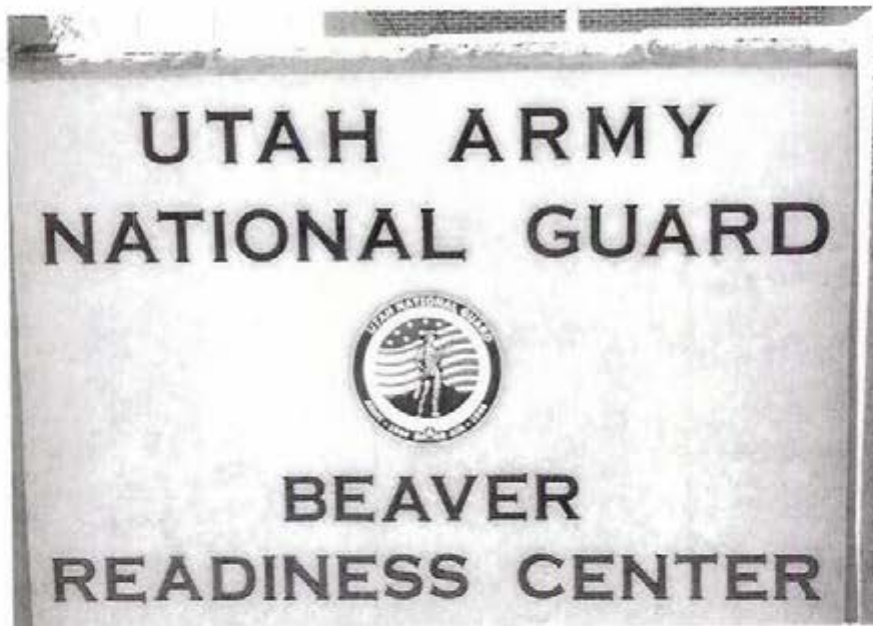


Photo 2: Beaver Readiness Center facility signage.

**PHOTO LOG
IFR (CONVERTED) BEAVER
BEAVER, UT
APRIL 29, 2014**



Photo 3: Hallway to the south of the drill floor where the rifle range once was.



Photo 4: The north side of the converted IFR open into the drill floor; same as the historical layout.

**PHOTO LOG
IFR (CONVERTED) BEAVER
BEAVER, UT
APRIL 29, 2014**



Photo 5: The south side of the converted IFR is a newly built kitchen and classrooms.



Photo 6: The west end of the converted IFR, now the entrance to the maintenance bay area.

**PHOTO LOG
IFR (CONVERTED) BEAVER
BEAVER, UT
APRIL 29, 2014**



Photo 7: View to the east end of the converted IFR.

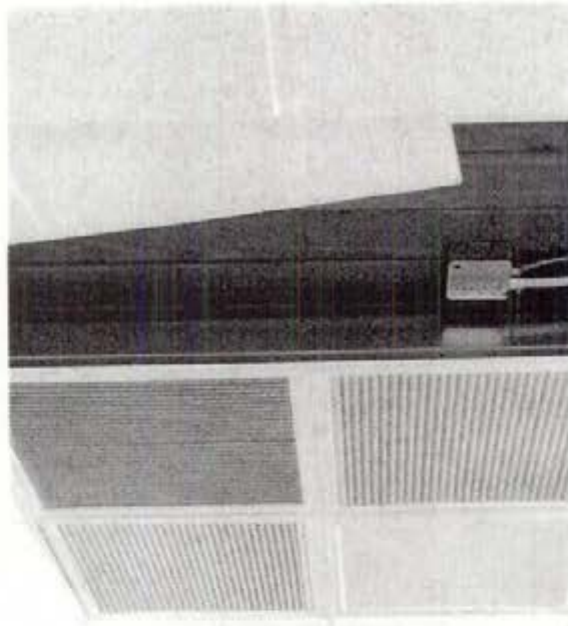


Photo 8: Newly installed ceiling vent in the hallway drop-in ceiling.

**PHOTO LOG
IFR (CONVERTED) BEAVER
BEAVER, UT
APRIL 29, 2014**



Photo 9: Lead wipe sample (042914-IFRB-W-01) collected from the hallway floor; east end.



Photo 10: Lead wipe sample (042914-IFRB-W-02) collected from the hallway floor; center.

**PHOTO LOG
IFR (CONVERTED) BEAVER
BEAVER, UT
APRIL 29, 2014**



Photo 11: Lead wipe sample (042914-IFRB-W-03) collected from the hallway floor; west end.

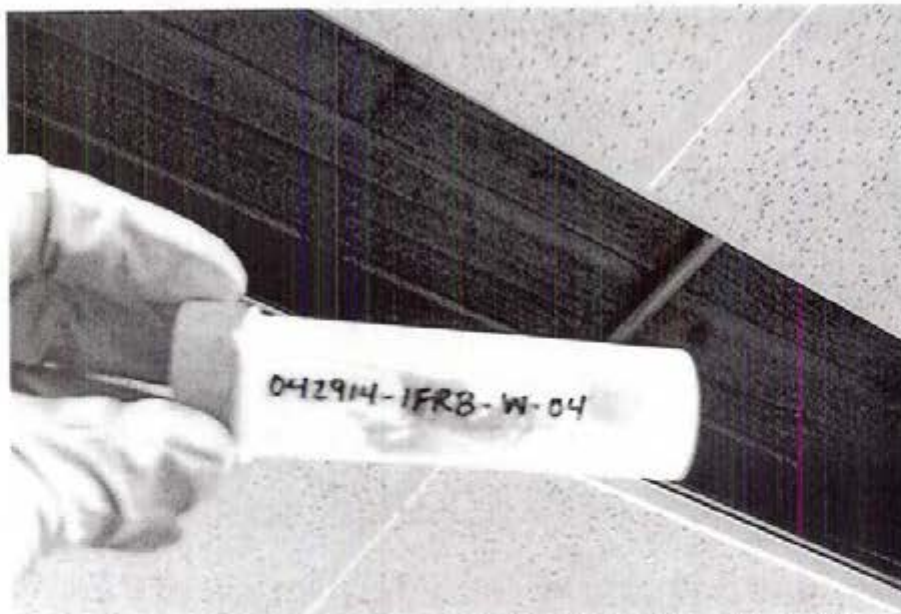


Photo 12: Lead wipe sample (042914-IFRB-W-04) collected from old wood paneling above the drop ceiling; east end of hallway.

**PHOTO LOG
IFR (CONVERTED) BEAVER
BEAVER, UT
APRIL 29, 2014**

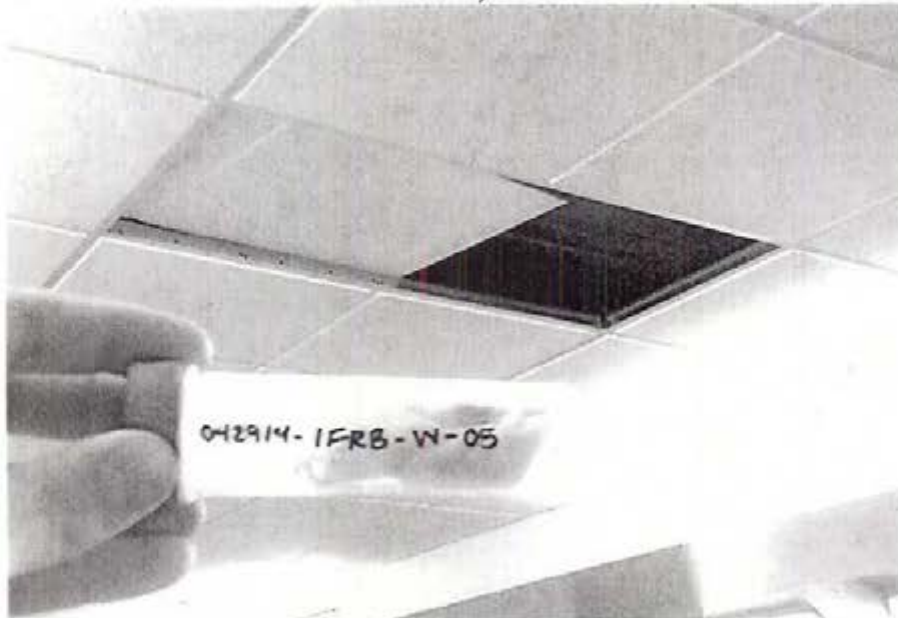


Photo 13: Lead wipe sample (042914-IFRB-W-05) collected from old wood paneling above the drop ceiling; near hallway to classroom.

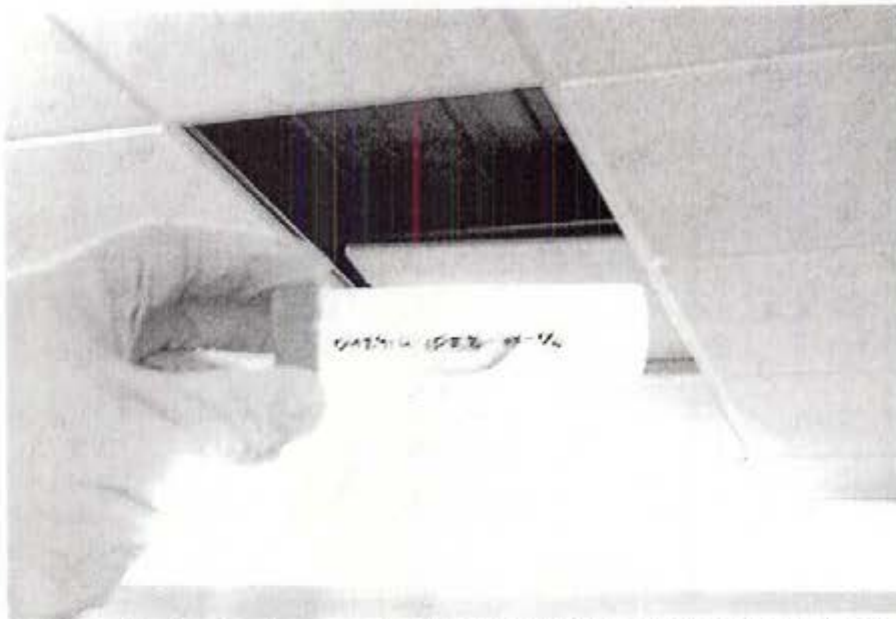


Photo 14: Lead wipe sample (042914-IFRB-W-06) collected from old wood paneling above the drop ceiling; further west of hallway.

**PHOTO LOG
IFR (CONVERTED) BEAVER
BEAVER, UT
APRIL 29, 2014**

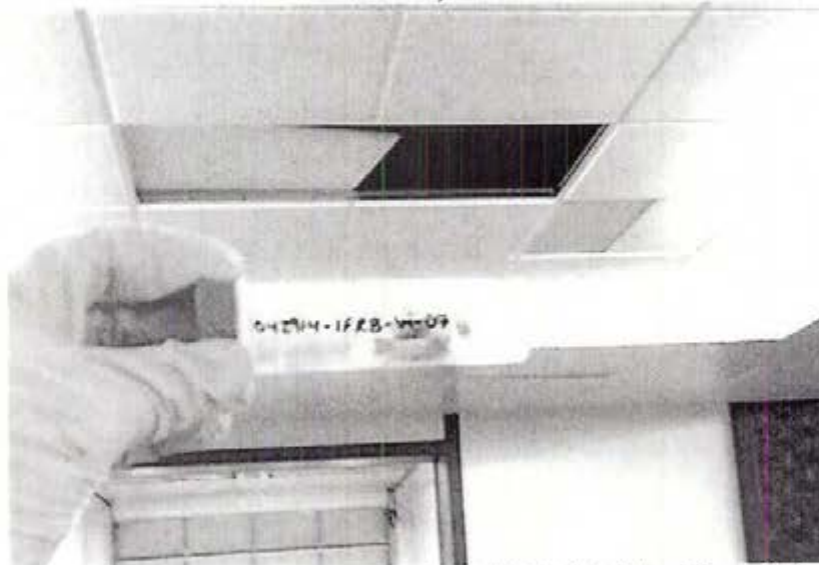


Photo 15: Lead wipe sample (042914-IFRB-W-07) collected from old wood paneling above the drop ceiling; west end of hallway.



Photo 16: Lead wipe sample (042914-IFRB-W-08) collected from a vertical wood column; west end of hallway.

PHOTO LOG
IFR (CONVERTED) BEAVER
BEAVER, UT
APRIL 29, 2014

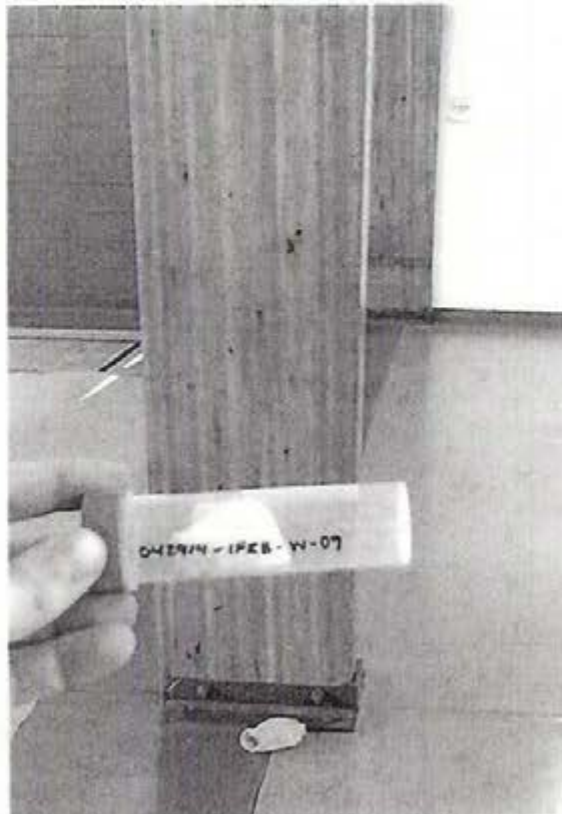


Photo 17: Lead wipe sample (042914-IFRB-W-09) collected from a vertical wood column; east end of hallway.

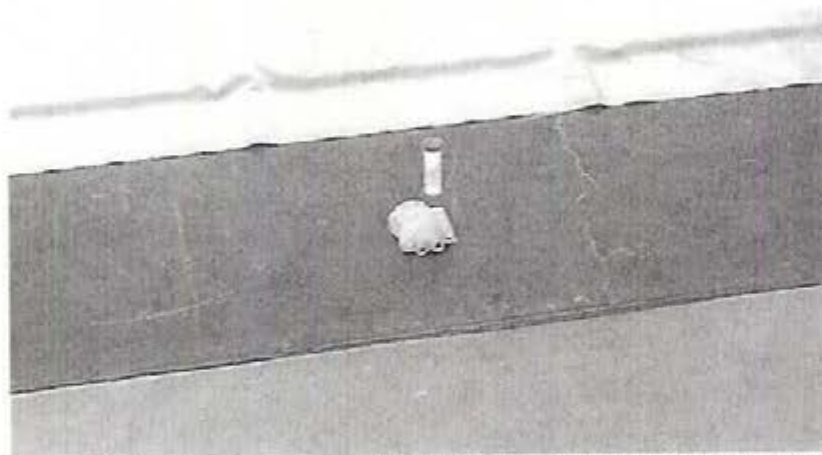


Photo 18: Lead wipe sample (042914-IFRB-W-10) collected from the cement border to the drill floor; east end of the hallway.

PHOTO LOG
IFR (CONVERTED) BEAVER
BEAVER, UT
APRIL 29, 2014

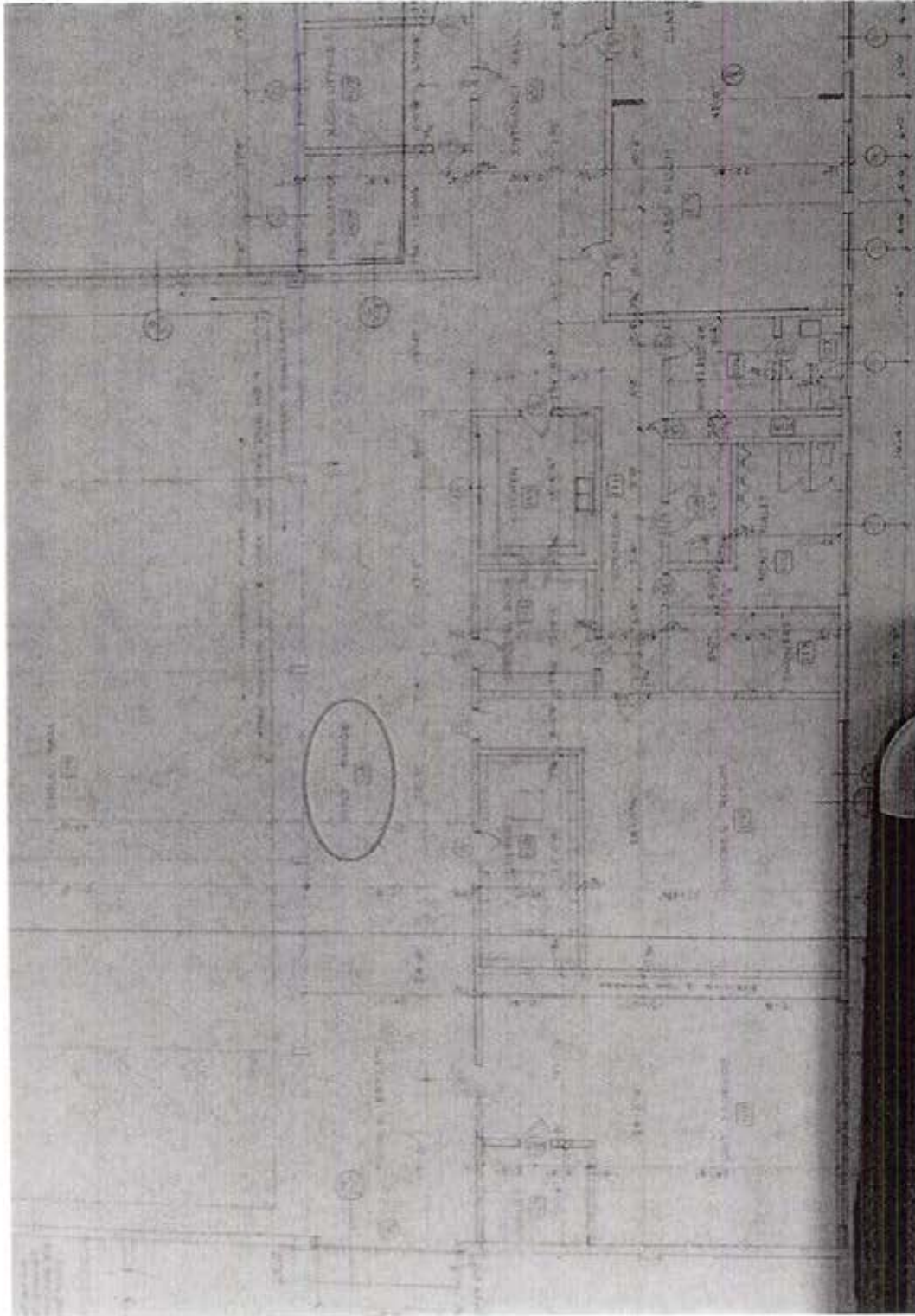
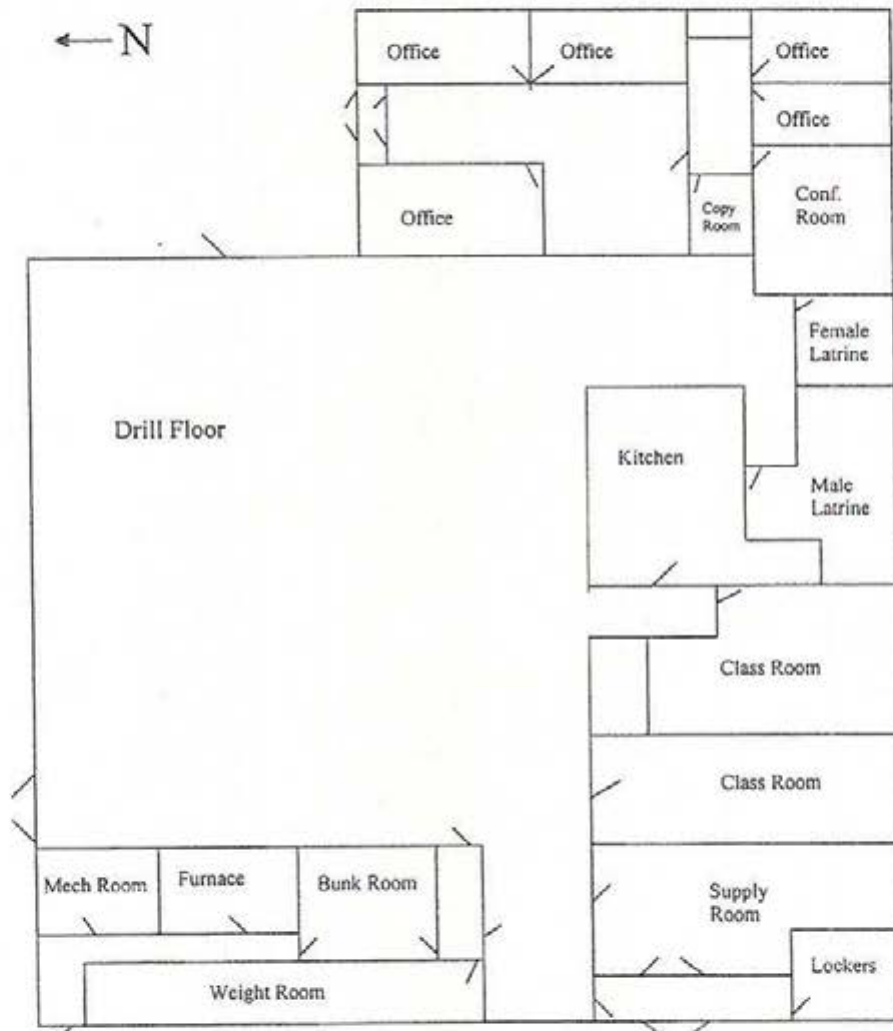


Photo 19: Building Blueprint from 1962 renovation showing the hallway between the Drill Hall and Kitchen/Other areas being listed as a "Rifle Range"

Beaver Readiness Center
Beaver, Utah



IAQ MEASUREMENTS
BEAVER READINESS CENTER (CLOSED IFR)
BEAVER, UT
APRIL 29, 2014

Location	CO ₂ max permissible level 1,035 ppm	Temperature permissible range 68 - 75°F	RH% permissible range 30-60%	CO Max permissible 200 ppm STEL
Hallway #1	462	70.1	18.8	1
Hallway #2	468	70.1	18.8	1
Drill Floor	471	70.3	18.9	1
Classroom	450	70.0	20.1	1
Outdoor Control	375	47.5	17.4	2

BOI.D = Outside of permissible range

CO₂ = Carbon Dioxide

CO = Carbon Monoxide

°F = Fahrenheit

RH = Relative Humidity

ILLUMINATION SURVEY
BEAVER READINESS CENTER (CLOSED IFR)
BEAVER, UT
APRIL 29, 2014

Room	Location	Light Measurement (FC)	Minimum Lighting Requirement (FC)
Hallway #1	Tabletop	53.4	≥ 10
Hallway #2	Center of room	56.1	≥ 10
Drill Floor	Center of room	67.0	≥ 10
Classroom	Center of room	52.1	≥ 50

*FC = foot candle measurement

Bold = Insufficient Lighting



Facility Information Form

Revised: December 4, 2013



General Facility Information

Date(s) of Previous IHSAs: unknownIH(s): **Non-Responsive**Date(s) of IHSAs: 4/29/14Facility Name: BEAVER READERS CENTER (Armory / IFR(c))Address: 120 S. MAIN ST BEAVER, UT 84713Facility Commander: **Non-Responsive**

Safety Officer: _____

Name / Phone Number / email

IFR/HallwayNo Person(s): 2 Admin: 2 Maint: _____ Work Sched: 6am - 430pm Size of Facility: ~1000 ft²

(Include status - AGR, Fed, Tech., IDR, State or Contract Employee)

M-ThFacility ~ 5000Unit(s): BATTERY 'C' 2/222 FA **Non-Responsive** Co-Tenant(s): NONE

Include UIC if available

List All

Primary work activities at Facility: _____

ADMINISTRATION

Written Health & Safety Programs / SOPs

Program	Program Needed	Have Program	Date of Last Training	# Enrolled	Comments
Confined Space					
Emergency Preparedness					
Hazard Communication					
Hearing Conservation					
PPE					
Respiratory Protection					
Others (Bloodborne Pathogens, Lock Out / Tag Out, Lifting Devices, Radiation, SOPs, etc.) - List on back					

Y = Yes N = No NA = Not Applicable to this site

Documents / Records to Obtain



Facility floor plan / evacuation map



List of equipment serviced / maintained



Previous IH reports

NA = Not Applicable to this site



Hazardous Materials inventory



Personnel list



Others (List):

Non - DoD Contractors

Service	Provider	Service	Provider
Oil / Water Separator	<u>N/A</u>	Laundry	<u>N/A</u>
Tools	<u>N/A</u>	Pest Control	<u>N/A</u>
Rags	<u>N/A</u>	Hazardous Waste	<u>N/A</u>
Refuse	<u>MOSDELL SANITATION</u>	Crane Maintenance	<u>N/A</u>
Others:	<u>N/A</u>		

4/29/14

(JP)

Asbestos

Items that can potentially contain Asbestos:

2X4 ceiling tiles

Base coat mastic

or Drywall joint compound & tape

Lead

No visible peeling paint in the former IFR area

Mold

No active intrusion, or visible water staining on ceiling tiles or walls

HVAC

Ducted supply & return air in the IFR (Hallway)

Separate supply & return system over the drill floor.

Not able to visibly inspect system, only supply/return vents.

Ducting above drop in ceiling goes directly into wood panel ceiling.

IFR Bauer Utah Historical Notes 4/29/14

Year Originally Built Not known possibly 30's

1962 - Addition to existing Building

No known of any other remodel until 2011

2011 - Remodel - All new walls, paint and flooring (carpet & epoxy)
south of the drill floor

New paint ~~on walls~~ on walls around drill floor

Refinish the drill floor? - ~~2011~~ 2011

New ventilation? Some new A/C couldn't specify what
was old and what was new

Does the community use the building? - Yes must complete
an application

Jr Jazz

Charity Dinner

Same architect built a building in ^{Gunnison} ~~Gunnison~~

30 years ago 22 range called his dog

-- ~~Barney~~ Barney Remembers - was in the National Guard
in the area for ~30 years

Agg. Angles

Shot 22 caliber, into 3 inch ^{angled} metal plate

Sand at the base of the plate to catch the
bullets

IFR(c) - Beaver

013.1H1716.11

Photo Log

4/29/14

* Non-Responsive has photos of old floor plan

1. Beaver Armory facility exterior, view to south
2. Facility signage
3. Location of previously designated rifle range, view to west
4. North side of old range opens into drill floor, same as ^{historical} layout
5. South side of old range is newly built kitchen and classrooms
6. Entrance to bay area at west end of old range
7. view to east end of old range
8. lead wipe sample 042914-IFRB-W-01 hallway floor east end
9. " "-02 hallway floor center
10. " "-03 hallway floor west end
11. " "-04 above drop ceiling, old wood panel ceiling, east end of hallway
12. " "-05 above drop ceiling, old wood panel ceiling, near hallway to classroom
13. " "-06 " " " " further west
14. " "-07 " " " " west end of hallway
15. " "-08 vertical wood column, west end of hallway
16. " "-09 vertical wood column, east end of hallway
17. " "-10 cement floor border to drill floor, east end of hallway
18. Newly installed ceiling vent in hallway



Sample Sampling Summary Form

Facility: IFR(c) - Beaver .11

Collected By: Non-Responsive

Date & Time: 4/29/14

Revised: September 18, 2013



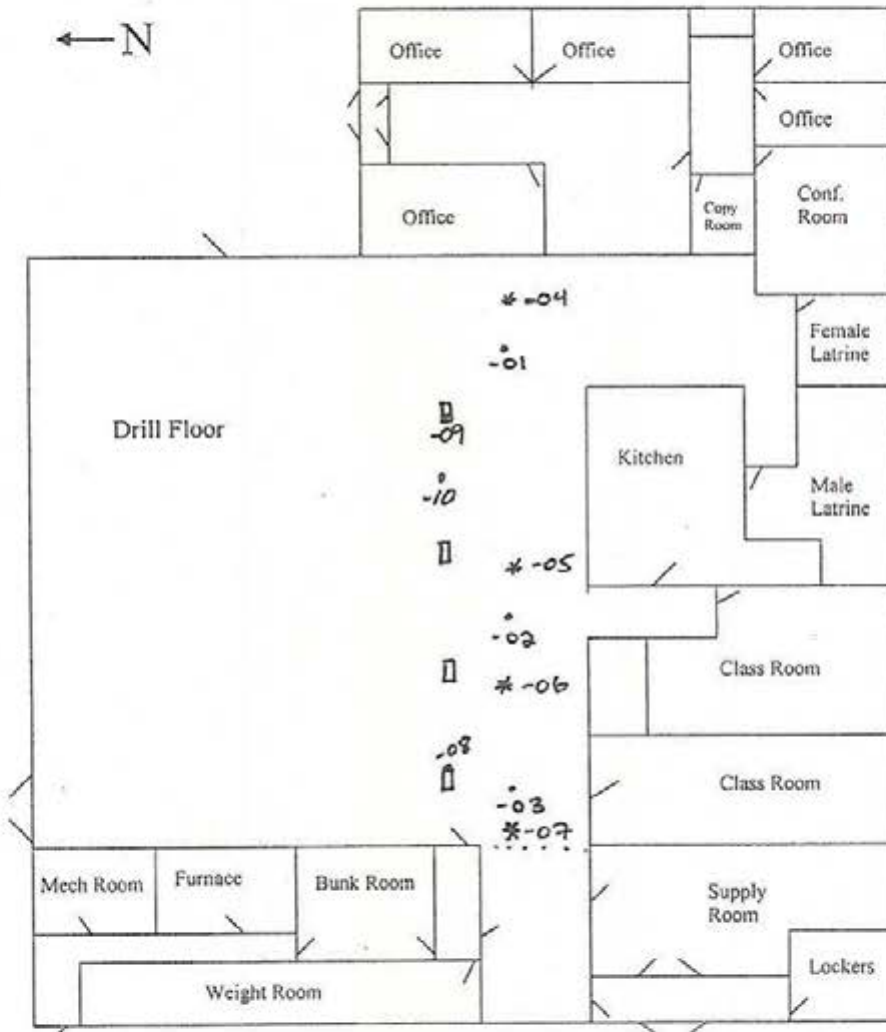
Sample Information		Sample Area	Area Units	Analyte(s)
1	Sample Number:	1	ft ²	Lead
	Sample Location:			
042914-IFRB-W-01				
Hallway floor, east end				
2	Sample Number:			
	Sample Location:			
-02				
Hallway floor, center				
3	Sample Number:			
	Sample Location:			
-03				
Hallway floor, west end				
4	Sample Number:			
	Sample Location:			
-04				
Above drop ceiling on old wood panel ceiling, east end				
5	Sample Number:			
	Sample Location:			
-05				
Above drop ceiling on old wood panel ceiling, east of classroom hallway				
6	Sample Number:			
	Sample Location:			
-06				
Above drop ceiling on old wood panel ceiling, west of classroom hallway				
7	Sample Number:			
	Sample Location:			
-07				
Above drop ceiling on old wood panel ceiling, west end				
8	Sample Number:			
	Sample Location:			
-08				
vertical wood column west end of hallway				
9	Sample Number:			
	Sample Location:			
-09				
Vertical wood column, east end of hallway				
10	Sample Number:			
	Sample Location:			
-10				
Cement floor border to drill floor, east end of hallway				
11	Sample Number:			
	Sample Location:			
12	Sample Number:			
	Sample Location:			
13	Sample Number:			
	Sample Location:			

Revised: September 18, 2013



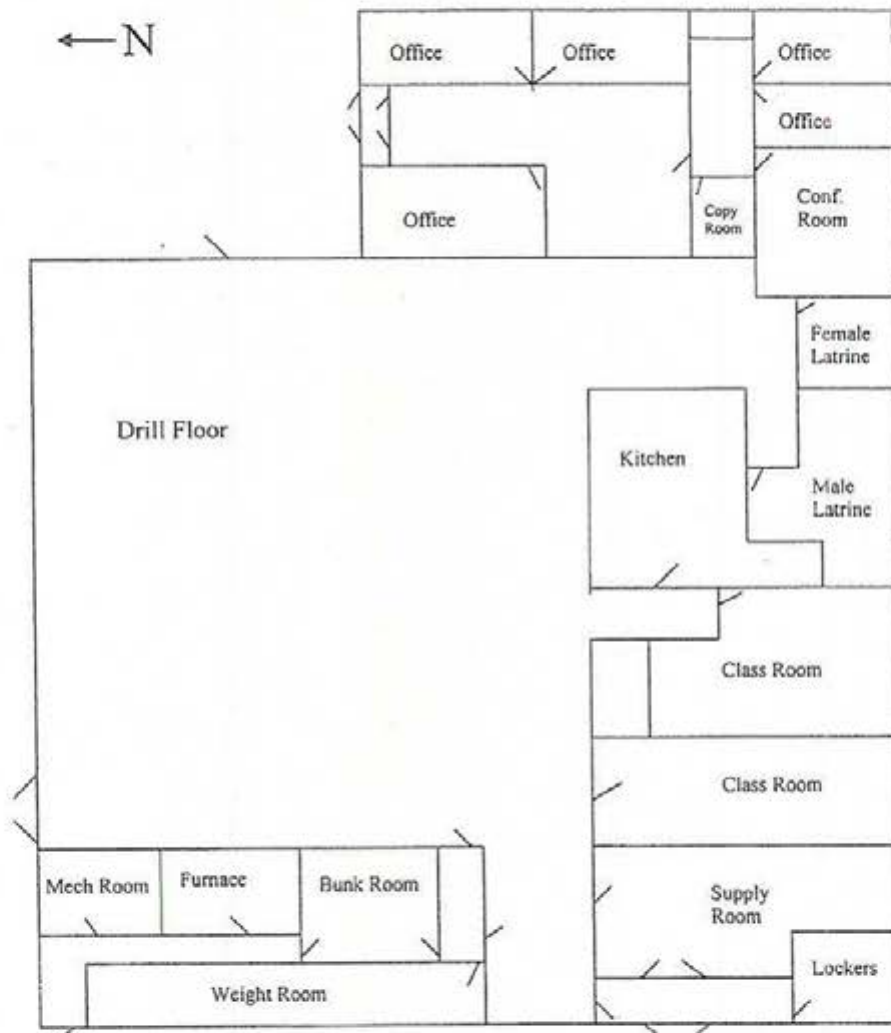
CO₂ = Carbon Dioxide
°F = Fahrenheit
RH = Relative Humidity
CO = Carbon Monoxide
STEL = Short Term Exposure Limit

Beaver Armory Facility
Lead Wipe Sample Locations
013.1H1716.11



* samples collected above
drop ceiling

Beaver Readiness Center
Beaver, Utah





Equipment List – RED CASE

Facility: Beaver, Closed IFR:

Date: April, 29, 2014

Revised: September 18, 2013



Type	Model Number	Serial Number	Calibration Date
TSI QTrak IAQ Meter	8551	51380	October 2013
TSI VelociCalc Plus	8360	97100136	July 2013
Konica Minolta Light Meter	TL-1	00279019	May 2013
Quest Sound Level Meter	210 SLM	DCP010012	July 2013
Quest Acoustic Calibrator	QC-10	QI9010057	June 2013
Gil Air-3/Basic Pump	N/A	13324714381	N/A

Tektronix

Certificate of Calibration



7323005

Certificate Page 1 of 2

Instrument Identification

Company ID: 607229

PO Number: CC-

Non-Responsive

INDUSTRIAL HYGIENE SW

Non-Responsive

10510 SUPERFORTRESS AVE
SUITE C
MATHER, CA 95655

Instrument ID: 00279019

Model Number: TL-1

Manufacturer: KONICA MINOLTA

Serial Number: 00279019

Description: ILLUMINANCE METER

Certificate Information

Reason For Service: CALIBRATION

Type of Cal: NORMAL

As Found Condition: IN TOLERANCE

As Left Condition: LEFT AS FOUND

Procedure: 33K4-4-564-1 ILLUMINANCE LIGHT METER

Remarks:

Technician:

Non-Responsive

Cal Date: 02May2013

Cal Due Date: 02May2014

Interval: 12 MONTHS

Temperature: 23.0 C

Humidity: 47.0 %

Tektronix certifies the performance of the above instrument has been verified using test equipment of known accuracy, which is traceable to National Metrology Institutes (NIST, NPL, PTB) that are linked to the International System of Units (SI). The policies and procedures used comply with ANSI/NCSL Z540.1-1994 (R2002).

This certificate shall not be reproduced, except in full, without the written permission of Tektronix.

Approved By

Service Representative

Non-Responsive

Calibration Standards

NIST Traceable#	Inst. ID#	Description	Manufacturer	Model	Cal Date	Date Due
1700294966	17-1001076	6 STEEL RULE	STARETT	C416R-72	22Mar2013	22Mar2015
700282693	17-1001081	LUMINANCE STD	OPTRONIC LABS	OL 455-4	31Jul2012	31Jul2013
1700293531	17-2007750	1000W LIGHT BULB	GOOCH HOUSEGO	OL FEL-P-K	30Jan2013	30Jan2017
1700265565	4083RC	MULTIMETER	FLUKE	8842A	06Aug2012	26Aug2017

6120 Hanging Moss Road • Orlando, FL 32807 • Phone: 800-438-8165 • Fax: 407-678-4854



MICRO PRECISION CALIBRATION
22835 INDUSTRIAL PLACE
GRASS VALLEY CA 95949
530-268-1860

Certificate of Calibration

Date: Oct 10, 2013

Cert No. 220081202166631

Customer:

NETWORK ENVIRONMENTAL
1141 SIBLEY STREET
FOLSOM CA 95630

Work Order #: SAC-70062158

MPC Control #: CD3921
Asset ID: 1245
Gage Type: IAQ METER W/PROBE
Manufacturer: TSI
Model Number: 8551
Size: N/A
Temp/RH: 68.8°F / 34.5 %

Serial Number: 51380
Department: N/A
Performed By: BARRY MORRIS
Received Condition: IN TOLERANCE
Returned Condition: IN TOLERANCE
Cal. Date: October 10, 2013
Cal. Interval: 12 MONTHS
Cal. Due Date: October 10, 2014

Calibration Notes:

Standards Used to Calibrate Equipment

I.D.	Description	Model	Serial	Manufacturer	Cal. Due Date	Traceability #
AV2338	GAS TEST KIT	58L-400	BAL-400-2	GASCO AFFILIATES LLC	Nov 1, 2013	914776
AV5000	ENVIRONMENTAL CHAMBER	BTX-475	0612421	ESPEC	Nov 26, 2013	2008120224653

Procedures Used in this Event

Procedure Name
MANUFACTURER

Description
MANUAL REV CONTROL

Calibrating Technician:

Non-Responsive

QC Approval:

Non-Responsive

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor $k=2$, which for normal distribution corresponds to a coverage probability of approximately 95%. The standard uncertainty of measurement has been determined in accordance with EA's Publication and NIST Technical Note 1297, 1994 Edition. Services rendered comply with ISO 17025:2005, ISO 9001:2008, ANSI/NCCL Z540-1, MPC Quality Manual, MPC CSD and with customer purchase order instructions.

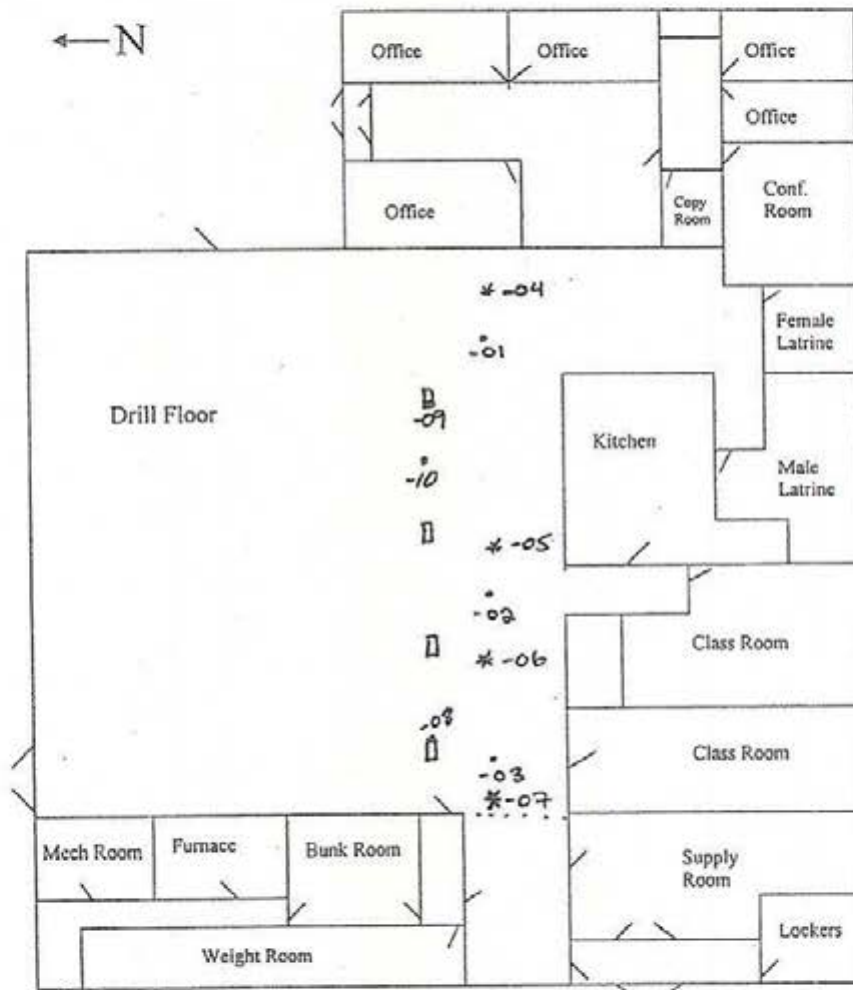
Calibration cycles and resulting due dates were submitted/approved by the customer. Any number of factors may cause an instrument to drift out of tolerance before the next scheduled calibration. Recalibration cycles should be based on frequency of use, environmental conditions and customer's established systematic accuracy. The information on this report, pertains only to the instrument identified.

All standards are traceable to SI through the National Institute of Standards and Technology (NIST) and/or recognized national or international standards laboratories. Services rendered include proper manufacturer's service instruction and are warranted for no less than thirty (30) days. This report may not be reproduced in part or in a whole without the prior written approval of the issuing MPC lab.

APPENDIX I

AIR SAMPLING & METAL/LEAD WIPE TABLES

Beaver Armory Facility
Lead Wipe Sample Locations
013, 1H1716.11



* samples collected above
drop ceiling



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ANALYTICAL REPORT

Report Date: May 12, 2014

Non-Responsive

Network Environmental Systems, Inc.
1141 Sibley Street
Folsom, CA 95630

Phone: (916) 353-2370 x 20

Fax: (916) 353-2375

Non-Responsive

Workorder: 34-1412669

Client Project ID: IFR(c)-Beaver UT

Purchase Order: 013 IH1716 11

Project Manager: Non-Responsive

Analytical Results

Sample ID: 042914-IFRB-W-Blank		Collected: 04/29/2014	
Lab ID: 1412669001	Sampling Location: IFR(c)-Beaver UT		Received: 05/06/2014
Method: NIOSH 7300 Mod.		Media: Ghost Wipe	Prepared: 05/09/2014
		Sampling Parameter: Area Not Applicable	Analyzed: 05/09/2014
Analyte	ug/sample	ug/ft ²	RL (ug/sample)
Lead	<1.3	NA	1.3

Sample ID: 042914-IFRB-W-01		Collected: 04/29/2014	
Lab ID: 1412669002	Sampling Location: IFR(c)-Beaver UT		Received: 05/06/2014
Method: NIOSH 7300 Mod.		Media: Ghost Wipe	Prepared: 05/09/2014
		Sampling Parameter: Area 1 ft ²	Analyzed: 05/09/2014
Analyte	ug/sample	ug/ft ²	RL (ug/sample)
Lead	<1.3	<1.3	1.3

Sample ID: 042914-IFRB-W-02		Collected: 04/29/2014	
Lab ID: 1412669003	Sampling Location: IFR(c)-Beaver UT		Received: 05/06/2014
Method: NIOSH 7300 Mod.		Media: Ghost Wipe	Prepared: 05/09/2014
		Sampling Parameter: Area 1 ft ²	Analyzed: 05/09/2014
Analyte	ug/sample	ug/ft ²	RL (ug/sample)
Lead	<1.3	<1.3	1.3

Sample ID: 042914-IFRB-W-03		Collected: 04/29/2014	
Lab ID: 1412669004	Sampling Location: IFR(c)-Beaver UT		Received: 05/06/2014
Method: NIOSH 7300 Mod.		Media: Ghost Wipe	Prepared: 05/09/2014
		Sampling Parameter: Area 1 ft ²	Analyzed: 05/09/2014
Analyte	ug/sample	ug/ft ²	RL (ug/sample)
Lead	4.4	4.4	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. An ALS Limited Company

Environmental

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



ANALYTICAL REPORT

Workorder: **34-1412669**
Client Project ID: IFR(c)-Beaver UT
Purchase Order: 013.IH1716.11
Project Manager: **Non-Responsive**

Analytical Results

Sample ID: 042914-IFRB-W-04		Collected: 04/29/2014	
Lab ID: 1412669005		Received: 05/06/2014	
Method: NIOSH 7300 Mod.		Media: Ghost Wipe	
		Sampling Parameter: Area 1 ft ²	
		Prepared: 05/09/2014	
		Analyzed: 05/09/2014	
Analyte	ug/sample	ug/ft ²	RL (ug/sample)
Lead	65	65	1.3

Sample ID: 042914-IFRB-W-05		Collected: 04/29/2014	
Lab ID: 1412669006		Received: 05/06/2014	
Method: NIOSH 7300 Mod.		Media: Ghost Wipe	
		Sampling Parameter: Area 1 ft ²	
		Prepared: 05/09/2014	
		Analyzed: 05/09/2014	
Analyte	ug/sample	ug/ft ²	RL (ug/sample)
Lead	75	75	1.3

Sample ID: 042914-IFRB-W-06		Collected: 04/29/2014	
Lab ID: 1412669007		Received: 05/06/2014	
Method: NIOSH 7300 Mod.		Media: Ghost Wipe	
		Sampling Parameter: Area 1 ft ²	
		Prepared: 05/09/2014	
		Analyzed: 05/09/2014	
Analyte	ug/sample	ug/ft ²	RL (ug/sample)
Lead	76	76	1.3

Sample ID: 042914-IFRB-W-07		Collected: 04/29/2014	
Lab ID: 1412669008		Received: 05/06/2014	
Method: NIOSH 7300 Mod.		Media: Ghost Wipe	
		Sampling Parameter: Area 1 ft ²	
		Prepared: 05/09/2014	
		Analyzed: 05/09/2014	
Analyte	ug/sample	ug/ft ²	RL (ug/sample)
Lead	53	53	1.3

Sample ID: 042914-IFRB-W-08		Collected: 04/29/2014	
Lab ID: 1412669009		Received: 05/06/2014	
Method: NIOSH 7300 Mod.		Media: Ghost Wipe	
		Sampling Parameter: Area 1 ft ²	
		Prepared: 05/09/2014	
		Analyzed: 05/09/2014	
Analyte	ug/sample	ug/ft ²	RL (ug/sample)
Lead	<1.3	<1.3	1.3

Sample ID: 042914-IFRB-W-09		Collected: 04/29/2014	
Lab ID: 1412669010		Received: 05/06/2014	
Method: NIOSH 7300 Mod.		Media: Ghost Wipe	
		Sampling Parameter: Area 1 ft ²	
		Prepared: 05/09/2014	
		Analyzed: 05/09/2014	
Analyte	ug/sample	ug/ft ²	RL (ug/sample)
Lead	<1.3	<1.3	1.3



ANALYTICAL REPORT

Workorder: **34-1412669**
Client Project ID: IFR(c)-Beaver UT
Purchase Order: 013.IH1716.11
Project Manager: **Non-Responsive**

Analytical Results

Sample ID: 042914-IFRB-W-10		Collected: 04/29/2014	
Lab ID: 1412669011		Received: 05/06/2014	
Sampling Location: IFR(c)-Beaver UT			
Method: NIOSH 7300 Mod.		Media: Ghost Wipe	
Sampling Parameter: Area 1 ft²		Prepared: 05/09/2014	
Analyzed: 05/09/2014			
Analyte	ug/sample	ug/ft²	RL (ug/sample)
Lead	<1.3	<1.3	1.3

Report Authorization

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

Laboratory Contact Information

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

Phone: (801) 266-7700
Email: als@lab@ALSGlobal.com
Web: www.alssc.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) Utah (NELAC) Nevada Oklahoma Iowa Florida (TNI) Texas (TNI)	ADE-1420 DATA1 UT00009 UT00009 IA# 376 E871067 T104704456-11-1	http://www.aclasscorp.com http://health.utah.gov/lab/labimp/ http://ndep.nv.gov/bsdwlabservice.htm http://www.deq.state.ok.us/CSDnew/ http://www.iowadnr.gov/InsideDNR/RegulatoryWater.aspx http://www.dep.state.fl.us/labs/bars/sas/qa/ 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 Soil, Dust, Paint, Air	AClass (ISO 17025, CPSC) AIHA (ISO 17025, AIHA ELLAP and NLLAP)	ADE-1420 101574	http://www.aclasscorp.com http://www.aihaaccreditedlabs.org
Dietary Supplements	AClass (ISO 17025)	ADE-1420	http://www.aclasscorp.com



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ANALYTICAL REPORT

Workorder: 34-1412669

Client Project ID: IFR(c)-Beaver UT

Purchase Order: 013.IH1716.11

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.



1412669



ANALYTICAL REQUEST FORM

1. ☒ REGULAR Status
☐ RUSH Status Requested - ADDITIONAL CHARGE
 RESULTS REQUIRED BY _____ DATE _____

CONTACT ALS SALT LAKE PRIOR TO SENDING SAMPLES

2. Date 4/29/14 Purchase Order No. 013.111716.113. Company Name NESAddress 1141 Sibley St.Folsom, CA 95630

Person to Contact

Telephone 916

Fax Telephone

E-mail Address

Billing Address (if different from above)

4. Quote No. _____

ALS Project Manager

Non-Responsive

5. Sample Collection

Sampling Site IFRC - Beaver, UT

Industrial Process

Date of Collection 4/29/14

Time Collected

Date of Shipment 5/2/14

Chain of Custody No. _____

6. How did you first learn about ALS?

7. REQUEST FOR ANALYSES

Laboratory Use Only	Client Sample Number	Matrix*	Sample Volume	ANALYSES REQUESTED - Use method number if known	Units**
	042914-1KRB-W-Blank	Wipe	-	NIOSH 7300 - Lead	ug/ft ²
	-01		1 ft ²		
	-02				
	-03				
	-04				
	-05				
	-06				
	-07				
	-08				
	-09				
	-10				

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

** 1. ug/sample 2. mg/m³ 3. ppm 4. % 5. ug/m³ 6. ug/ft² (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 5/2/14

Received by

Date/Time 05/06/14 0850

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



Industrial Hygiene Southwest

Violation Inventory Log

LOG OF SCHEDULE OF CORRECTIVE ACTION - COMPLIANCE WITH SAFETY AND HEALTH STANDARDS
IFR (Converted) - Beaver, UT

CONTROL NUMBER	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/NCOIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
UTDRIFR- 04242014-4.3	Lead concentrations exceed established criteria	Converted IFR	3	See 3 Recommended Corrective Actions Below					29 CFR 1910.1025 (h)(1)
UTDRIFR- 04242014-5.3	Asbestos Building Materials: inspection, re-inspection and Asbestos Hazard Management Plan.	Facility	3	1) Conduct a facility survey to identify & assess extent of asbestos hazards 2) Develop & implement an Asbestos Hazard Management Plan					AR 420-1, 5-24b, c, & d

RECOMMENDED CORRECTIVE ACTIONS FOR UTDRIFR-04242014-4.3

- 1) Conduct a lead assessment of the CIFR space to assess the extent of lead contamination present above the drop-in ceiling.
- 2) Avoid any maintenance, repair, remodel, cleaning, and any other activities that may disturb existing lead contamination on surfaces above the drop-in ceiling tiles.
- 3) Clean/remediate contaminated surfaces in a manner that prevents spreading of lead dust/contamination.

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APPENDIX-N: CONCLUSIONS AND RECOMMENDATIONS

N.1 Introduction – This section provides conclusions and recommendations for the findings and observations described in the previous sections of the IHSAV report for the Converted IFR, in Beaver, UT. The paragraphs are numbered to correspond to the sections where first noted. (i.e., N.4.1 describes the following: the N is Conclusions & Recommendations and the 4.1 corresponds back to Section 4 – Sampling Results; Item 1 – Indoor Air Quality).

N4.3 Metal Wipe Sampling – Recommendations to address the identified lead contamination include:

1. Conduct a lead assessment of the CIFR space to assess the extent of lead contamination present above the drip-in ceiling.
2. Avoid any maintenance, repair, remodel, cleaning, and any other activities that may disturb existing lead contamination on surfaces above the drop-in ceiling tiles.
3. Clean/remediate contaminated surfaces in a manner that prevents spreading of lead dust/contamination.

N5.3 Asbestos Facility Survey – Develop and implement an Asbestos Hazard Management Plan.

FY 14 Installation Status Report (ISR) Services Documentation		Intellicode	Q1	Q2	Q3	Q4 Annual
Breathing Zone samples collected above Occupational Exposure Limit (OEL), with no controls		953-01-04			0	
Breathing Zone samples collected above Occupational Exposure Limit (OEL)		953-01-04			0	
Number of Personal Noise Dosimetry samples collected >= 85 dBA with no controls		953-01-05			0	
Number of Personal Noise Dosimetry samples collected >= 85 dBA		953-01-05			0	
Number of Noise Sound Level samples collected >= 140 dBP with no controls		953-01-06			0	
Number of Noise Sound Level samples collected >= 140 dBP		953-01-06			0	
Number of Noise Sound Level samples collected >= 140 dBP not controlled, that are recommended for control		953-01-07			0	
Number of Noise Sound Level samples collected >= 140 dBP not controlled		953-01-07			0	
Number of Breathing Zone samples collected above Occupational Exposure Limit (OEL) not controlled, that are recommended for control		953-01-08			0	
Number of Breathing Zone samples collected above Occupational Exposure Limit (OEL) not controlled		953-01-08			0	
Number of Personal Noise Dosimetry samples collected >= 85 dBA not controlled, that are recommended for control		953-01-09			0	
Number of Personal Noise Dosimetry samples collected >= 85 dBA not controlled		953-01-09			0	
Total number of DOEHRs-IH shops coded as Priority 1 which have at least one task performed in the past 12 months		953-02-10	IHT	IHT	IHT	IHT
Total number of DOEHRs-IH shops coded as Priority 1		953-02-10	IHT	IHT	IHT	IHT
Number of buildings for which all processes requiring a basic industrial hygiene characterization have received one within the last 12 months		953-02-11	IHT	IHT	IHT	IHT
Number of buildings requiring a basic industrial hygiene characterization within the last 12 months		953-02-11	IHT	IHT	IHT	IHT
Number of buildings for which all processes requiring a basic industrial hygiene characterization have received one within the last 12 months		953-02-12	IHT	IHT	IHT	IHT
Number of buildings requiring an industrial hygiene exposure assessment within the last 12 months		953-02-12	IHT	IHT	IHT	IHT
Number of processes that were assessed for potential inhalation exposure to employees during this IH Visit		953-02-13	IHT	IHT	IHT	IHT
Number of processes that require an assessment for potential inhalation exposure to employees during this IH Visit		953-02-13	IHT	IHT	IHT	IHT

FY 14 Installation Status Report (ISR) Services Documentation		Intellicode	Q1	Q2	Q3	Q4 Annual
Number of processes that were assessed for potential inhalation exposure to employees within the last 12 months.		953-02-14	IHT	IHT	IHT	IHT
Number of processes that require an assessment for potential inhalation exposure to employees within the last 12 months.		953-02-14	IHT	IHT	IHT	IHT
Number of personnel who were reassessed by industrial hygiene within the last 12 months.		953-02-15	IHT	IHT	IHT	IHT
Number of personnel who required reassessment by industrial hygiene within the last 12 months.		953-02-15	IHT	IHT	IHT	IHT
Number of processes which have been measured for potential hazardous noise levels with a sound level meter within the last 12 months.		953-02-16	IHT	IHT	IHT	IHT
Number of processes which require measurement for potential hazardous noise levels using a sound level meter within the last 12 months.		953-02-16	IHT	IHT	IHT	IHT
Number of personnel for which noise dosimetry was collected during their complete work shift to quantify their daily noise exposures within the last 12 months.		953-02-17	IHT	IHT	IHT	IHT
Number of personnel who require work shift dosimetry to quantify their daily noise exposures within the last 12 months.		953-02-17	IHT	IHT	IHT	IHT
Number of ventilation systems (e.g., spray paint booths, tailpipe exhausts, etc.) which were inspected and measured for airflow rates		953-02-18			0	
Number of ventilation systems (e.g., spray paint booths, tailpipe exhausts, etc.) which require inspection and measurement of airflow rates		953-02-18			0	
Number of ventilation systems which require corrective action based on deficiencies identified during an IH survey		953-02-19			0	
Number of ventilation systems which were evaluated by an IH		953-02-19			0	
Number of design review packages evaluated and addressed by an IH with recommendations applicable to occupational health concerns		953-02-20	IHT	IHT	IHT	IHT
Number of design review packages which required IH evaluation and recommendations applicable to occupational health concerns		953-02-20	IHT	IHT	IHT	IHT



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Facility Information Form
Revised: September 26, 2013



General Facility Information

Date(s) of Previous IHSAs: _____

None- No Records

IH(s): **Non-Responsive**

Date(s) of IHSAs: _____

4/49/2014

Facility Name: Beaver Readiness Center (Armory/IFR(closed))

Address: 120 S. Main Street, Beaver, Utah 84713

Facility Commander: **Non-Responsive**

Name / Phone Number / email

Safety Officer: _____

Name / Phone Number / email

No Person(s): 2 Admin: 2 Maint: _____ Work Sched: M-Th 600-1630 Size of Facility: 1000 ft²
Unit(s): Battery "C" 2/222 FA **Non-Responsive** Co-Tenant(s): None
Include UIC if available List All

Primary work activities at Facility:

Administrative

Written Health & Safety Programs / SOPs

Program	Program Needed	Have Program	Date of Last Training	# Enrolled	Comments
Confined Space	N/A				
Emergency Preparedness	N/A				
Hazard Communication	N/A				
Hearing Conservation	N/A				
PPE	N/A				
Respiratory Protection	N/A				
Bloodborne Pathogens	N/A				
Others (Bloodborne Pathogens, Lock Out / Tag Out, Lifting Devices, Radiation, SOPs, etc.) – List on back					

Y = Yes N = No NA = Not Applicable to this site

Documents / Records to Obtain

☒ Facility floor plan / evacuation map
☐ List of equipment serviced / maintained
☐ Previous IH reports

NA = Not Applicable to this site

☐ Hazardous Materials inventory
☐ Personnel list
☐ Others (List): _____

Non – DoD Contractors

Service	Provider	Service	Provider
Oil / Water Separator	NA	Laundry	NA
Tools	NA	Pest Control	NA
Rags	NA	Hazardous Waste	NA
Refuse	Mosdell Sanitation	Crane Maintenance	NA
Others:			



**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

Blanding Armory
10 W. Freedom Way
Blanding, UT 84511

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

6 February 2013

MEMORANDUM THRU Utah Army National Guard, ATTN: [REDACTED]
Minuteman Drive, Draper, UT 84020-1776

Non-Responsive

(OHN), 12953 S.

FOR Commander Blanding Armory, 10 W. Freedom Way, Blanding, UT 84511

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for Blanding Armory, 10 W. Freedom Way, Blanding, UT 84511

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 Blanding Armory 10 W. Freedom Way, Blanding, UT on 06 SEP 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.

ARNG-CSG-IHSW

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for Blanding Armory, 10 W. Freedom Way, Blanding, UT 84511

- a. Repair the roof leaks to prevent the introduction of water and potential fungal growth. Replace water damaged materials once leaks are repaired. (para. 4.3) (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)

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.

ARNG-CSG-IHSW

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for Blanding Armory, 10 W. Freedom Way, Blanding, UT 84511

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 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

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For
NGB, IHSW, CIV
Industrial Hygiene



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

ARNG-CSG-IHSW

6 February 2013

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

Non-Responsive

(OHN), 12953 S.

FOR Commander Blanding Armory, 10 W. Freedom Way, Blanding, UT 84511

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for Blanding Armory,
10 W. Freedom Way, Blanding, UT 84511

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 Blanding Armory 10 W. Freedom Way, Blanding, UT on 06 SEP 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.

ARNG-CSG-IHSW

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for Blanding Armory, 10 W. Freedom Way, Blanding, UT 84511

- a. Repair the roof leaks to prevent the introduction of water and potential fungal growth. Replace water damaged materials once leaks are repaired. (para. 4.3) (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)

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

Blanding Armory, UT

CONTROL NUMBER	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/NCOIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
UTBA-090612-4.3 <input type="checkbox"/>	Moisture stained ceiling tiles were observed in the hallways located in the office areas.	Blanding Armory	3	Repair the roof leaks to prevent the introduction of water and potential fungal growth into this armory. Replace water damaged materials once leaks are repaired.					Recommended Practice
UTBA-090612-4.4 <input type="checkbox"/>	An asbestos survey could not be located during this IH Assistance Visit.	Blanding 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)
UTBA-090612-4.4 <input type="checkbox"/>	Personnel have not been provided with asbestos awareness training.	Blanding 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

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

**Utah Army National Guard
Blanding Armory
10 West Freedom Way
Blanding, Utah 84511**

December 5, 2012

Prepared for:

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

Prepared by:

Non-Responsive

Industrial Hygiene Technician

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EXECUTIVE SUMMARY

On September 6, 2012, [Non-Responsive] of IHI Environmental (IHI) conducted an IH Assistance Visit at the Blanding Armory in Blanding, Utah. The primary point of contact for information gathered during this survey was [Non-Responsive] (435) 678-2008. [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 September 6, 2012, [Non-Responsive] of IHI Environmental (IHI) conducted an IH Assistance Visit at the Blanding Armory located at 10 West Freedom Way, Blanding, Utah 84511. The primary point of contact for information gathered during this survey was [Non-Responsive] [Non-Responsive] (435) 678-2008, [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 Blanding armory has three full-time guard members. The armory has offices used for administrative purposes, a training area, drill floor, storage rooms, weight room, restrooms and locker rooms, kitchen, gun vault and supply room, flammable room, and a mechanical room. There is one state civilian employee at this armory. This armory is used by civilians occasionally for Jeep Jamborees and community breakfasts.

Army National Guard members clean weapons twice a year at this armory.

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 (IHSW) 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 $\mu\text{g}/\text{ft}^2$ 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.

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

The safety training programs and documentation were reviewed 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 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.

Recommendation

None

4.2 Painted Surface Evaluation

Peeling paint was not observed in this armory.

Recommendation

None

4.3 Moisture Intrusion and Limited Visual Fungal Growth Evaluation

Water-stained ceiling tiles were observed in the hallways by the office areas. Personnel noted that the roof has been patched several times, but the patching has been unsuccessful. Fungal growth was not observed in this armory.

Recommendation

1. Repair the roof leaks to prevent the introduction of water and potential fungal growth into this armory.

4.4 Asbestos Management

An asbestos survey could not be located during this visit; however, personnel believe the Division of Facilities, Construction, and Management (DFCM) for the State of Utah may have one on file. 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 two large gas-fired heaters located on the drill hall ceiling, a gas-fired heater in the mechanical room, and a gas-fired heater in the supply room. The offices and remaining rooms in this armory are heated and cooled by three dual-purpose air-handler units located on the roof.

The average outdoor CO₂ concentration at the time of the survey was 330 parts per million (ppm). The highest CO₂ concentration measured inside the building was 460 ppm, which should not result in indoor air quality complaints.

Building air temperatures ranged from about 70 to 75°F and relative humidity was between 26 and 30 percent during the testing period. Air temperatures in the office areas were within the recommended comfort range of 68-75°F, and relative humidity was slightly below the

recommended comfort range of 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 room. Chemical inventories of all products used by the armory along with their associated MSDSs are maintained in two master binders located in the janitor's closet and in the flammable storage room. The chemical inventories and MSDS binder are arranged by type of chemical and then alphabetically. 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 flammable storage room 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 the flammable storage cabinet closed properly.

Recommendation

None

4.7 Safety Training and Record Keeping

The following safety training documentation is maintained in the Blanding Armory:

- Composite Risk Management
- Army Accident Awareness
- HazMat Awareness

The last Safety Council meeting was held before deployment on 25 January 2009. In addition, the UTARNG has numerous 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

For the single hood located in the kitchen, there is one exterior roof-mounted exhaust fan that serves the kitchen appliances. Duct velocity measurements were obtained and an average of about 1,950 fpm was measured. This exhaust hood exceeds the criterion outlined in the 2011 National Fire Protection Association Standard 96, Section 8.2.1.1.

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 Peak Alarm.
3. Fire extinguishers are strategically located throughout the armory. All extinguishers 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.

Recommendation

None

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

5 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, CECS-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

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
Blanding Armory, Front, Exterior



Photograph 2
Blanding Armory, Rear, Exterior



Photograph 3
Blanding Armory, Drill Hall



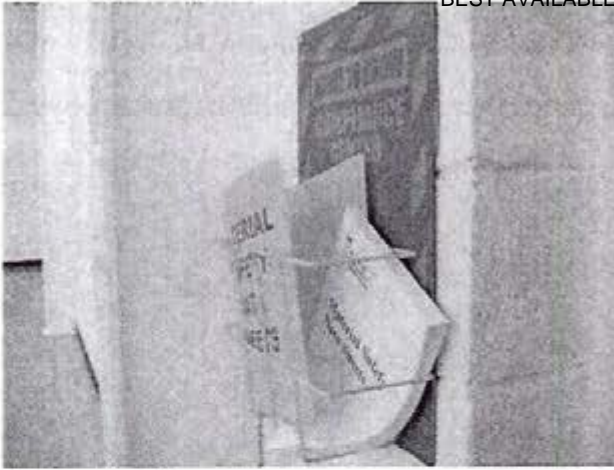
Photograph 4
Blanding Armory, Former IFR



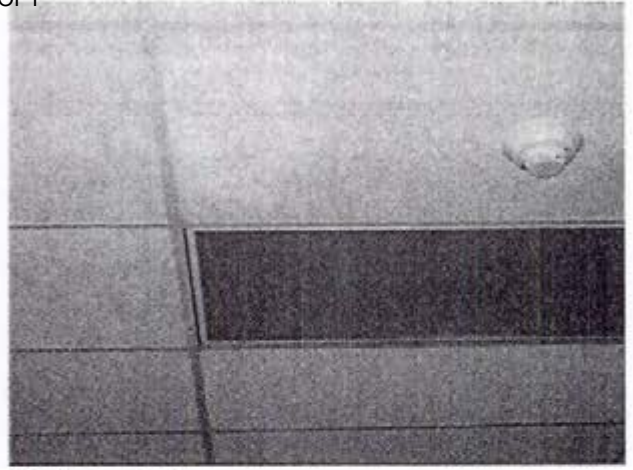
Photograph 5
Flammable Room



Photograph 6
Flammable Cabinet, Open



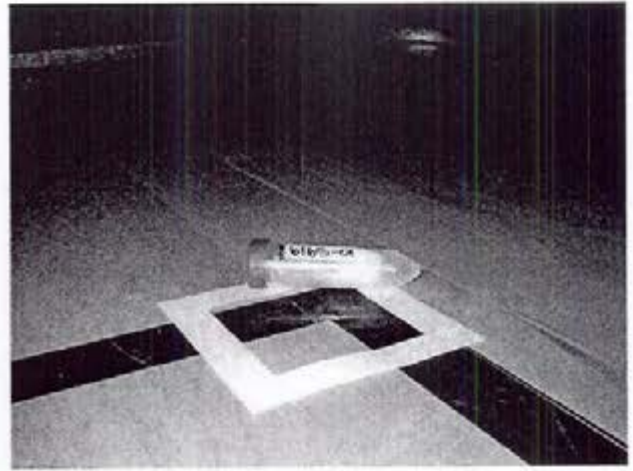
Photograph 7
MSDS Binder



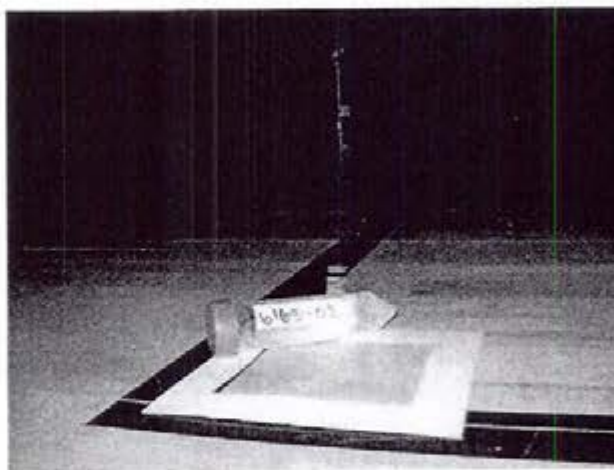
Photograph 8
Water-damaged Ceiling Tile



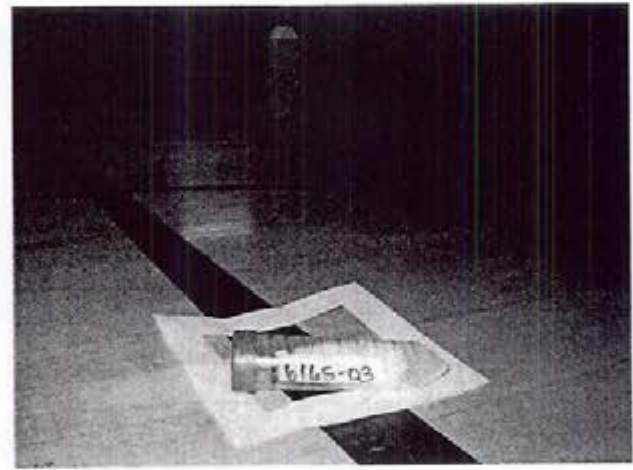
Photograph 9
Water-damaged Ceiling Tile



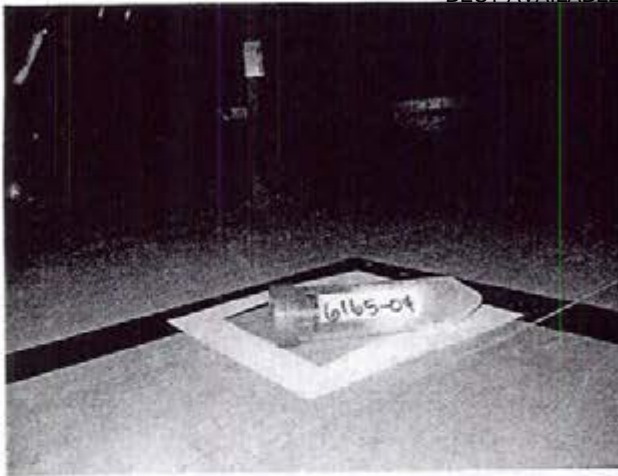
Photograph 10
Location of lead wipe sample number 6165-01



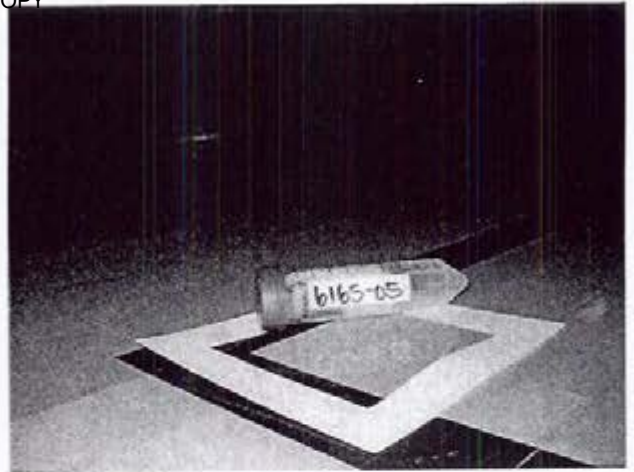
Photograph 11
Location of lead wipe sample number 6165-02



Photograph 12
Location of lead wipe sample number 6165-03



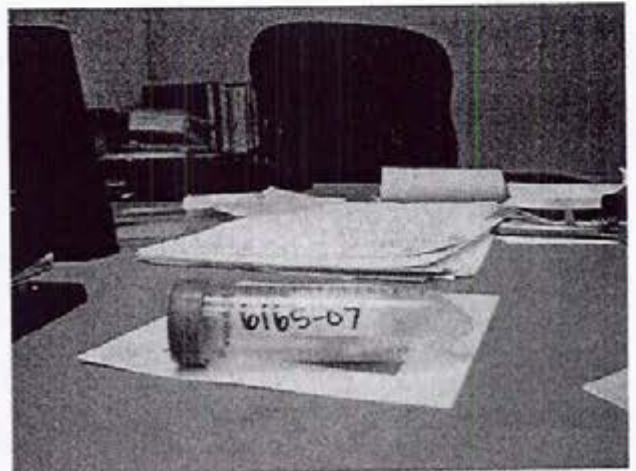
Photograph 13
Location of lead wipe sample number 6165-04



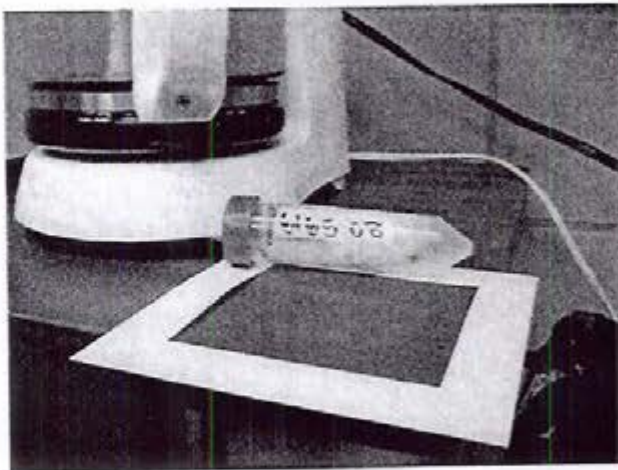
Photograph 14
Location of lead wipe sample number 6165-05



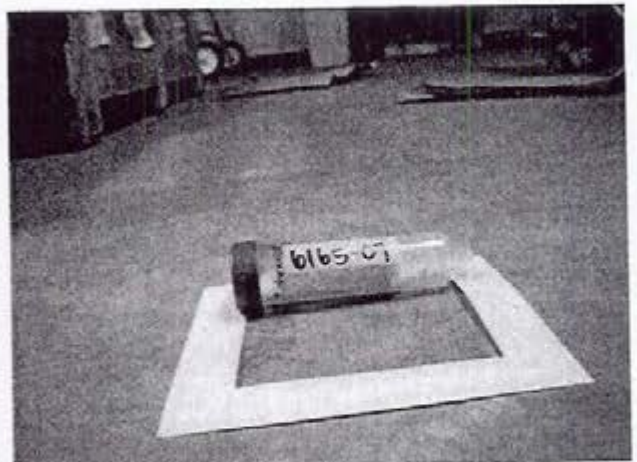
Photograph 15
Location of lead wipe sample number 6165-06



Photograph 16
Location of lead wipe sample number 6165-07



Photograph 17
Location of lead wipe sample number 6165-08



Photograph 18
Location of lead wipe sample number 6165-09

UTAH ARMY NATIONAL GUARD
 118TH ENGINEER CO (SAPPER) DET 1
 10 WEST FREEDOM WAY
 BLANDING, UT 84511

4 OCTOBER

NGUT-MEB-CZ
 2011

Memorandum for DAS-OH

Subject: Hazardous Material Inventory

1. The following is a list of hazardous materials stored at the Blanding, UT Armory. Also, see attached DA form 5832-R.

<u>Nomenclature</u>	<u>Quantity</u>
Dust mops concentrate	.2 gal
Scouring powder	14 cans
Lysol all purpose cleaner	.1 bottle
Sysco pan coating, aerosol	1 can
Talcum powder	1 bottle
Glass cleaner	1 gal
Glass cleaner concentrate	3 liters
Antifogging glass cleaner	.5 gal
Windex	2.5 gal
Windex	2 bottles
Windshield washer fluid	9 bottles
Pledge, aerosol	1 can
2X catalyst	1 bottle
Easypaks bowl cleaner	.25 tubs
Toilet soap	.25 gal
Simple Green	3 gal
Dial liquid soap	2.5 gal
Carpet spotter	1 quart
Floor stripper	1 gal
Floor wax	1 gal
Power duster, aerosol	1 can
Expo dry erase wipes	.25 bottles
Zep hand sanitizer	1 bottle
Isopropyl alcohol	1 bottle
Antifreeze	10 gal
Weed B gone	2 gal 40 oz
Diazinon	1 quart
Diazinon granules	1 bag
Sevin-5	1 bag
Lawn fertilizer	1 bag
Briquettes	.25 bags
PVC cement	3 cans
Lithease aerosol	1 can

UTAH ARMY NATIONAL GUARD
 118TH ENGINEER CO (SAPPER) DET 1
 10 WEST FREEDOM WAY
 BLANDING, UT 84511

Paint, aerosol	31 cans
Cleaning solvent	1 gal.
Paint thinner	1 gal
Polyurethane sealant	2 tube
Polyurethane gloss	1.25 gal
Stain, PP 1814 UD base	5 gal
Paint, deep base 4144	2 gal
Paint, ultra deep base	15 gal
Paint, latex	2 gal
Paint, enamel	2 gal
Paint, white	5 gal
Paint, misc	2 gal
Weatherall acrylic latex	1.25 gal
Alkyd enamel	2.25 gal
Alkyd primer	2 gal
Alkyd stain	1 pint
XO rust enamel	2.5 pints
XO rust enamel, aerosol	1 can
Chemlites, 10 pack	4
Decon apparatus	9
Batteries, AA rechargeable 4 pack	11
Batteries, AA alkaline 24 pack	1
Batteries, AAA alkaline 12 pack	2
Batteries, C alkaline 12 pack	1
Batteries, D alkaline 12 pack	1
Batteries, 9V 12 pack	15
Batteries, lithium ion UN 3480	11
Batteries, sulfur dioxide BA 5800	6
Batteries, sulfur dioxide BA 5567	1 box
Batteries, sulfur dioxide misc	4
Batteries, manganese dioxide BA 5372	1

Appendix E

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



Utah Army National Guard
Blanding Armory
10 West Freedom Way
Blanding, Utah

Indoor Air Quality Sample Locations



PROJECT No:	12U-16165
SHEET:	2 of 2
DRAWN BY:	Keith
DATE:	11-27-2012
REVISED BY:	
DATE:	
REVIEWED BY:	
DATE:	

NOISE SURVEY (Sound Level Meter Survey)									
1. DATE (YYYYMMDD) 20120906				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	
f. LAST ELECTROACOUSTIC CALIB DATE (YYYYMMDD) 20111012			d. LAST ELECTROACOUSTIC CALIB DATE (YYYYMMDD) 20111012			f. 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)
Hood Vent		S	93.3	77.4	IVD	X			
Garbage Disposal		S	85.5	81.0	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:						YES <input type="checkbox"/> NO (If "YES," identify type evaluation needed.) <input checked="" type="checkbox"/>			
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									
NAME (Last, First, Middle Initial) Non-Responsive			b. TELEPHONE (include area code) (435) 678-2008			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				

Ventilation Survey Data and Calculations
Kitchen Exhaust Vents
Blanding, Utah Armory

Kitchen Stove/Oven Exhaust Duct Velocity

Duct Dimensions = 14 x 14 inches

Duct Velocity Measurements

2230	1920	1870	2160
1600	1440	1590	2745
1525	1475	1900	2960

Average Flow Rate = 1951 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?	yes - about 2x per yr on Drill Hall Floor.
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.	no.
Is there any peeling paint ? Take bulk sample if able.	no.
Are there any signs of water damage or mold?	some water damage fixed multiple times in office areas - unsure if the last work fixed problem.
Any suspected ACM ? Where and what condition is it in. Bulk sample if able.	unsure.
Quality of housekeeping	good.
HVAC maintenance plan in place?	DFCM - yes
Overall condition of HVAC system	is good.
Obtained CO2, Temp, RH monitoring	yes
HAZMAT inventory on hand (make copies for the report), MSDS available for all materials.	good.
HAZMAT storage , Condition of lockers, if outside storage building is used is it ventilated and does it meet OSHA standards.	room - ventilated & correctly wired

Fire alarm in working condition - -not usually in place in older armories	yes - Peak Alarm
Fire extinguishers in place and properly identified and mounted	yes -
Evidence of monthly fire extinguisher inspections	yes - Maintenance staff - mortality of Ansell system in kitchen not up to monthly
Annual fire extinguisher inspections tags current	DFCM
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
Training programs in place; Hazcom, Respiratory Protection, Confined Spaces, Hearing conservation, PPE (if applicable)	Last Safety Council Meeting before deployment - 25, Jan 2009. Composite Risk Management, Haz Mat Army Accident Avoidance, Haz Mat Awareness.
Any Photo labs	NA
Any hazardous noise sources	no yes - garbage disposal & Hood
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.?	3 AGAR - 1 state
Any civilian activities in armory (cub scouts, classes, day care, parties etc)	occasionally - Jeep Jamboree 1 x per yr for breakfast
Obtain two lead air samples	On IHSW Request Only

Evaluate Kitchen Stove Hood Flow if Present IAW NFPA Standard 96.	yes
Collect Source Noise Measurements of Kitchen Appliances and Document Using DD 2214	yes.
Conduct a safety walkthrough of entire facility document any safety deficiencies found.	yes.
Take photos of outside of building , all sample points and any pertinent hazards or concerns.	yes
Name of Armory, POC, phone #, address and organizations in Armory	Non-Responsive
(Add Checklist to Report)	10 West Freedom Way Blanding, UT 84511 (Add Checklist to Report)

FACILITY INFORMATION

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

1. Date Prepared:08-15-2012
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: SFC James E. Thode Armory
4. Facility Address:10 W Freedom Way
5. Primary Unit Assigned to Facility: 118th EN CO DET 1 **Non-Responsive**
6. Co-Tenant Units Assigned or Working Within Facility (LIST ALL): Family assistance, Recruiting
7. Square Ft. Area of Facility:19,865
8. Work Schedule: Mon-Thurs 6-16:30
9. Number of work bays:1
10. Equipment Density and Type:
 - a. List Equipment Nomenclature Serviced or Maintained at Facility: 10 ton dump m1157a1p2, trk m998, trk m1152a1
 - b. List Total Number for Each Nomenclature Serviced or Maintained at Facility: 3 m1157a1p2, 1 trk m998, 1 trk m1152a1
11. Total Number of Personnel:4
12. No. of Admin. Personnel (Include Status – AGR, Fed. Tech., IDT, State or Contract Employee): 3-AGR 1-state employee
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

PAGE 1 of 2

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

18. Facility Commander: **Non-Responsive**

Non-Responsive Email Address Commercial Telephone Number and Unit Assigned to:
435-678-2008 118th EN CO DET1

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

Non-Responsive Email Address Commercial Telephone Number and Unit Assigned to:
435-678-2008 118th EN CO DET1

20. Facility Telephone Number: 435-678-2008

Appendix H
Calibration Certificates



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	Tolerance Limit +
5001 PPM	4990 PPM	-0.2 %		0	
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.

Applicable Test Report

DC Voltage
Barometric Pressure
Pure Nitrogen
CO2 1000 PPM in N2
CO2 5000 PPM in N2

Report Number

E002415
E001992
UT-230
EB0013815
EB0020543

Date Last Verified

06-21-11
04-08-11
03-02-12
01-21-10
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 %			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> <div>***** AS FOUND DATA *****</div> <div>(INITIAL CALIBRATION CHECK)</div> </div>					
<div> <div>Tolerance Limits:</div> <div>CO2: 50PPM or 3% of reading</div> </div>					

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

DC Voltage
Barometric Pressure
Pure Nitrogen
CO2 1000 PPM in N2
CO2 5000 PPM in N2

Report Number

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E001992
UT-230
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Tel: 800-874-2811 651-490-2874 FAX: 651-490-2121 www.tsi.com

FOIA Requested Record #J-15-0085 (UT)
Released by National Guard Bureau
Page 180 of 1683

TSI 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 %			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> <p>***** AS FOUND DATA *****</p> <p>(INITIAL CALIBRATION CHECK)</p> </div>					
<div> <p>Tolerance Limits:</p> <p>CO2: 50PPM or 3% of reading</p> </div>					

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

DC Voltage
Barometric Pressure
Pure Nitrogen
CO2 1000 PPM in N2
CO2 5000 PPM in N2

Report Number

E002415
E001992
UT-230
EB0013815
EB0020543

Date Last Verified

06-21-11
04-08-11
03-02-12
01-21-10
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 / 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	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

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
☒ 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

DATE

Doc: D: 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.

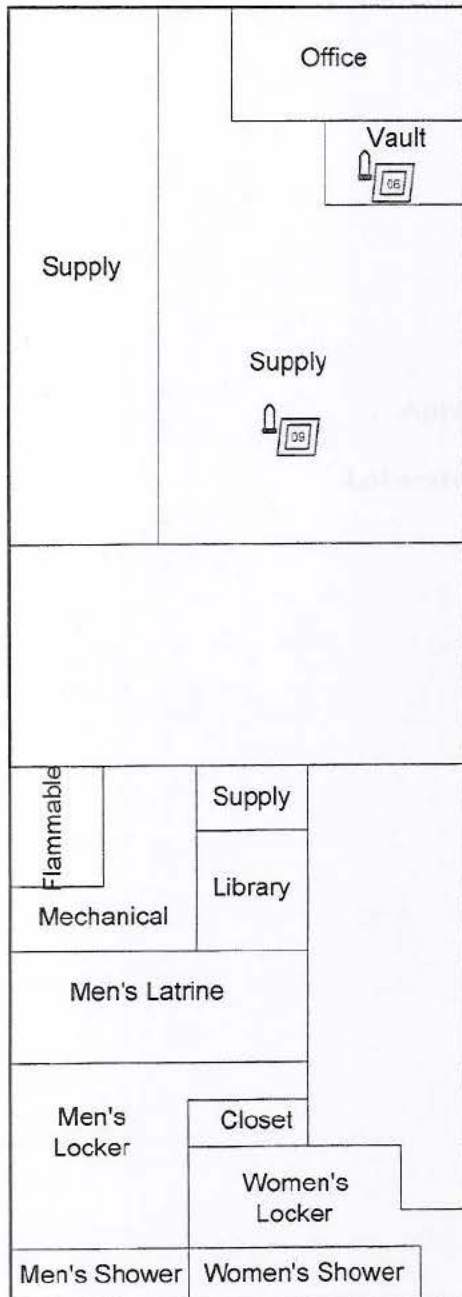
Action:
 The unit was cleaned, calibrated, and a complete operational checkout

was performed.

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Lead Wipe Sample Results

Sample Number	Collection Date	Location	Result $\mu\text{g}/\text{ft}^2$
6165-01	9/6/2012	SW Corner of Drill Hall Floor	<23
6165-02	9/6/2012	SE Corner of Drill Hall Floor	<23
6165-03	9/6/2012	Center of Drill Hall Floor	<23
6165-04	9/6/2012	NW Corner of Drill Hall Floor	<23
6165-05	9/6/2012	NE Corner of Drill Hall Floor	<23
6165-06	9/6/2012	Vault Floor	38
6165-07	9/6/2012	POC's Desk	<23
6165-08	9/6/2012	Kitchen Counter	<23
6165-09	9/6/2012	Supply Room Floor	<23



Drill Hall Floor
Drill Hall Floor
Hall Floor
Drill Hall Floor
Drill Hall Floor
Enter
m Floor

Utah Army National Guard
Blanding Armory
10 West Freedom Way
Blanding, Utah

Lead Wipe Sample Locations



PROJECT No: 12U-I6165
SHEET: 1 of 2
DRAWN BY: [Redacted]
DATE: 11-27-2012
REVISED BY:
DATE:
REVIEWED BY:



ANALYTICAL REPORT

Report Date: September 12, 2012

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

Phone: (801) 466-2223
Fax: (801) 466-9616
E-mail: katwhite@ihi-env.com

Workorder: **34-1225078**
Client Project ID: 12U-I6165/Armory-Blanding,
UT
Purchase Order: 12U-I6165
Project Manager: **Paul Pope**

Analytical Results

Sample ID: <u>6165-01</u>	Media: Lead Dust Wipe	Collected: 09/06/2012
Lab ID: 1225078001	Sampling Location: Armory-Blanding, UT	Received: 09/06/2012
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 100 cm ²	Prepared: 09/10/2012
		Analyzed: 09/11/2012
Analyte	ug/sample	ug/ft ² RL (ug/sample)
Lead	<2.5	<23 2.5

Sample ID: <u>6165-02</u>	Media: Lead Dust Wipe	Collected: 09/06/2012
Lab ID: 1225078002	Sampling Location: Armory-Blanding, UT	Received: 09/06/2012
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 100 cm ²	Prepared: 09/10/2012
		Analyzed: 09/11/2012
Analyte	ug/sample	ug/ft ² RL (ug/sample)
Lead	<2.5	<23 2.5

Sample ID: <u>6165-03</u>	Media: Lead Dust Wipe	Collected: 09/06/2012
Lab ID: 1225078003	Sampling Location: Armory-Blanding, UT	Received: 09/06/2012
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 100 cm ²	Prepared: 09/10/2012
		Analyzed: 09/11/2012
Analyte	ug/sample	ug/ft ² RL (ug/sample)
Lead	<2.5	<23 2.5

Sample ID: <u>6165-04</u>	Media: Lead Dust Wipe	Collected: 09/06/2012
Lab ID: 1225078004	Sampling Location: Armory-Blanding, UT	Received: 09/06/2012
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 100 cm ²	Prepared: 09/10/2012
		Analyzed: 09/11/2012
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 PARTNERS



ANALYTICAL REPORT

Workorder: **34-1225078**Client Project ID: 12U-I6165/Armory-Blanding,
UT

Purchase Order: 12U-I6165

Project Manager: **Non-Responsive**

Analytical Results

Analytical Results			
Sample ID: 6165-05		Media: Lead Dust Wipe	Collected: 09/06/2012
Lab ID: 1225078005		Sampling Location: Armory-Blanding, UT	Received: 09/06/2012
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 100 cm²	Prepared: 09/10/2012
			Analyzed: 09/11/2012
Analyte	ug/sample	ug/ft²	RL (ug/sample)
Lead	<2.5	<23	2.5

Sample ID: 6165-06		Media: Lead Dust Wipe		Collected: 09/06/2012
Lab ID: 1225078006		Sampling Location: Armory-Blanding, UT		Received: 09/06/2012
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 100 cm ²		Prepared: 09/10/2012
				Analyzed: 09/11/2012
Analyte	ug/sample	ug/ft ²	RL (ug/sample)	
Lead	4.0	38	2.5	

Sample ID: 6165-07		Media: Lead Dust Wipe	Collected: 09/06/2012
Lab ID: 1225078007		Sampling Location: Armory-Blanding, UT	Received: 09/06/2012
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 100 cm ²	Prepared: 09/10/2012
			Analyzed: 09/11/2012
Analyte	ug/sample	ug/ft ²	RL (ug/sample)
Lead	<2.5	<23	2.5

Sample ID: 6165-08		Media: Lead Dust Wipe	Collected: 09/06/2012
Lab ID: 1225078008		Sampling Location: Armory-Blanding, UT	Received: 09/06/2012
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 100 cm ²	Prepared: 09/10/2012
			Analyzed: 09/11/2012
Analyte	ug/sample	ug/ft ²	RL (ug/sample)
Lead	<2.5	<23	2.5

Sample ID: 6165-09		Media: Lead Dust Wipe	Collected: 09/06/2012
Lab ID: 1225078009		Sampling Location: Armory-Blanding, UT	Received: 09/06/2012
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 100 cm²	Prepared: 09/10/2012
			Analyzed: 09/11/2012
Analyte	ug/sample	ug/ft²	RL (ug/sample)
Lead	<2.5	<23	2.5

Report Authorization

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

Appendix L
Recommendations

Summary of Recommendations for UTARNG Armory, Blanding, Utah

4.3 Moisture Intrusion and Limited Visual Fungal Growth Evaluation

1. Repair the roof leaks to prevent the introduction of water and potential fungal growth into this armory.

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.

NOISE SURVEY (Sound Level Meter Survey)									
1. DATE (YYYYMMDD) 20120906				2. TYPE SURVEY (Enter code) 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)
Hood Vent		S	93.3	77.4	IVD	X			
Garbage Disposal		S	85.5	81.0	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) 678-2008			c. ORGANIZATION UTARNG			
d. NAME (Last Name, First Name, MI) Non-Responsive			18. HEARING CONSERVATION MONITOR (Last Name, First Name, MI) Non-Responsive						



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

Camp Williams Bldg 1830 Armory
178000 South Camp Williams Road
Riverton, UT 84065

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

21 May 2013

MEMORANDUM THRU Utah Army National Guard, ATTN: LTC Frances Marcus-Madsen (OHN), 12953 S. Minuteman Drive, Draper, UT 84020-1776

FOR Commander Camp Williams Bldg 1830 Armory, 178000 South Camp Williams Road, Riverton, UT 84065

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for the Camp Williams Bldg 1830 Armory, 178000 South Camp Williams Road, Riverton, UT conducted on 26 March 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 Camp Williams Bldg. 1830 Armory, Riverton, UT on 27 AUG 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. Improve housekeeping practices throughout the armory. Special clean-up, using the Clean-up

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHS AV) for the Camp Williams Bldg 1830 Armory, 178000 South Camp Williams Road, Riverton, UT conducted on 26 March 2013.

SOP included in this report, on the vault floor and within the break room area where excessive lead dust was sampled. Cleaning will help prevent contamination and potential migration of lead dust throughout the facility. (para. 4.1) (RAC 3)

b. Obtain all MSDS's and compile a chemical inventory list of chemicals stored in the facility. Periodic or Annual HazCom training should be documented in personnel's files (para. 4.6.1) (RAC 4)

c. Find asbestos survey or have one accomplished and provide assigned personnel with asbestos awareness training and maintenance personnel working on the building. (para. 4.4) (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.

ARNG-CSG-P

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAB) for the Camp Williams Bldg 1830 Armory, 178000 South Camp Williams Road, Riverton, UT conducted on 26 March 2013.

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 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) 854-1492 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
 Camp Williams Building 5160, Riverton, Utah

CONTROL NUMBER	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/NCOIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
UTCW-082712-4.1 <input type="checkbox"/>	The analytical result for lead on the floor in front of the vault was 42 µg/ft ² . The analytical result for lead on the breakroom table was 100 µg/ft ² .	Camp Williams Building 5160	3	1. Clean the floors in front of the vault to a level of less than 40 mg/ft ² following the guidance in the attached SOPs. 2. Clean or properly discard of the break room table to a level of less than 40 mg/ft ² following the guidance in the attached SOPs. 3. Perform post-cleanup wipe sampling to ensure lead levels are within the criterion outlined in the IHSW SOP for Armory Cleanup.					IHSW SOP - Lead, 29 CFR 1910.1025 (h)(1)
UTCW-082712-4.4 <input type="checkbox"/>	An asbestos survey could not be located during this IH Assistance Visit.	Camp Williams Building 5160	3	Either locate the asbestos survey for this building or contract with a licensed firm to perform an asbestos survey and assessment.					1910.1001(j)(3)(i)
UTCW-082712-4.4 <input type="checkbox"/>	Personnel have not been provided with asbestos awareness training.	Camp Williams Building 5160	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 or 1101 or AR 40-5
UTCW-082712-4.6.1 <input type="checkbox"/>	MSDSs and chemical inventories are not current.	Camp Williams Building 5160	4	Obtain MSDSs and compile a chemical inventory for chemicals stored in this building.					29 CFR 1910.1200 (g) (1)
UTCW-082712-4.6.2 <input type="checkbox"/>	Unmarked containers exist in flammable cabinets.	Camp Williams Building 5160	4	Properly mark or dispose of the unnamed containers in the flammable storage cabinet located in the mechanical room.					29 CFR 1910.1200(a)
UTCW-082712-4.10 <input type="checkbox"/>	Wiring is exposed and breakers are open throughout the facility.	Camp Williams Building 5160	4	Ensure all wiring and breakers are properly enclosed.					29 CFR 1910.305 (b) (2)

Reference DA FORM 4754

VER: 15 OCT 2009

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
Camp Williams
17800 South Camp Williams Road
Building 1830
Riverton, Utah 84065**

May 9, 2013

Prepared for:

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

Prepared by:

Non-Responsive

Industrial Hygiene Technician

Reviewed by:

Non-Responsive

Industrial Hygiene Program Manager

Project #AL137013

640 EAST WILMINGTON AVENUE SALT LAKE CITY, UT 84106

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SALT LAKE CITY

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EXECUTIVE SUMMARY

On March 26, 2013, [Non-Responsive] of IHI Environmental (IHI), conducted an IH Assistance Visit at Camp Williams, Building 1830. The primary point of contact for information gathered during this survey was [Non-Responsive] (801) 878-5397, [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 March 26, 2013, [Non-Responsive] of IHI Environmental (IHI) conducted an IH Assistance Visit at Camp Williams, Building 1830, located at 17800 South Camp Williams Road, Riverton, Utah 84065. The primary point of contact for information gathered during this survey was [Non-Responsive] (801) 878-5397. [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

Camp Williams' Building 1830 has 6 full-time Army National Guard members and is used mainly for drill support. This building has offices used for administrative purposes, storage rooms for equipment, a drill hall, break room, bathrooms, and a mechanical room located in the mezzanine. There are no civilian employees at this armory, and civilian activities do not take place in this armory.

Army National Guard members do not clean weapons in this facility. Weapons are reportedly cleaned at another building at Camp Williams.

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- $\mu\text{g}/\text{ft}^2$ 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.

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

The armory's chemical inventory and Material Safety Data Sheet (MSDS) file was reviewed. 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 the facility's 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) 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 IAQ Calc™	8732	54100272	03/20/2013

The calibration certificate for this instrument is 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 all of the lead wipe samples collected were below the 40 $\mu\text{g}/\text{ft}^2$ standard 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.

Recommendation

None

4.2 Painted Surface Evaluation

No peeling paint was observed in this building.

Recommendation

None

4.3 Moisture Intrusion and Limited Visual Fungal Growth Evaluation

Visual evidence of water damage, moisture intrusion, and fungal growth was not observed in this building.

Recommendations

None

4.4 Asbestos Management

An asbestos survey report could not be located during this visit. 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 building is heated by three heating units located in the mezzanine. Air conditioning is provided by three units located on the south side of the building.

The average outdoor CO₂ concentration at the time of the survey was 407 ppm. The highest CO₂ concentration measured inside the building was 392 ppm, which should not result in indoor air quality complaints.

Building air temperatures were all measured between 51.6 and 65.1°F in the building and relative humidity was between 24 and 34 percent during the testing period. Air temperatures were below the recommended comfort range of 68-75°F, and the relative humidity was within the recommended comfort range of between 30 and 60 percent in the majority of the building. Low relative humidity is common in Utah during 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.

Personnel noted that the building is unusually cold in the winter and hot in the summer. It appeared that the air conditioning units were blowing cold air into the building at the time of the survey. Personnel had taken to covering up vents with duct tape and plastic bags.

Camp Williams' facilities personnel maintain all HVAC units in the armory.

Recommendation

1. Evaluate and assess the functionality of the HVAC system.

4.6 Hazard Communication and Hazardous Material Storage**4.6.1 Hazardous Materials Inventory and Material Safety Data Sheets (MSDS)**

A chemical inventory of all custodial products used by the armory, along with their associated MSDSs, is maintained in a master binder located in the janitor's closet. The master chemical inventory was not up to date, and the MSDS binder was not organized in any way. An inspection of the chemical inventory revealed that current products in use by the armory are not all accounted for and their associated MSDSs are not all available.

Copies of chemical inventories are provided in Appendix D.

Recommendations

1. Obtain MSDSs and compile a chemical inventory for chemicals stored in this building.
2. Organize the MSDSs to allow easy and rapid access.

4.6.2 Flammable Storage Cabinets

There are two flammable storage cabinets located in this facility. Both of the flammable cabinets were inspected. No storage incompatibilities or leaking materials were found in the cabinet in a centrally located storage room. In the west storage area, the flammable cabinet contained a spilled chemical that had crystalized. Both lockers were in good condition and all doors were noted to close properly.

Recommendation

1. Clean the inside of the flammable cabinet located in the west storage room.

4.7 Safety Training and Record Keeping

The following safety documentation is maintained in Camp Williams, Building 1830:

- Hearing Conservation Program
- Hazard Communication Program

All other safety-related regulations are maintained electronically on the Utah Army National Guard Portal (Home page).

The last Safety Council Meeting was held on March 2, 2013. In addition, the UTARNG has numerous 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

This facility does not have an industrial kitchen; therefore, a ventilation survey was not performed.

Recommendation

None

4.9 Kitchen Appliance Sound-Level Measurements

This facility does not have an industrial kitchen; therefore, a noise survey was not performed.

Recommendation

None

4.10 General Safety Walk-Through

1. Housekeeping throughout the facility was good.
2. A fire alarm is in place at this facility and is serviced by Camp Williams annually.
3. Fire extinguishers are up to date for annual inspections but not monthly inspections. Several fire extinguishers were found on the floor, one fire extinguisher was blocked in the drill hall, and signage did not exist above any of the fire extinguishers.
4. There are no eyewash stations in this facility and no chemical use that would require one.
5. Fire evacuation routes are posted throughout the building.
6. Electrical boxes and panels were inspected and revealed no open breakers or exposed wiring.
7. Ground Fault Circuit Interrupting outlets were inspected and all were found to trip at 7 milliamps.

Recommendations

1. Place signage above fire extinguishers.
2. Hang fire extinguishers on walls.
3. Ensure all fire extinguishers are inspected monthly.
4. Remove materials from in front of fire extinguisher in drill hall.

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:


J. Rush Bowers, CIH, CSP
Industrial Hygiene Program Manager

May 2, 2013
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

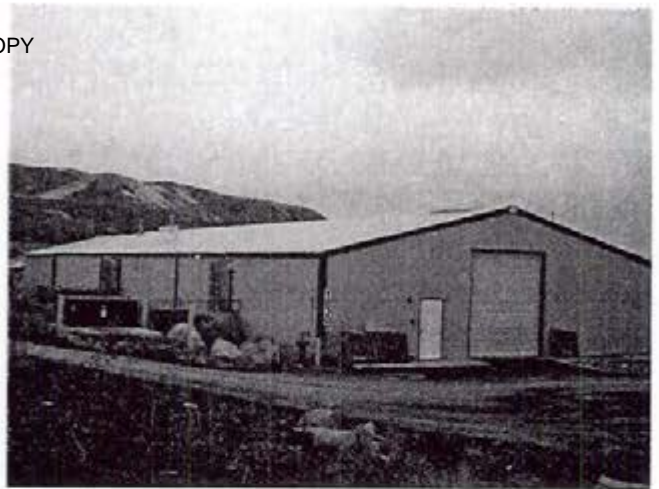
In accordance with the Department of the Army (DA) Pamphlet 40-503, Industrial Hygiene Program (DA PAM 40-503), "The DA mandates the use of ACGIH TLVs when they are more stringent than OSHA regulations or when there is no PEL." The DA defines the resulting exposure limit as the Occupational Exposure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

Appendix C

Photo Log



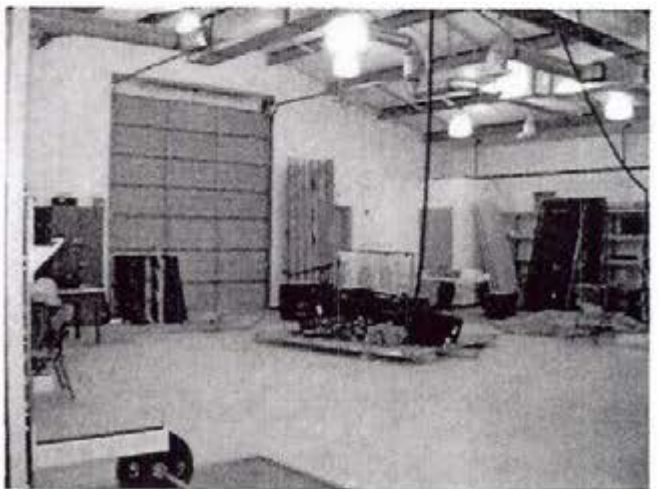
Photograph 1
Camp Williams Building 1830, Front, Exterior



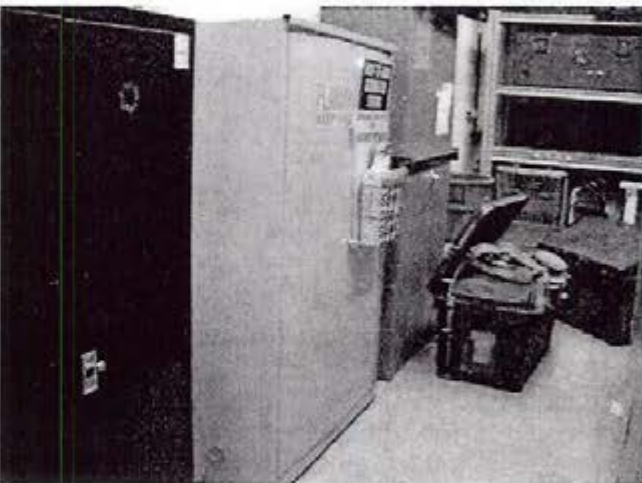
Photograph 2
Camp Williams Building 1830, Rear, Exterior



Photograph 3
Drill Hall – view 1



Photograph 4
Drill Hall - view 2



Photograph 5
Flammable cabinet 1 closed



Photograph 6
Flammable cabinet 1 open



Photograph 7
Chemical spill in flammable cabinet



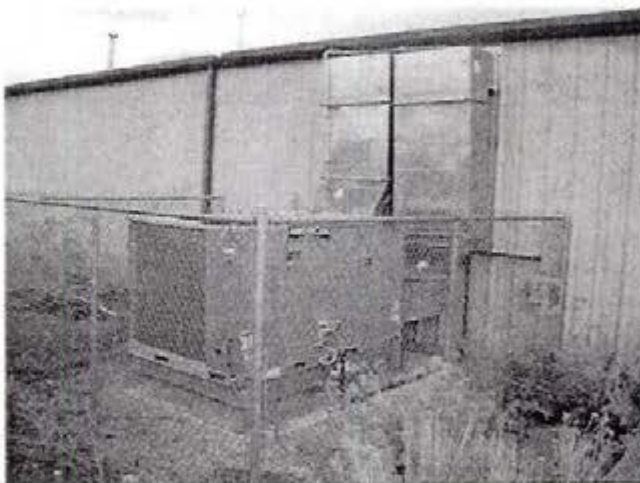
Photograph 8
Flammable cabinet 2 closed



Photograph 9
Flammable cabinet 2 open



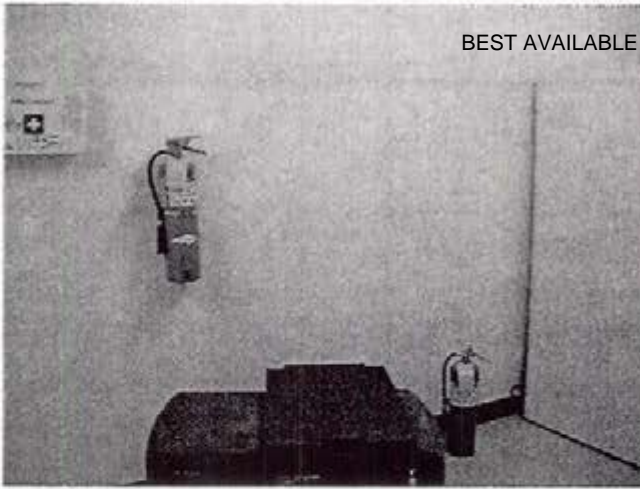
Photograph 10
Water-stained ceiling tiles located in central area of building



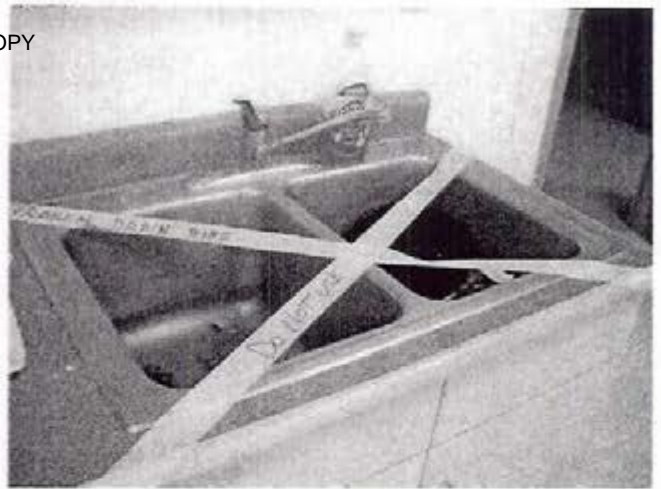
Photograph 11
Three HVAC units behind building were on and blowing cold air during winter



Photograph 12
Vents covered due to cold air blowing in during winter



Photograph 13
No signage above fire extinguishers throughout the building and multiple on extinguishers on floor



Photograph 14
Sink not working in break room



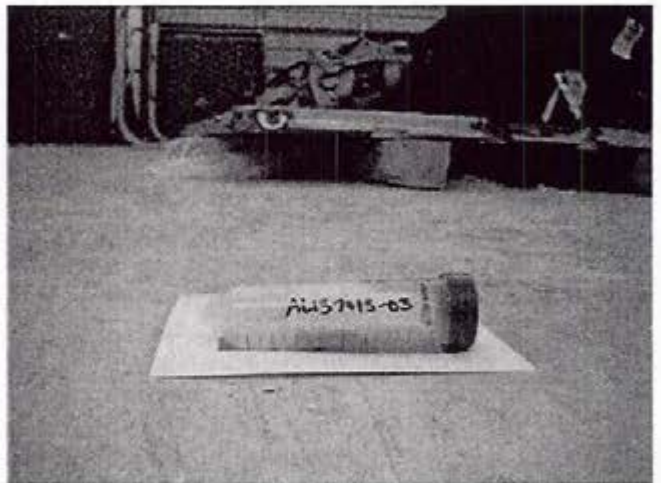
Photograph 15
Fire extinguisher blocked by equipment



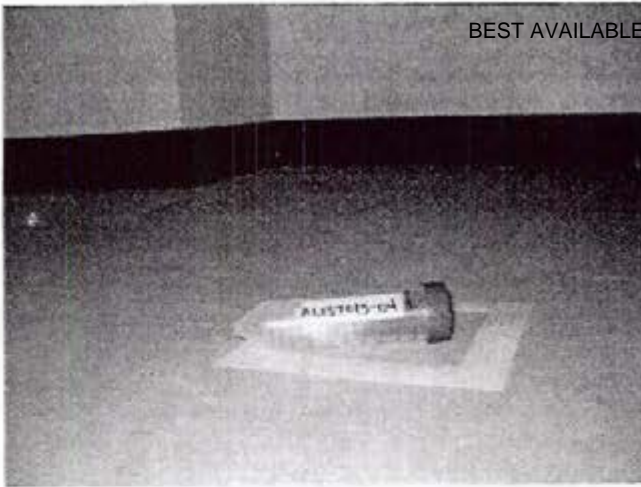
Photograph 16
Lead wipe sample number AL137013-01



Photograph 17
Lead wipe sample number AL137013-02



Photograph 18
Lead wipe sample number AL137013-03



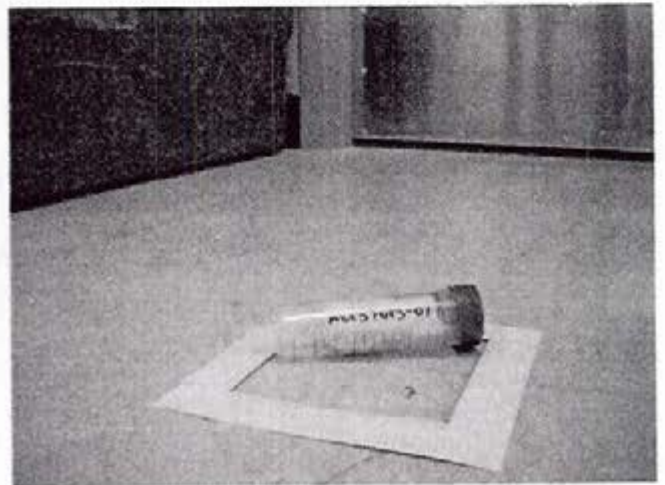
Photograph 19
Lead wipe sample number AL137013-04



Photograph 20
Lead wipe sample number AL137013-05



Photograph 21
Lead wipe sample number AL137013-06



Photograph 22
Lead wipe sample number AL137013-07



Photograph 23
Lead wipe sample number AL137013-08



Photograph 23
Lead wipe sample number AL137013-09

Appendix D
Chemical Inventory

STOCK NUMBER a.	ITEM DESCRIPTION b.	* c.	SEC d.	U e.	QTY AUTH f.	QUANTITY g.					
						A	B	C	D	E	F
6850-00-926-2275 ✓	PAINT THINNER ; 1 GAL. PLASTIC					1					
7310-00-234-3524 ✓	WINDSHIELD WASH FLUID ; 16 OZ. BOTTLE					4	2				
9110-00-263-9865 ✓	POCKET STOVE					9	8				
6840-00-284-3982 ✓	FUEL, COMPRESSED, TRIOXANE ; 3 BARS PER BOX					96	30				
6840-00-284-3982 ✓	INSECT REPELLENT, PERSANAL ; 1 BOX (12 TUBES)					4	13				
6840-00-284-1336 ✓	INSECT REPELLENT, CLOTHING ; 6 OZ. CAN					5	24				
6840-00-067-6674 ✓	INSECTICIDE, AEROSOL ; 12 OZ. CAN					14	13				
6830-00-584-3441 ✓	FUEL CYLINDER, PROPANE					4	4				
	ADHESIVE, AEROSOL ; 16.5 OZ. CAN					4	4				
	CLEANING COMPOUND/DEGREASER ; 22 OZ. CAN					3	6				
	MARKING PRINT, RED ; 17 OZ. CAN					2	2				
	BRK CLEANER ; 14 OZ. CAN					1	1				
6850-00-177-5094 ✓	SILICONE COMPOUND ; 2 OZ. TUBE					14	10				
6850-00-884-7616 ✓	SILICONE COMPOUND ; 8 OZ. TUBE					5	5				
	Camp Dry ; Heavy Duty Water Repellent ; 12 OZ CAN					1					
	Fuel ; Camp/Lantern Stove 1 gal can					2					

STOCK NUMBER a.	ITEM DESCRIPTION b.	* c.	SEC d.	UI e.	QTY AUTH f.	QUANTITY					
						A	B	C	D	E	F
6850-00-926-2275 ✓	PAINT THINNER ; 1 GAL. PLASTIC					1	1				
7310-00-234-3524 ✓	WINDSHIELD WASHER FLUID ; 16 OZ. BOTTLE					4	2				
9110-00-263-9865 ✓	ROCKET STOVE					9	8				
6840-00-284-3982 ✓	FUEL, COMPRESSED, TRIOXANE ; 3 BARS PER BOX					96	30				
6840-00-284-3982 ✓	INSECT REPELLENT, PERSANAL ; 1 BOX (12 TUBES)					4	13				
6840-00-284-1336 ✓	INSECT REPELLENT, CLOTHING ; 6 OZ. CAN					5	24				
6840-00-284-6624 ✓	INSECTICIDE, AEROSOL ; 12 OZ. CAN					17	13				
6830-00-584-3441 ✓	FUEL CYLINDER, PROPANE					4	4				
	ADHESIVE, AEROSOL ; 16.5 OZ. CAN					4	4				
	CLEANING COMPOUND/DEGREASER ; 22 OZ. CAN					3	6				
	MARKING PAINT, RED ; 17 OZ. CAN					2	2				
	BRAKE CLEANER ; 14 OZ. CAN					1	1				
6850-00-177-5094 ✓	SILICONE COMPOUND ; 2 OZ. TUBE					10	10				
6850-00-880-7616 ✓	SILICONE COMPOUND ; 8 OZ. TUBE					5	5				
	Camp Dry ; Heavy Duty Water Repellent ; 12 oz can					1	1				
	Fuel ; Camp/Lantern/stove 1 gal can					2	2				

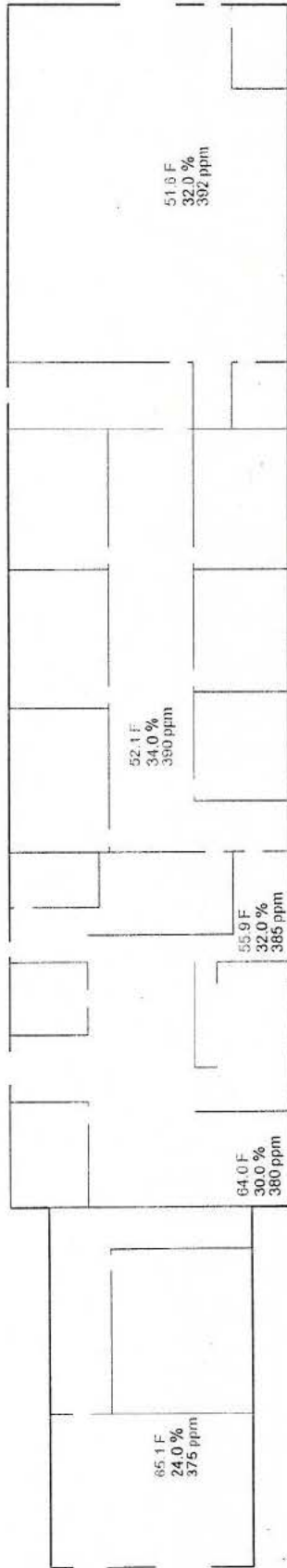
Appendix E

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

Camp Williams - Building 1830
 17800 South Camp Williams Road
 Riverton, Utah



PROJECT NO: AL137013
 SHEET: 04-01
 DRAWN BY: [Redacted]
 DATE: 04-01-2013
 REVISED BY:
 DATE:
 REVIEWED BY: KW
 DATE: 04-03-2013



Outside Measurement
 407 ppm

Explanation
 70.0 F Air Temperature (F)
 30.0% Relative Humidity (%)
 100 ppm Carbon Dioxide (ppm)

Appendix F
Ventilation Data

Camp Williams Building 1830 does not have an industrial kitchen; therefore, a ventilation survey was not performed.

Drill Hall - storage overflow? ^{right} ~~left~~ room

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 - weapons cleaned in weapons have an outside weapons vault bay. but not functioning
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.	no.
Is there any peeling paint? Take bulk sample if able.	no. - remodeled in ~2006
Are there any signs of water damage or mold?	no.
Any suspected ACM? Where and what condition is it in. Bulk sample if able.	unsure.
Quality of housekeeping	good.
HVAC maintenance plan in place?	facilities @ CW
Overall condition of HVAC system	- needs work - cold in winter hot in summer.
Obtained CO2, Temp, RH monitoring	yes.
HAZMAT inventory on hand (make copies for the report), MSDS available for all materials.	yes - but not updated or organized not all MSDSs available
HAZMAT storage, Condition of lockers, if outside storage building is used is it ventilated and does it meet OSHA standards.	good.

Evaluate Kitchen Stove Hood Flow if Present IAW NFPA Standard 96.	n/a
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.	yes.
<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)	Camp Williams - Building 1830 MSG Brett Freeman (801) 878-5397 17800 S. Camp Williams Road Riverton, UT 84062 (Add Checklist to Report)
	brett.l.freeman@mil@mail.mil

FACILITY INFORMATION

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

1. Date Prepared: **3/26/2013**
2. Names (and Company Name) of Personnel Conducting Industrial Hygiene Site Assistance Visit: **Non-Responsive** **II Environmental**
3. Facility Name and Brief Summary of Primary Activities Conducted at Facility: **Camp Williams Building 1830 – support for Bravo Company for Drills**
4. Facility Address: **17800 Camp Williams Road, Building 1830, Riverton, UT 84065**
5. Primary Unit Assigned to Facility: **Bravo Company 1/19th SFG(A) / Non-Responsive**
6. Co-Tenant Units Assigned or Working Within Facility (LIST ALL): **None**
7. Square Ft. Area of Facility: **approximately 13,140 sq. ft**
8. Work Schedule: **0700-1700, Monday through Friday**
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: **6**
12. No. of Admin. Personnel (Include Status – AGR, Fed. Tech., IDT, State or Contract Employee): **5 AGR, 1ADOS**
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: **N/A**
15. Total Number of Personnel Enrolled in the Respiratory Protection Program: **N/A**
16. Total Number of Personnel Enrolled in the Medical Surveillance Program: **N/A**
17. Total Number of Personnel Enrolled in the Vision Program: **N/A**

PAGE 1 of 2

Appendix H

Calibration Certificates

TSI Serial No. 02100504

Calibration Standard Multi-Gas Calibration Bench #127

FOIA Requested Record #J-15-0085 (UT)
Released by National Guard Bureau
Page 234 of 1683



TSI - Customer Service report

Thank you for the opportunity to service your instrument.

RMA Number: 800281603

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 AL130500IHI-JCH
 Purchase Order Date 03/20/2013

Description Calibration of IAQ-Calc 8732

Equipment 87322100504
 Serial Number 2100504
 Material 8732

Service Description:

Return Reason:
 CALIBRATE

Findings:

Unit sent in for clean and calibration. The unit failed as found due to CO2 out of tolerance.

Action:

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

Lead Wipe Sample Results

Location	Date	Time	Lead Concentration (ppb)	Notes
1. 1st Floor, East Wing	10/15/10	10:00	120	Sample taken from wall
2. 2nd Floor, West Wing	10/15/10	10:15	150	Sample taken from wall
3. 3rd Floor, East Wing	10/15/10	10:30	180	Sample taken from wall
4. 4th Floor, West Wing	10/15/10	10:45	210	Sample taken from wall
5. 5th Floor, East Wing	10/15/10	11:00	240	Sample taken from wall
6. 6th Floor, West Wing	10/15/10	11:15	270	Sample taken from wall
7. 7th Floor, East Wing	10/15/10	11:30	300	Sample taken from wall
8. 8th Floor, West Wing	10/15/10	11:45	330	Sample taken from wall
9. 9th Floor, East Wing	10/15/10	12:00	360	Sample taken from wall
10. 10th Floor, West Wing	10/15/10	12:15	390	Sample taken from wall
11. 11th Floor, East Wing	10/15/10	12:30	420	Sample taken from wall
12. 12th Floor, West Wing	10/15/10	12:45	450	Sample taken from wall

Appendix I

Lead Wipe and Lead Paint Chip Table and Drawing

Camp Williams Building 1830 - Lead Wipe Sample Results

Lead Wipe Sample Results			
Sample Number	Collection Date	Location	Result $\mu\text{g}/\text{ft}^2$
AL137013-01	3/26/2013	NW Corner of Drill Hall Floor	12
AL137013-02	3/26/2013	SW Corner of Drill Hall Floor	24
AL137013-03	3/26/2013	Center of Drill Hall Floor	13
AL137013-04	3/26/2013	NE Corner of Drill Hall Floor	<12
AL137013-05	3/26/2013	SE Corner of Drill Hall Floor	15
AL137013-06	3/26/2013	Break Room Counter	<12
AL137013-07	3/26/2013	Central Hallway Floor	<12
AL137013-08	3/26/2013	End of West Hall Floor	<12
AL137013-09	3/26/2013	Facility Entrance Floor	<12
AL137013-10	3/26/2013	Blank	<12

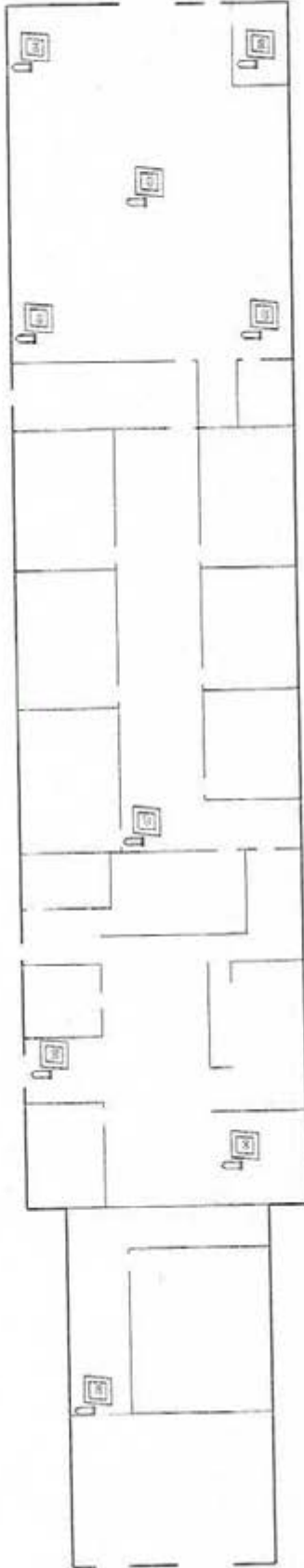
Camp Williams - Building 1830
 17800 South Camp Williams Road
 Riverton, Utah

Lead Wipe Sample Locations

BEST AVAILABLE COPY



PROJECT NO: AL 137013
 SHEET: 1 of 2
 DRAWN BY: RAB
 DATE: 04-03-2012
 REVISIONS:
 DATE: _____
 BY: _____
 REVIEWED BY: KJW
 DATE: 04-03-2012



Explanation



Lead wipe Sample Locations And Numbers

Lead Wipe Sample Locations		
Sample Number	Sample Name	Location
01	AL137013-01	NW Drill Hall Floor
02	AL137013-02	SW Drill Hall Floor
03	AL137013-03	Center Drill Hall Floor
04	AL137013-04	NE Drill Hall Floor
05	AL137013-05	SE Drill Hall Floor
06	AL137013-06	Break Room Counter
07	AL137013-07	Central Hall Floor
08	AL137013-08	End of West Hall Floor
09	AL137013-09	Facility Entrance Floor
10	AL137013-10	Blank

NOTE: All Wipe Sample Sizes are 100 cm²



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ANALYTICAL REPORT

Report Date: March 29, 2013

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

Phone: (801) 466-2223
Fax: (801) 466-9616
E-mail: katwhite@ihi-env.com

Workorder: 34-1308519
Client Project ID: IHI Environmental
Purchase Order: AL137013
Project Manager: Paul Pope

Analytical Results

Sample ID: <u>AL137013-01</u>	Media: Ghost Wipe	Collected: 03/26/2013
Lab ID: 1308519001	Sampling Location: Camp Williams-B.1830	Received: 03/26/2013
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 100 cm ²	Prepared: 03/28/2013
		Analyzed: 03/29/2013
Analyte	ug/sample	ug/ft ² RL (ug/sample)
Lead	1.3	12 1.3

Sample ID: <u>AL137013-02</u>	Media: Ghost Wipe	Collected: 03/26/2013
Lab ID: 1308519002	Sampling Location: Camp Williams-B.1830	Received: 03/26/2013
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 100 cm ²	Prepared: 03/28/2013
		Analyzed: 03/29/2013
Analyte	ug/sample	ug/ft ² RL (ug/sample)
Lead	2.6	24 1.3

Sample ID: <u>AL137013-03</u>	Media: Ghost Wipe	Collected: 03/26/2013
Lab ID: 1308519003	Sampling Location: Camp Williams-B.1830	Received: 03/26/2013
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 100 cm ²	Prepared: 03/28/2013
		Analyzed: 03/29/2013
Analyte	ug/sample	ug/ft ² RL (ug/sample)
Lead	1.4	13 1.3

Sample ID: <u>AL137013-04</u>	Media: Ghost Wipe	Collected: 03/26/2013
Lab ID: 1308519004	Sampling Location: Camp Williams-B.1830	Received: 03/26/2013
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 100 cm ²	Prepared: 03/28/2013
		Analyzed: 03/29/2013
Analyte	ug/sample	ug/ft ² RL (ug/sample)
Lead	<1.3	<12 1.3

ADDRESS 960 West LeVoy Drive, Salt Lake City, Utah, 84123 | 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



ANALYTICAL REPORT

Workorder: 34-1308519

Client Project ID: IHI Environmental

Purchase Order: AL137013

Project Manager: Paul Pope

Analytical Results

Sample ID: AL137013-05	Media: Ghost Wipe	Collected: 03/26/2013
Lab ID: 1308519005	Sampling Location: Camp Williams-B.1830	Received: 03/26/2013
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 100 cm ²	Prepared: 03/28/2013 Analyzed: 03/29/2013
Analyte	ug/sample	ug/ft ² RL (ug/sample)
Lead	1.6	15 1.3

Sample ID: AL137013-06	Media: Ghost Wipe	Collected: 03/26/2013
Lab ID: 1308519006	Sampling Location: Camp Williams-B.1830	Received: 03/26/2013
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 100 cm ²	Prepared: 03/28/2013 Analyzed: 03/29/2013
Analyte	ug/sample	ug/ft ² RL (ug/sample)
Lead	<1.3	<12 1.3

Sample ID: AL137013-07	Media: Ghost Wipe	Collected: 03/26/2013
Lab ID: 1308519007	Sampling Location: Camp Williams-B.1830	Received: 03/26/2013
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 100 cm ²	Prepared: 03/28/2013 Analyzed: 03/29/2013
Analyte	ug/sample	ug/ft ² RL (ug/sample)
Lead	<1.3	<12 1.3

Sample ID: AL137013-08	Media: Ghost Wipe	Collected: 03/26/2013
Lab ID: 1308519008	Sampling Location: Camp Williams-B.1830	Received: 03/26/2013
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 100 cm ²	Prepared: 03/28/2013 Analyzed: 03/29/2013
Analyte	ug/sample	ug/ft ² RL (ug/sample)
Lead	<1.3	<12 1.3

Sample ID: AL137013-09	Media: Ghost Wipe	Collected: 03/26/2013
Lab ID: 1308519009	Sampling Location: Camp Williams-B.1830	Received: 03/26/2013
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 100 cm ²	Prepared: 03/28/2013 Analyzed: 03/29/2013
Analyte	ug/sample	ug/ft ² RL (ug/sample)
Lead	<1.3	<12 1.3

Sample ID: AL137013-10	Media: Ghost Wipe	Collected: 03/26/2013
Lab ID: 1308519010	Sampling Location: Camp Williams-B.1830	Received: 03/26/2013
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 100 cm ²	Prepared: 03/28/2013 Analyzed: 03/29/2013
Analyte	ug/sample	ug/ft ² RL (ug/sample)
Lead	<1.3	<12 1.3



ANALYTICAL REPORT

Workorder: 34-1308519
Client Project ID: IHI Environmental
Purchase Order: AL 137013
Project Manager: Non-Responsive

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: als@alsglobal.com
Web: www.alssl.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 Soil, Dust, Paint, Air	ACCLASS (ISO 17025, CPSC)	ADE-1420	http://www.aiclasscorp.com
	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

Camp Williams Building 1830, Riverton, Utah

CONTROL NUMBER	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/NCOIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
UTCW-032613-4.4 <input type="checkbox"/>	An asbestos survey could not be located during this IH Assistance Visit.	Camp Williams Building 1830	3	Either locate the asbestos survey for this building or contract with a licensed firm to perform an asbestos survey and assessment.					1910.1001(j)(3)(i)
UTCW-032613-4.4 <input type="checkbox"/>	Personnel have not been provided with asbestos awareness training.	Camp Williams Building 1830	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 or 1101 or AR 40-5
UTCW-032613-4.5 <input type="checkbox"/>	Temperatures throughout the building were found to be outside of the recommended comfort range.	Camp Williams Building 1830	4	Evaluate and assess the functionality of the HVAC system.					Recommended Practice
UTCW-032613-4.6.1 <input type="checkbox"/>	MSDSs and chemical inventories are not current.	Camp Williams Building 1830	4	Obtain MSDSs and compile a chemical inventory for chemicals stored in this building.					29 CFR 1910.1200 (g) (1)
UTCW-032613-4.6.1 <input type="checkbox"/>	MSDSs are not organized in some way.	Camp Williams Building 1830	4	Organize the MSDSs to allow easy and rapid access.					29 CFR 1910.1200 (g) (1)
UTCW-032613-4.10 <input type="checkbox"/>	Several fire extinguishers throughout the building are not mounted on walls.	Camp Williams Building 1830	3	Hang fire extinguishers on walls.					29 CFR 1910.157 (c)(1)
UTCW-032613-4.10 <input type="checkbox"/>	Fire extinguishers have not been inspected on a monthly basis.	Camp Williams Building 1830	4	Ensure all fire extinguishers are inspected monthly.					29 CFR 1910.157 (e)(2)
UTCW-032613-4.10 <input type="checkbox"/>	A fire extinguisher in the drill hall is blocked in by large objects.	Camp Williams Building 1830	5	Remove materials from in front of fire extinguisher in drill hall.					29 CFR 1910.157 (c)(1)

Appendix L

Recommendations

Summary of Recommendations for UTARNG Camp Williams Building 1830, Camp Williams, Utah

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.

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

1. Evaluate and assess the functionality of the HVAC system.

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

1. Obtain MSDSs and compile a chemical inventory for chemicals stored in this building.
2. Organize the MSDSs to allow easy and rapid access.

4.6.2 Flammable Storage Cabinets

1. Clean the inside of the flammable cabinet located in the west storage room.

4.10 General Safety Walk-Through

1. Place signage above fire extinguishers.
2. Hang fire extinguishers on walls.
3. Ensure all fire extinguishers are inspected monthly.
4. Remove materials from in front of fire extinguisher in drill hall.



**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**

Camp Williams Bldg 5160 Armory
178000 South Camp Williams Road
Riverton, UT 84065

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

5 December 2012

MEMORANDUM THRU Utah Army National Guard, Deputy State Surgeon (DSS), 12953 S. Minuteman Drive, Draper, Utah 84020-1776

FOR Commander, Camp Williams Bldg 5160 Armory, 17800 South Camp Williams Road, Riverton, UT 84065

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for the Camp Williams Bldg 5160 Armory, 17800 South Camp Williams Rd, Riverton, UT conducted on 27 August 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 Camp Williams Bldg. 5160 Armory, Riverton, UT on 27 AUG 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.

ARNG-CSG-IHSW

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for the Camp Williams Bldg 5160 Armory, 17800 South Camp Williams Rd, Riverton, UT conducted on 27 August 2012.

- a. Improve housekeeping practices throughout the armory. Special clean-up, using the Clean-up SOP included in this report, on the vault floor and within the break room area where excessive lead dust was sampled. Cleaning will help prevent contamination and potential migration of lead dust throughout the facility. (para. 4.1) (RAC 3)
- b. Obtain all MSDS's and compile a chemical inventory list of chemicals stored in the facility. Periodic or Annual HazCom training should be documented in personnel's files (para. 4.6.1) (RAC 4)
- c. Find asbestos survey or have one accomplished and provide assigned personnel with asbestos awareness training and maintenance personnel working on the building. (para. 4.4) (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.

ARNG-CSG-IHSW

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for the Camp Williams Bldg 5160 Armory, 17800 South Camp Williams Rd, Riverton, UT conducted on 27 August 2012.

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 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 Camp Williams Building 5160, Riverton, Utah

CONTROL NUMBER	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/NCOIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
UTCW-082712-4.1 <input type="checkbox"/>	The analytical result for lead on the floor in front of the vault was 42 µg/ft ² . The analytical result for lead on the breakroom table was 100 µg/ft ² .	Camp Williams Building 5160	3	1. Clean the floors in front of the vault to a level of less than 40 mg/ft ² following the guidance in the attached SOPs. 2. Clean or properly discard of the break room table to a level of less than 40 mg/ft ² following the guidance in the attached SOPs. 3. Perform post-cleanup wipe sampling to ensure lead levels are within the criterion outlined in the IHSW SOP for Armory Cleanup.					IHSW SOP - Lead, 29 CFR 1910.1025 (h)(1)
UTCW-082712-4.4 <input type="checkbox"/>	An asbestos survey could not be located during this IH Assistance Visit.	Camp Williams Building 5160	3	Either locate the asbestos survey for this building or contract with a licensed firm to perform an asbestos survey and assessment.					1910.1001(j)(3)(i)
UTCW-082712-4.4 <input type="checkbox"/>	Personnel have not been provided with asbestos awareness training.	Camp Williams Building 5160	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 or 1101 or AR 40-5
UTCW-082712-4.6.1 <input type="checkbox"/>	MSDSs and chemical inventories are not current.	Camp Williams Building 5160	4	Obtain MSDSs and compile a chemical inventory for chemicals stored in this building.					29 CFR 1910.1200 (g) (1)
UTCW-082712-4.6.2 <input type="checkbox"/>	Unmarked containers exist in flammable cabinets.	Camp Williams Building 5160	4	Properly mark or dispose of the unnamed containers in the flammable storage cabinet located in the mechanical room.					29 CFR 1910.1200(a)
UTCW-082712-4.10 <input type="checkbox"/>	Wiring is exposed and breakers are open throughout the facility.	Camp Williams Building 5160	4	Ensure all wiring and breakers are properly enclosed					29 CFR 1910.305 (b) (2)

Reference DA FORM 4754

VER: 15 OCT 2009

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.

BEST AVAILABLE COPY



IH ASSISTANCE VISIT

**Utah Army National Guard
Camp Williams
17800 South Camp Williams Road
Building 5160
Riverton, Utah 84065**

November 15, 2012

Prepared for:

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

Prepared by:

Non-Responsive

Industrial Hygiene Technician

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EXECUTIVE SUMMARY

On August 27, 2012, [Non-Responsive] of IHI Environmental (IHI), conducted an IH Assistance Visit at Camp Williams, Building 5160. The primary point of contact for information gathered during this survey was [Non-Responsive] (801) 878-5647 [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 August 27, 2012, **Non-Responsive** IHI Environmental (IHI), conducted an IHI Assistance Visit at Camp Williams, Building 5160, located at 17800 South Camp Williams Road, Riverton, Utah 84065. The primary point of contact for information gathered during this survey was **Non-Responsive** (801) 878-5647, **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

Camp Williams' Building 5160 has 10 full-time Army National Guard members and is used mainly for parachute packing and maintenance. This building has offices used for administrative purposes, two areas used for parachute packing, a sewing area, supply room, vault, a tower for parachute maintenance, locker room, bathrooms, and a mechanical room. There are no civilian employees at this armory. Occasionally, civilian activities take place in this armory, including grade school and scouting activities.

Army National Guard members do not clean weapons in this facility. Weapons are reportedly cleaned at another building at Camp Williams.

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- $\mu\text{g}/\text{ft}^2$ 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.

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 the facility's 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) 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 IAQ Calc™	8732	54100272	03/19/2012

The calibration certificate for this instrument is 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 the wipe samples collected in front of the vault and on top of the break room table were above the $40 \mu\text{g}/\text{ft}^2$ standard outlined in the IHSW Standard Operating Procedure (SOP) for Armory Cleanup. The vault and supply room were not able to be accessed on the day of the survey.

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 floors in front of the vault to a level of less than $40 \mu\text{g}/\text{ft}^2$ following the guidance in the attached SOPs.
2. Clean the break room table to a level of less than $40 \mu\text{g}/\text{ft}^2$ following the guidance in the attached SOPs.

3. Perform post-cleanup wipe sampling to ensure lead levels are within the criterion outlined in the IHSW SOP for Armory Cleanup.
4. When post-cleanup wipe sampling is performed, ensure the vault floor and supply room floors are also sampled.

4.2 Painted Surface Evaluation

No peeling paint was observed in this building.

Recommendation

None

4.3 Moisture Intrusion and Limited Visual Fungal Growth Evaluation

Visual evidence of water damage, moisture intrusion, and fungal growth was not observed in this building.

Recommendations

None

4.4 Asbestos Management

An asbestos survey report could not be located during this visit; however, personnel believe 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 building is heated by four roof-mounted heating units, five gas-powered heaters, and three electric radiators in the offices and bathroom. Air conditioning is provided by four roof-mounted units.

The average outdoor CO₂ concentration at the time of the survey was 345 ppm. The highest CO₂ concentration measured inside the building was 390 ppm, which should not result in indoor air quality complaints.

Building air temperatures were all measured at 72°F in the building and relative humidity was between 52 and 53 percent during the testing period. Air temperatures were within the recommended comfort range of 68-75°F, and the relative humidity was within the recommended comfort range of between 30 and 60 percent. Low relative humidity is common in Utah during 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.

Personnel noted that the building is unusually dusty and that unclean ducting throughout the building could be to blame. Also, the mechanical/janitor's room has a very strong odor of cleaners.

Camp Williams' facilities personnel maintain all HVAC units in the armory.

Recommendations

1. Perform an air quality analysis while the parachute packing operation is in progress.
2. Assess the air-handler and associated ductwork to ensure cleanliness.
3. Evaluate whether it is necessary to keep all of the cleaning chemicals in the mechanical/janitor's room.

4.6 Hazard Communication and Hazardous Material Storage

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

A chemical inventory of all custodial products used by the armory, along with their associated MSDSs, is maintained in a master binder located in the janitor's closet. The master chemical inventory and MSDS binder are arranged by product number. An inspection of the chemical inventory revealed that current products in use by the armory are not all accounted for and their associated MSDSs are not all available.

Copies of chemical inventories are provided in Appendix D.

Recommendation

Obtain MSDSs and compile a chemical inventory for chemicals stored in this building.

4.6.2 Flammable Storage Cabinets

There are two flammable storage cabinets located in this facility: one in front of the vault and one in the mechanical room.

Both of the flammable lockers were inspected. No storage incompatibilities or leaking materials were found in the locker outside of the vault. In the mechanical room, the flammable cabinet contained three unmarked containers. Both lockers were in good condition and all doors were noted to close properly.

Recommendation

Properly mark or dispose of the unnamed containers in the flammable storage cabinet located in the mechanical room.

4.7 Safety Training and Record Keeping

The following safety documentation is maintained in Camp Williams, Building 5160:

- Fire Drill Training
- Safety Standard Operating Procedure

All other safety-related regulations are maintained electronically on the Utah Army National Guard Portal (Home page).

The last Safety Council Meeting was held on February 7, 2012. In addition, the UTARNG has numerous 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

This facility does not have an industrial kitchen; therefore, a ventilation survey was not performed.

Recommendation

None

4.9 Kitchen Appliance Sound-Level Measurements

This facility does not have an industrial kitchen; therefore, a noise survey was not performed.

Recommendation

None

4.10 General Safety Walk-Through

1. Housekeeping throughout the facility was good, although the facility was dusty.
2. There is no fire alarm in place at this facility.
3. Fire extinguishers are up to date for both annual and monthly inspections.
4. There are no eyewash stations in this facility and no chemical use that would require one.
5. Fire evacuation routes are posted in this building.
6. Electrical boxes and panels were inspected and one box in the mechanical room and one box in the break room were found to contain exposed wiring. Open knockouts were also found in two electrical panels.
7. GFI outlets were inspected and all but one was found to trip at 7 milliamps.

Recommendations

1. Ensure all wiring and breakers are properly enclosed.
2. Make sure the GFCI outlet in the men's restroom is properly wired to trip between 5 and 7 milliamps.

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

November 14, 2012

Date

Industrial Hygiene Program 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 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

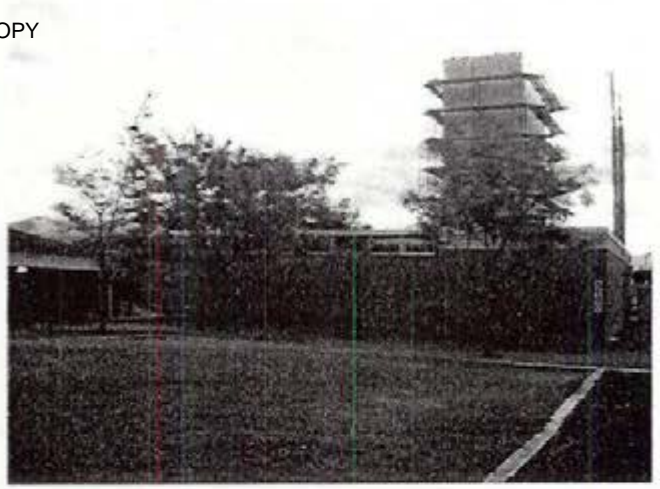
In accordance with the Department of the Army (DA) Pamphlet 40-503, Industrial Hygiene Program (DA PAM 40-503), "The DA mandates the use of ACGIH TLVs when they are more stringent than OSHA regulations or when there is no PEL." The DA defines the resulting exposure limit as the Occupational Exposure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

Appendix C

Photo Log



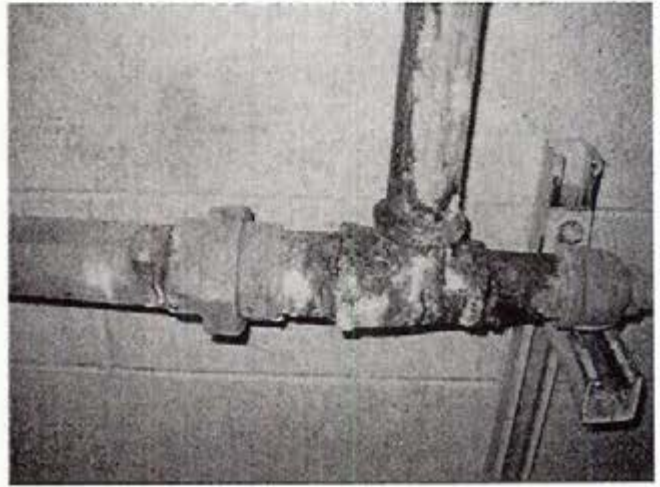
Photograph 1
Camp Williams Building 5160, Front, Exterior



Photograph 2
Camp Williams Building 5160, Rear, Exterior



Photograph 3
Camp Williams Building 5160, General View, Interior



Photograph 4
Severely corroded pipes in janitor's closet



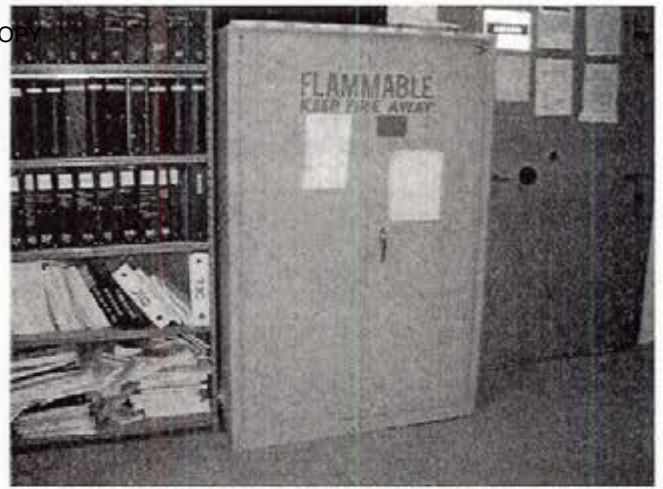
Photograph 5
Flammable cabinet closed



Photograph 6
Flammable cabinet open



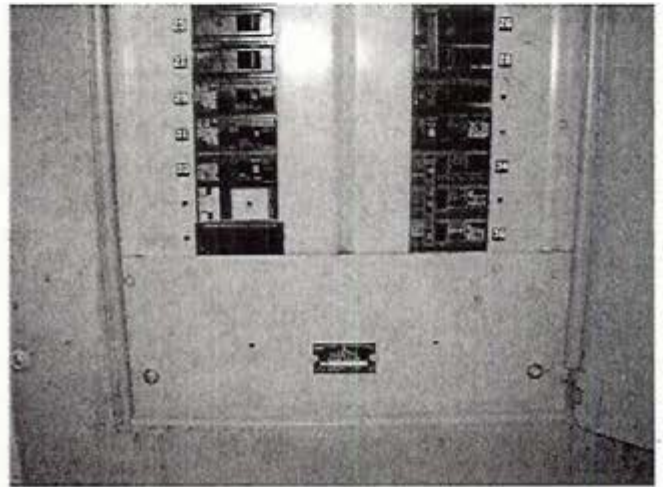
Photograph 7
Unmarked chemicals in flammable cabinet



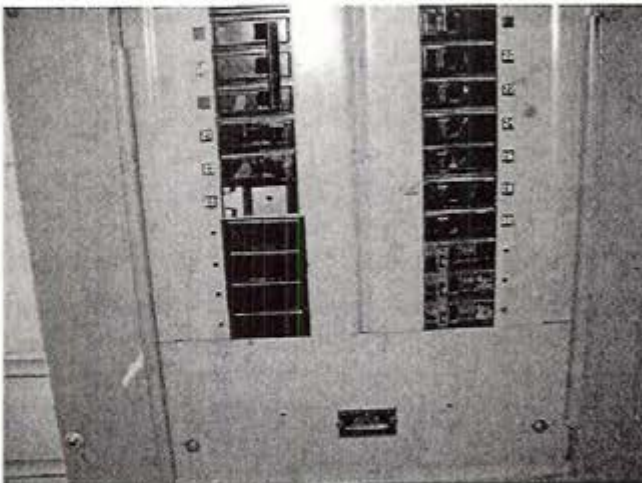
Photograph 8
Flammable cabinet closed



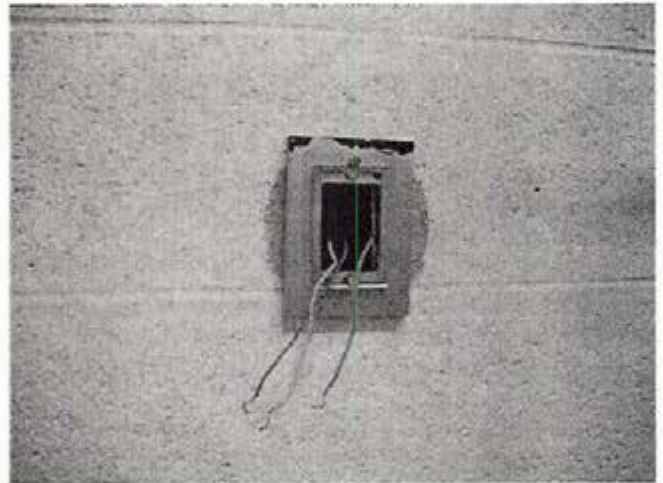
Photograph 9
Flammable cabinet open



Photograph 10
Open breaker panel in janitor's closet



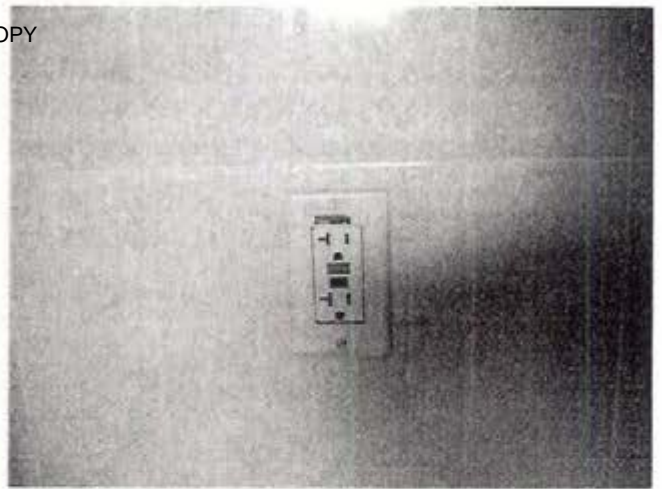
Photograph 11
Open breaker panel in janitor's closet



Photograph 12
Exposed wiring in janitor's closet



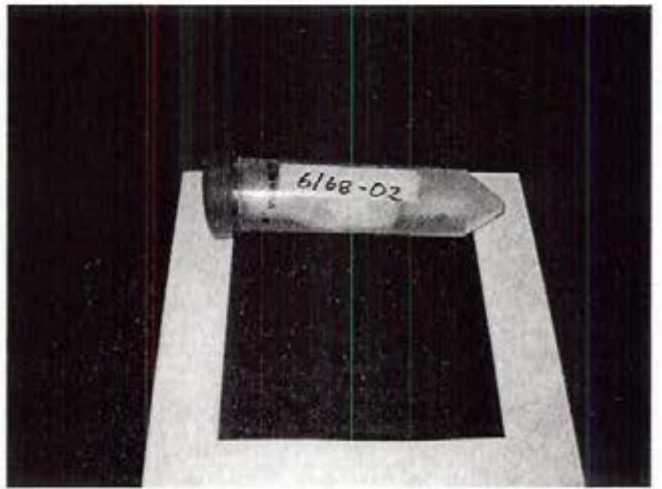
Photograph 13
Exposed wiring in breakroom



Photograph 14
Non-working GFCI outlet in Men's Restroom



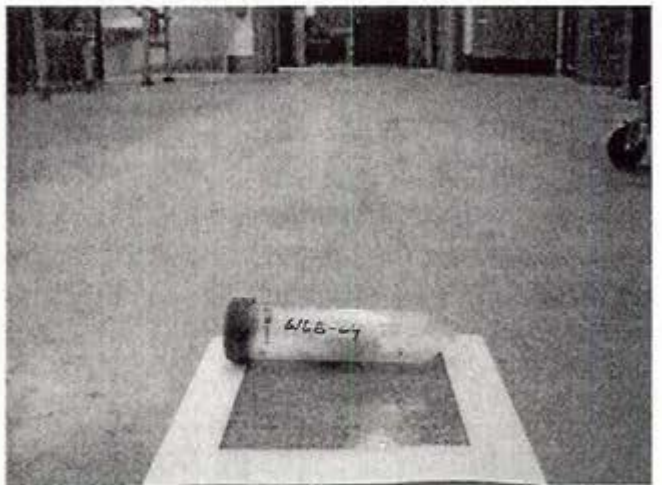
Photograph 15
Location of lead wipe sample number 6168-01



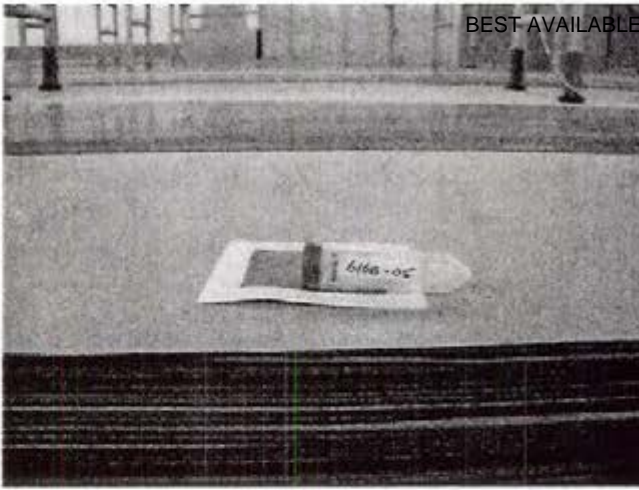
Photograph 16
Location of lead wipe sample number 6168-02



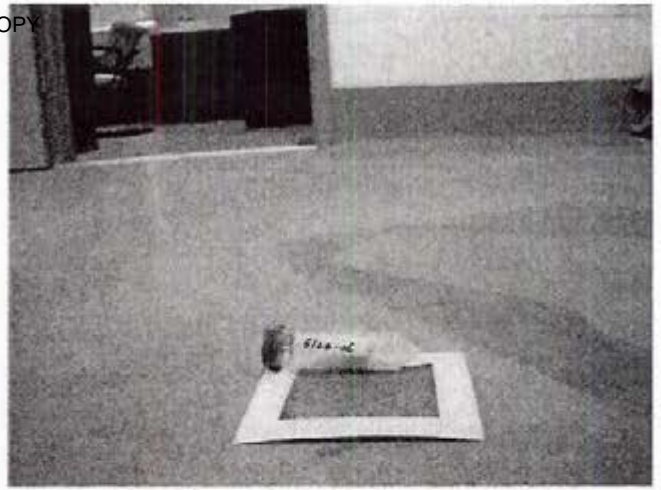
Photograph 17
Location of lead wipe sample number 6168-03



Photograph 18
Location of lead wipe sample number 6168-04



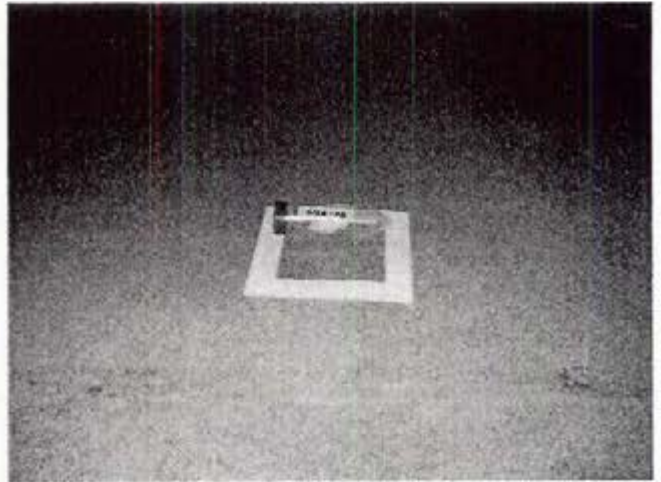
Photograph 19
Location of lead wipe sample number 6168-05



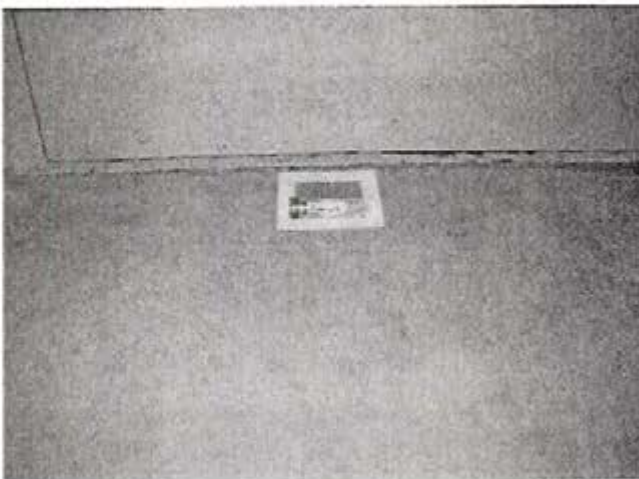
Photograph 20
Location of lead wipe sample number 6168-06



Photograph 21
Location of lead wipe sample number 6168-07



Photograph 22
Location of lead wipe sample number 6168-08



Photograph 23
Location of lead wipe sample number 6168-09

Appendix D
Chemical Inventory

SFEP MSDS LIST

MAINTANANCE AREA

M1. SEALING COMPOUND	8030-00-081-2341
M2. PENETRATING OIL	9150-00-529-7518
M3. WATER REPELLENT COMPOUND (SCOTCHGUARD)	8030-00-116-9255
M4. WATER DISPLAING COMPOUND	6850-00-142-9389
M5. CONCRETE CRACK SEAL	5610-00N082431
M6. ADHESIVE SPRAY	8040-00-995-7080
M7. DFL-AEROSOL	9150-01-260-2534
M8. ADHESIVE, 2-PART EPOXY	8040-00-092-2816
M9. K TYPE STENCIL INK, BLACK	7510-00-161-0811
M10. PARACHUTE INK-STRATA BLUE	7510-00-286-5362
M11. LUBRICATING COMPOUND	9150-00-823-7860
M12. LUBRICANT, INTERLOCKING SLIDE FASTENER (ZIPPER)	9150-00-999-7548
M13. LUBRICATING OIL, SEWING MACHINE	9150-01-086-5785
M14. COLD GALVANIZING COMPOUND	8010-00F016127
M15. SPRAY PAINT, WHITE LUSTERLESS	8010-00-584-3150
M16. SPRAY PAINT, OLIVE DRAB	8010-00-584-3149

UTILITY ROOM

U1. SWEEPING COMPOUND	7930-00-132-5265
U2. LYSOL-DISINFECTANT	6840-01-426-4745
U3. PINE OIL	6840-00-584-3129
U4. URINAL CAKES	6840-00-246-6438
U5. SCOURING POWDER	7930-00-721-8592
U6. DISHWASHING COMPOUND	7930-00-880-4454

S8. REGULATOR FLUID	4220-01-253-0698
S9. BANER COMPRESSOR OIL	9150-00N092268
S10. KAYAK PAINT	N/A
S11. CLEANING COMPOUND	6850-01-389-3859
S12. DETERGENT	7930-00-282-9699
S13. LUBE OIL, AUTOMOTIVE	9150-01-152-4118
S14. DEISEL FUEL	9140-01-056-8320
S15. OXYGEN	N/A
S16. ABSORBENT, CO.2	6810-01-358-5122
S17. NITROGEN	6830-00-616-9183

U7. PROTECTANT/BEAUTIFIER	8030-01-087-3589
U8. GLASS CLEANER	7930-01-326-8110
U9. HAND SANATIZER	8520-00-225-8563
U10. LIQUID BLEACH	6810-01-042-3517
U11. GENERAL PURPOSE CLEANER	7930-00-926-5280
U12. FURNITURE POLISH	7930-01-381-3491
U13. LAUNDRY DETERGENT	7930-01-045-3515
U14. DEGREASER	01-346-9148
U15. WINDEX, BLUE	7930-00F041089
U16. REMOVE (USR)	6850-00F027260
U17. CABLE LUBRICANT	9150-00F016304
U18. INSECT REPELLENT	N/A
U19. HEAVY DUTY STRIPPER	6850-00F008781
U20. DRANO	6850-00-685-4763
U21. DISINFECTANT/DEODORANT	6840-00N001309
U22. ANTIBACTERIAL LOTION SOAP	N/A
U23. AERODAG G	9150-00-880-7153
U24. STAMP PAD INK, RED	7510-00-161-4240
U25. E-Z DRAPE ADHESIVE	6510-01-009-3728
U26. ANT/ROACH KILLER	6840-00F015454
U27. WHITE BOARD CLEANER	N/A
U28. MARKERBOARD CLEANER	6850-01-186-0859
<i>Ringmaster</i>	
SFEP VUALT	
V1. LAW	9150-00-922-9689
V2. CLEANING COMPOUND, SOLVENT	6850-00-105-3084

V3. GMD	9150-00-935-4018
V4. RIFLE BORE CLEANER	6850-00-224-6657
V5. WINDEX	N/A
V6. GREASE, RIFLE	9150-00-754-0063
V7. RUSTOLEUM PAINTERS TOUCH, GREY	N/A
V8. LUBRICATING PRODUCT, LSA	9150-00-889-3522
V9. CLP LIQUID	9150-01-079-6124
V10. SOLID FILM LUBRICANT	9150-01-260-2534
V11. 3M BRAKE CLEANER	08880
V12. BRAKLEEN AEROSOL 05089	6850-01-167-0678
V13. AIRCRAFT GREASE NO.A-72832	9150-00-985-7245
V14. LUBRICATING OIL	9150-00-273-2389
V15. TESTOR AIRCRAFT GRAY SPRAY ENAMEL	8010-00N050313
V16. CHEM CREST 235	N/A
V17. RIFLE BORE CLEANER MIL-PRF-372D	6850-00-224-6663
V18. WATCO DANISH OIL FINISH	N/A
V19. LOCTITE ANAEROBIC SEALANT	8030-01-499-3589

SCUBA LOCKER

S1. SILICONE COMPOUND	6850-00-294-0860
S2. SILICONE GREASE COMPOUND	6850-00-880-7616
S3. LEAK DETECTION COMPOUND	6850-00-621-1820
S4. GREASE	9150-00-754-2760
S5. SEALING COMPOUND	8030-00-999-6313
S6. NAVY OXYGEN CLEANER	N/A
S7. CORROSION PREVENTION COMPOUND	8030-01-347-0979

Appendix E

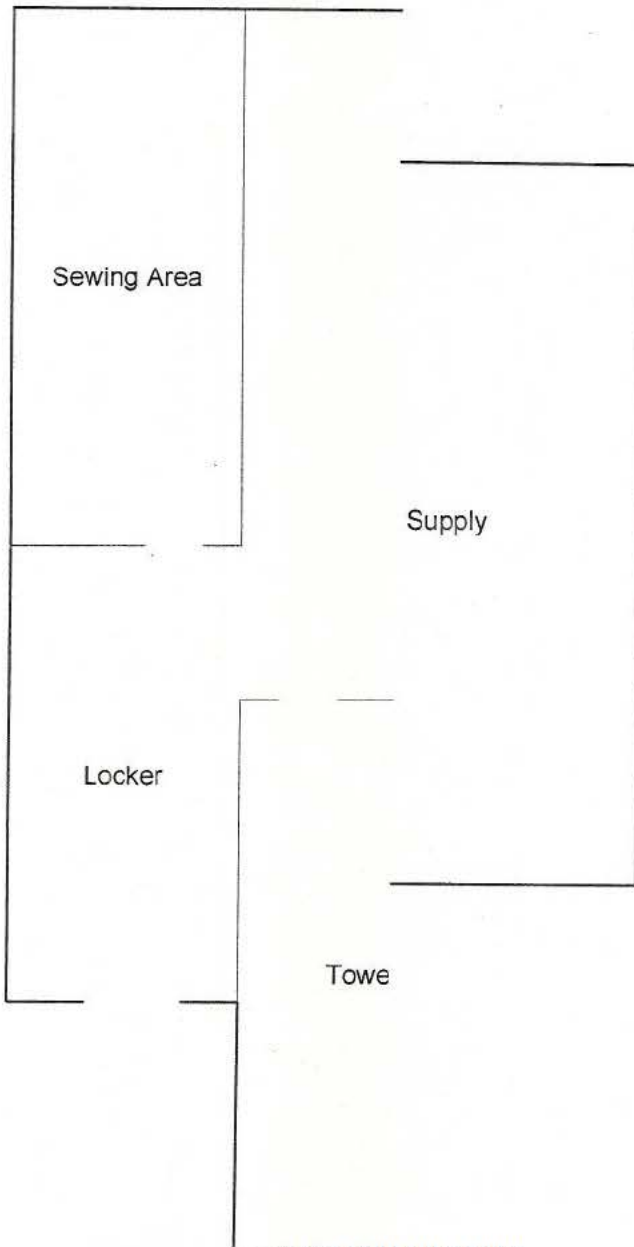
Floor Plan/IAQ - Temp, RH, & CO₂ Monitoring



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

Explanation

70.0 °F Air Temperature
30.0 % Relative Humidity
100 ppm Carbon Dioxide (



Utah Army National Guard
Camp Williams Building 5160
17800 South Camp Williams Road
Riverton, Utah
Indoor Air Quality Sample Locations



0 5' 10'

PROJECT No: 12U-I6168
SHEET: 2 of 3
DRAWN BY: [Redacted]
DATE: 09-06-2012
REVISED BY:
DATE:

REVIEWED BY: [Redacted]

rejects U:\F16168 amp Will 5/16/12 4/11/12 bleed B 100 Incl

Appendix F
Ventilation Data

Camp Williams Building 5160 does not have an industrial kitchen; therefore, a ventilation survey was not performed.

Appendix G

Field Notes

12U-16168
Camp Williams
Building 5160

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)	8 taken
Are any weapons cleaned in the facility, if yes where are they cleaned?	no - vault was not able to be accessed.
Additional lead wipe samples taken from 25% of the rest of the building - (on floor areas only)	see above
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.	none.
Are there any signs of water damage or mold?	none observed.
Any suspected ACM? Where and what condition is it in. Bulk sample if able.	no asbestos survey available - but PDC says one was done ~15-20 yrs ago
Quality of housekeeping	very dusty.
HVAC maintenance plan in place?	Camp Williams Facility Maintenance.
Overall condition of HVAC system	Personnel says Ducting has debris in it 4 roof mounted A/C units + 5 gas powered electrified radiators in offices & bathroom
Obtained CO2, Temp, RH monitoring	yes
HAZMAT inventory on hand (make copies for the report), MSDS available for all materials.	2 flam cabinets MSDS not available for all products (and not in Haz Log)
HAZMAT storage, Condition of lockers, if outside storage building is used is it ventilated and does it meet OSHA standards.	Lockers in good condition.

Fire alarm in working condition - -not usually in place in older armories	no alarm system
Fire extinguishers in place and properly identified and mounted	yes.
Evidence of monthly fire extinguisher inspections	Safety person at this Bldg
Annual fire extinguisher inspections tags current	yes - checked by Simplex-Grinnell
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)	Fire Drill
Any Photo labs	n/a
Any hazardous noise sources	n/a
Light levels checked throughout building	n/a
Breaker panels properly labeled with no exposed wiring	2 breaker panels w/ open breakers
Check building occupancy 1. How many military personnel, how many civilian personnel 2. What types of units occupy facility, i.e. Administrative, Maintenance, etc.?	10 total 1 AGR, 9 Fed Techs. -
Any civilian activities in armory (cub scouts, classes, day care, parties etc)	Scouts or classroom learning. (occasionally)
Obtain two lead air samples	On IHSW Request Only

Evaluate Kitchen Stove Hood Flow if Present IAW NFPA Standard 96.	n/a
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.	yes. noted in drawings.
Take photos of outside of building, all sample points and any pertinent hazards or concerns.	yes.
Name of Armory, POC, phone #, address and organizations in Armory	Non-Responsive (801) 878-5647 B. SIBO 17800 S. Camp Williams Rd. Riverton, UT 84065
(Add Checklist to Report)	(Add Checklist to Report)

Asbestos survey ~~was~~ was done 15-20 years ago.
POC does not know where to find the report.

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

1. Date Prepared: **8/27/2012**
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: **Camp Williams Building 5160, parachute pack and maintenance**
4. Facility Address: **17800 Camp Williams Road, Building 5160, Riverton, UT 84065**
5. Primary Unit Assigned to Facility: **GSC 19th SFCA, UIC** **Non-Responsive**
6. Co-Tenant Units Assigned or Working Within Facility (LIST ALL): **1st BN 19th SFGA**
7. Square Ft. Area of Facility: **approximately 8,000 sq. ft**
8. Work Schedule: **0700-1730, 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: **10**
12. No. of Admin. Personnel (Include Status – AGR, Fed. Tech., IDT, State or Contract Employee): **1 AGR, 9 Mil Techs**
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: **N/A**
15. Total Number of Personnel Enrolled in the Respiratory Protection Program: **N/A**
16. Total Number of Personnel Enrolled in the Medical Surveillance Program: **N/A**
17. Total Number of Personnel Enrolled in the Vision Program: **N/A**

PAGE 1 of 2

18. Facility Commander **Non-Responsive**
- a. Email address, Commercial Telephone Number and Unit Assigned to:
Non-Responsive 801-878-5647, GSC 19th SFGA
19. Safety Officer: **Non-Responsive**
- a. Email Address, Commercial Telephone Number and Unit Assigned to:
Non-Responsive 801-878-5650, GSC 19th SFGA
20. Facility Telephone Number: (801) 878-5647

Appendix H
Calibration Certificates

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

[illegible]

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

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	Error Compared to Tolerance	Tolerance
				Limit-		Limit+
5001 PPM	5895 PPM	17.9 %			0	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			*	X
<div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> ***** AS FOUND DATA ***** (INITIAL CALIBRATION CHECK) </div>						
<div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p style="text-align: right;">Tolerance Limits:</p> <p>CO2: 50PPM or 3% of reading</p> </div>						

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
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Barometric Pressure	E001992	04-08-11
Pure Nitrogen	UT-230	03-02-12
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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

Recommendation

None

4.9 Kitchen Appliance Sound-Level Measurements

This facility does not have an industrial kitchen; therefore, a noise survey was not performed.

Recommendation

None

4.10 General Safety Walk-Through

1. Housekeeping throughout the facility was good, although the facility was dusty.
2. There is no fire alarm in place at this facility.
3. Fire extinguishers are up to date for both annual and monthly inspections.
4. There are no eyewash stations in this facility and no chemical use that would require one.
5. Fire evacuation routes are posted in this building.
6. Electrical boxes and panels were inspected and one box in the mechanical room and one box in the break room were found to contain exposed wiring. Open knockouts were also found in two electrical panels.
7. GFI outlets were inspected and all but one was found to trip at 7 milliamps.

Recommendations

1. Ensure all wiring and breakers are properly enclosed.
2. Make sure the GFCI outlet in the men's restroom is properly wired to trip between 5 and 7 milliamps.

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

Appendix I

Lead Wipe and Lead Paint Chip Table and Drawing

Camp Williams Building 8070 - Lead Wipe Sample Results**Lead Wipe Sample Results**

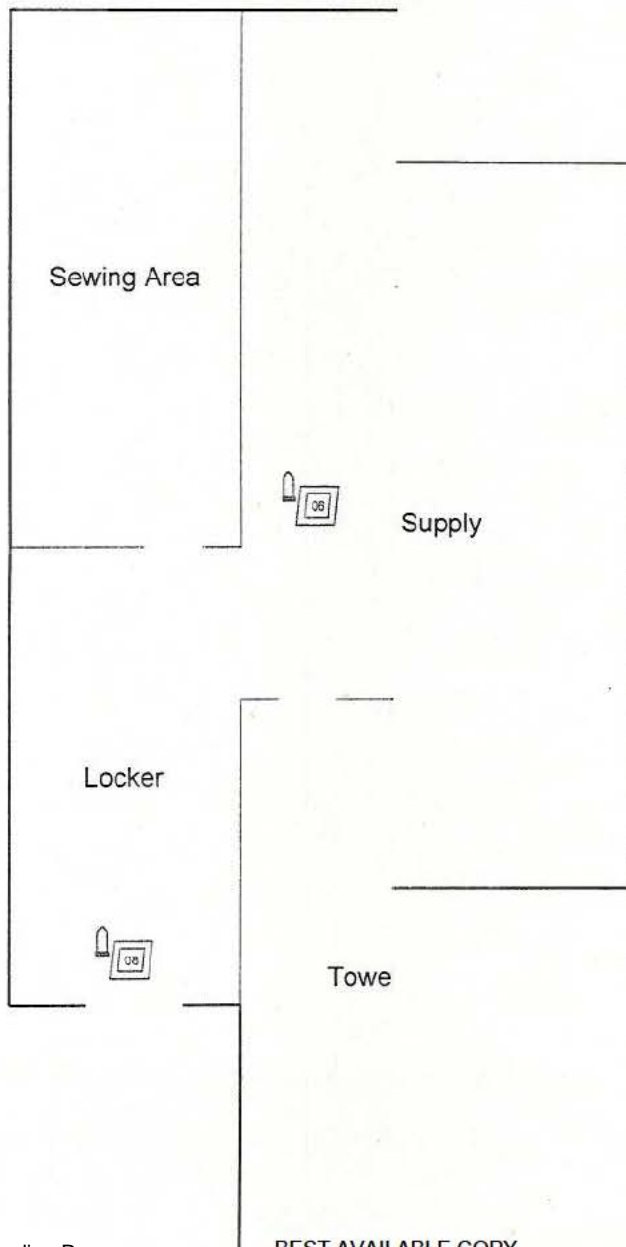
Sample Number	Collection Date	Location	Result $\mu\text{g}/\text{ft}^2$
6168-01	8/27/2012	POC's Desk	<23
6168-02	8/27/2012	Breakroom Table	100
6168-03	8/27/2012	Garage Floor	<23
6168-04	8/27/2012	North End of Parachute Pack	<23
6168-05	8/27/2012	Center of Parachute Pack	<23
6168-06	8/27/2012	SE End of Parachute Pack	<23
6168-07	8/27/2012	Hallway to Ram Air Parachute Pack	<23
6168-08	8/27/2012	Locker Room Floor	<23
6168-09	8/27/2012	Entryway Floor outside of Vault	42

Explanation



Lead Wipe Sample Locations and Numbers

Lead Wipe Location		
Sample Number	Sample Name	Location
01	6168-01	POC's Ingle
02	6168-02	Break Room
03	6168-03	Garage Floor
04	6168-04	North End of
05	6168-05	Center of Pa
06	6168-06	SE End of P
07	6168-07	Hallway to F
08	6168-08	Locker Room
09	6168-09	Vault Floor
10	6168-10	Blank

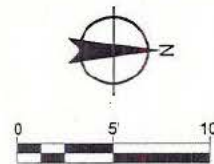
NOTE: All Wipe Sample Sizes are 100 cm²

IHI

ENVIRONMENTAL

640 E. Wilmington Ave.
Salt Lake City, UT 84106
801.466.2223
ihi@ihi-env.com

Utah Army National Guard
Camp Williams Building 5160
17800 South Camp Williams Road
Riverton, Utah
Lead Wipe Sample Locations



PROJECT No: 12U-16168

SHEET: 1 of 3

DRAWN BY: [Redacted]

DATE: 09-06-2012

REVISED BY:

DATE:

REVIEWED BY: [Redacted]

National Guard Bureau

Appendix J
Laboratory Reports



BEST AVAILABLE COPY
ANALYTICAL REPORT

Report Date: September 03, 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: **34-1224058**

Client Project ID: 12U-I6168 IHI Environmental

Purchase Order: 12U-I6168

Project Manager: **Non-Responsive**

Analytical Results

Sample ID: 6168-01	Media: Lead Dust Wipe	Collected: 08/27/2012
Lab ID: 1224058001	Sampling Location: Camp Williams: 5160	Received: 08/27/2012
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 100 cm ²	Prepared: 08/29/2012 Analyzed: 08/30/2012
Analyte	ug/sample	ug/ft ² RL (ug/sample)
Lead	<2.5	<23 2.5

Sample ID: 6168-02	Media: Lead Dust Wipe	Collected: 08/27/2012
Lab ID: 1224058002	Sampling Location: Camp Williams: 5160	Received: 08/27/2012
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 100 cm ²	Prepared: 08/29/2012 Analyzed: 08/30/2012
Analyte	ug/sample	ug/ft ² RL (ug/sample)
Lead	11	100 2.5

Sample ID: 6168-03	Media: Lead Dust Wipe	Collected: 08/27/2012
Lab ID: 1224058003	Sampling Location: Camp Williams: 5160	Received: 08/27/2012
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 100 cm ²	Prepared: 08/29/2012 Analyzed: 08/30/2012
Analyte	ug/sample	ug/ft ² RL (ug/sample)
Lead	<2.5	<23 2.5

Sample ID: 6168-04	Media: Lead Dust Wipe	Collected: 08/27/2012
Lab ID: 1224058004	Sampling Location: Camp Williams: 5160	Received: 08/27/2012
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 100 cm ²	Prepared: 08/29/2012 Analyzed: 08/30/2012
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



BEST AVAILABLE COPY
ANALYTICAL REPORT

Workorder: **34-1224058**
Client Project ID: 12U-I6168 IHI Environmental
Purchase Order: 12U-I6168
Project Manager: **Non-Responsive**

Analytical Results

Sample ID: 6168-05	Media: Lead Dust Wipe	Collected: 08/27/2012
Lab ID: 1224058005	Sampling Location: Camp Williams: 5160	Received: 08/27/2012
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 100 cm ²	Prepared: 08/29/2012 Analyzed: 08/30/2012

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

Sample ID: 6168-06	Media: Lead Dust Wipe	Collected: 08/27/2012
Lab ID: 1224058006	Sampling Location: Camp Williams: 5160	Received: 08/27/2012
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 100 cm ²	Prepared: 08/29/2012 Analyzed: 08/30/2012

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

Sample ID: 6168-07	Media: Lead Dust Wipe	Collected: 08/27/2012
Lab ID: 1224058007	Sampling Location: Camp Williams: 5160	Received: 08/27/2012
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 100 cm ²	Prepared: 08/29/2012 Analyzed: 08/30/2012

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

Sample ID: 6168-08	Media: Lead Dust Wipe	Collected: 08/27/2012
Lab ID: 1224058008	Sampling Location: Camp Williams: 5160	Received: 08/27/2012
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 100 cm ²	Prepared: 08/29/2012 Analyzed: 08/30/2012

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

Sample ID: 6168-09	Media: Lead Dust Wipe	Collected: 08/27/2012
Lab ID: 1224058009	Sampling Location: Camp Williams: 5160	Received: 08/27/2012
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 100 cm ²	Prepared: 08/29/2012 Analyzed: 08/30/2012

Analyte	ug/sample	ug/ft ²	RL (ug/sample)
Lead	4.5	42	2.5



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ANALYTICAL REPORT

Workorder: **34-1224058**
Client Project ID: 12U-I6168 IHI Environmental
Purchase Order: 12U-I6168
Project Manager: **Non-Responsive**

Analytical Results

Sample ID: 6168-10		Media: Lead Dust Wipe	Collected: 08/27/2012
Lab ID: 1224058010		Sampling Location: Camp Williams: 5160	Received: 08/27/2012
Method: NIOSH 7300 Mod.		Sampling Parameter: Area Not Applicable	Prepared: 08/29/2012
			Analyzed: 08/30/2012
Analyte	ug/sample	ug/ft ²	RL (ug/sample)
Lead	<2.5	NA	2.5

Report Authorization

Method	Analyst	Peer Review
NIOSH 7300 Mod.	Penny A. Foote	Peter P. Steen

Laboratory Contact Information

ALS Environmental
960 W Levoe 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

Workorder: **34-1224058**
Client Project ID: 12U-I6168 IHI Environmental
Purchase Order: 12U-I6168
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
Camp Williams Building 5160, Riverton, Utah

CONTROL NUMBER	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/NCOIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
UTCW-082712-4.1 <input type="checkbox"/>	The analytical result for lead on the floor in front of the vault was 42 µg/ft2. The analytical result for lead on the breakroom table was 100 µg/ft2.	Camp Williams Building 5160	3	1. Clean the floors in front of the vault to a level of less than 40 mg/ft2 following the guidance in the attached SOPs. 2. Clean or properly discard of the break room table to a level of less than 40 mg/ft2 following the guidance in the attached SOPs. 3. Perform post-cleanup wipe sampling to ensure lead levels are within the criterion outlined in the IHSW SOP for Armory Cleanup.					IHSW SOP - Lead, 29 CFR 1910.1025 (h)(1)
UTCW-082712-4.4 <input type="checkbox"/>	An asbestos survey could not be located during this IH Assistance Visit.	Camp Williams Building 5160	3	Either locate the asbestos survey for this building or contract with a licensed firm to perform an asbestos survey and assessment.					1910.1001(j)(3)(i)
UTCW-082712-4.4 <input type="checkbox"/>	Personnel have not been provided with asbestos awareness training.	Camp Williams Building 5160	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 or 1101 or AR 40-5
UTCW-082712-4.5 <input type="checkbox"/>	Personnel noted that the building is unusually dusty and that unclean ducting throughout the building could be to blame. Also, the mechanical/janitor's room has a very strong odor of cleaners.	Camp Williams Building 5160	4	1. Perform an air quality analysis while the parachute packing operation is in progress. 2. Assess the air-handler and associated ductwork to ensure cleanliness. 3. Evaluate whether it is necessary to keep all of the cleaning chemicals in the mechanical/janitor's room.					Recommended Practice

Appendix L
Recommendations

Summary of Recommendations for UTARNG Camp Williams Building 5160, Camp Williams, Utah

4.1 Lead Wipe Sampling

1. Clean the floors in front of the vault to a level of less than 40 $\mu\text{g}/\text{ft}^2$ following the guidance in the attached SOPs.
2. Clean or (properly discard) the break room table to a level of less than 40 $\mu\text{g}/\text{ft}^2$ following the guidance in the attached SOPs.
3. Perform post-cleanup wipe sampling to ensure lead levels are within the criterion outlined in the IHSW SOP for Armory Cleanup.
4. When post-cleanup wipe sampling is performed, ensure the vault floor and supply room floors are also sampled.

4.4 Asbestos Management

1. Locate the asbestos survey 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

1. Conduct an indoor air quality survey of this armory with an emphasis on parachute packing operations and a complete investigation of the air handler that supplies heating and cooling air to this location.
2. Evaluate the current bench stock requirements for cleaning products in an attempt to reduce inventory. If an inventory reduction does not alleviate the source of the odors in this closet, relocate these cleaning products to a space where adequate ventilation is provided to reduce cleaning solvent vapors.

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

Obtain MSDSs and compile a chemical inventory for chemicals stored in this building.

4.6.2 Flammable Storage Cabinets

Properly mark or dispose of the unnamed containers in the flammable storage cabinet located in the mechanical room.

4.10 General Safety Walk-Through

1. Ensure all wiring and breakers are properly enclosed.

Summary of Recommendations for UTARNG Camp Williams Building 5160, Camp Williams, Utah

2. Make sure the GFCI outlet in the men's restroom is properly wired to trip between 5 and 7 milliamps

Appendix M
DD Form 2214

Camp Williams Building 5160 does not have an industrial kitchen; therefore, a noise survey was not performed.

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.

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.

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.



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

Camp Williams Bldg 8070 Armory
178000 South Camp Williams Road
Riverton, UT 84065

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



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

ARNG-CSG-IHSW

5 December 2012

MEMORANDUM THRU Utah Army National Guard, Deputy State Surgeon (DSS), 12953 S. Minuteman Drive, Draper, UT 84020-1776

FOR Commander, Camp Williams Bldg 8070 Armory, 17800 South Camp Williams Road, Riverton, UT 84065

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for the Camp Williams Bldg 8070 Armory, 17800 South Camp Williams Road, Riverton, UT conducted on 27 August 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 Camp Williams Bldg. 8070 Armory, Riverton, UT on 27 AUG 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.

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for the Camp Williams Bldg 8070 Armory, 17800 South Camp Williams Road, Riverton, UT conducted on 27 August 2012.

- a. Repair water leak(s), repair/replace water damaged materials and clean up fungal growth in the mechanical room. (para. 4.3) (RAC 4)
- b. Obtain all MSDS's and compile a chemical inventory list of chemicals stored in the facility. Periodic or Annual HazCom training should be documented in personnel's files (para. 4.6.1) (RAC 4)
- c. Find asbestos survey or have one accomplished and provide assigned personnel with asbestos awareness training and maintenance personnel working on the building. (para. 4.4) (RAC 3)
- d. Ensure fire escape plan is posted within every room with direction of travel and evacuation routes noted. Ensure egress signage is in proper working condition and fire extinguishers are inspected both monthly and annually. (para 4.10) (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.

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHSW) for the Camp Williams Bldg 8070 Armory, 17800 South Camp Williams Road, Riverton, UT conducted on 27 August 2012.

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 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

[Signature]
NGB, IHSW, CIV
Industrial Hygiene



Industrial Hygiene Southwest

Violation Inventory Log

LOG OF SCHEDULE OF CORRECTIVE ACTION - COMPLIANCE WITH SAFETY AND HEALTH STANDARDS Camp Williams Building 8070, Riverton, UT

CONTROL NUMBER	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/NCOIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
UTCW-082712-4.3 <input type="checkbox"/>	A pipe leak and mold growth were observed in the mechanical room.	Camp Williams Building 8070	4	Repair the water leak, repair water damage, and clean up fungal growth in the mechanical room.					Recommended Practice
UTCW-082712-4.4 <input type="checkbox"/>	An asbestos survey could not be located during this IH Assistance Visit.	Camp Williams Building 8070	3	Either locate the asbestos survey for this building or contract with a licensed firm to perform an asbestos survey and assessment.					1910.1001(j)(3)(i)
UTCW-082712-4.4 <input type="checkbox"/>	Personnel have not been provided with asbestos awareness training.	Camp Williams Building 8070	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 or 1101 or AR 40-5
UTCW-082712-4.6.1 <input type="checkbox"/>	MSDSs and chemical inventories were not present in this building.	Camp Williams Building 8070	4	Obtain MSDSs and compile a chemical inventory for chemicals stored in this building.					29 CFR 1910.1200
UTCW-082712-4.7 <input type="checkbox"/>	Safety training and records were not available for the unit that occupies this building.	Camp Williams Building 8070	4	At a minimum provide hazard communication 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.					1910.1200 (h), 1910.157 (g), 1910.39 (b)
UTCW-082712-4.10 <input type="checkbox"/>	Egress signage is not illuminated.	Camp Williams Building 8070	4	Ensure egress signage is in proper working condition.					29 CFR 1910.37 (b) (6)
UTCW-082712-4.10 <input type="checkbox"/>	Fire evacuation routes are not posted throughout the building.	Camp Williams Building 8070	3	Ensure fire evacuation routes are posted throughout the facility if the direction of travel to the exit or exit discharge is not immediately apparent.					29 CFR 1910.37 (c)
UTCW-082712-4.10 <input type="checkbox"/>	Fire extinguishers do not have monthly or annual inspections.	Camp Williams Building 8070	4	Ensure all fire extinguishers receive monthly and annual inspections.					29 CFR 1910.157 (e) (2) and 29 CFR 1910.157 (e) (3)

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.

BEST AVAILABLE COPY



IH ASSISTANCE VISIT

**Utah Army National Guard Armory
Camp Williams, Building 8070
17800 South Camp Williams Road
Riverton, Utah 84065**

November 16, 2012

Prepared for:

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

Prepared by:

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EXECUTIVE SUMMARY

On August 27, 2012, **Non-Responsive** of IHI Environmental (IHI) conducted an IH Assistance Visit at Camp Williams, Building 8070. The primary point of contact for information gathered during this survey was **Non-Responsive** (801) 878-5518, **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 August 27, 2012, [Non-Responsive] of IHI Environmental (IHI) conducted an IH Assistance Visit at Camp Williams, Building 8070, located at 17800 South Camp Williams Road, Riverton, Utah 84065. The primary point of contact for information gathered during this survey was [Non-Responsive] (801) 878-5518 [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

Camp Williams, Building 8070, is a former barracks. The first floor is currently occupied by a communications operations group. The 2nd floor of this building is vacant. This building has offices used for administrative purposes, bathrooms, and a mechanical room. Building 8070 is scheduled to be demolished in the near future, which is why most of the building is vacant and in disrepair.

This building is rarely used by civilians. Weapons are not cleaned in this facility.

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- $\mu\text{g}/\text{ft}^2$ 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.

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 the facility's 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) 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 IAQ Calc™	8732	54100272	03/19/2012

The calibration certificate for this instrument is 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 all of the lead wipe samples collected were below the $40 \mu\text{g}/\text{ft}^2$ standard 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.

Recommendation

None.

4.2 Painted Surface Evaluation

No peeling paint was observed in this building.

Recommendation

None

4.3 Moisture Intrusion and Limited Visual Fungal Growth Evaluation

Visual evidence of water damage, moisture intrusion, and fungal growth were observed in the mechanical room in this building. Photographs were taken of the water damage and are presented in Appendix C.

Recommendation

Repair the water leak, repair water damage, and clean up fungal growth in the mechanical room.

4.4 Asbestos Management

An asbestos survey report could not be located during this visit. 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 building is heated by a gas-fired furnace. Air conditioning is provided by two central air units that were installed in 2003.

The average outdoor CO₂ concentration at the time of the survey was 339 ppm. The highest CO₂ concentration measured inside the building was 494 ppm, which should not result in indoor air quality complaints.

Building air temperatures ranged from 73 to 75°F in the building and relative humidity was between 39 and 49 percent during the testing period. Air temperatures were within the recommended comfort range of 68-75°F, and the relative humidity was within the recommended comfort range of between 30 and 60 percent. Low relative humidity is common in Utah during 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.

Camp Williams' facilities personnel maintain all HVAC units in this building.

Recommendation

None

4.6 Hazard Communication and Hazardous Material Storage

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

This facility does not have a hazardous materials inventory or MSDSs for any of the janitorial supplies stored in this building.

Recommendation

Obtain MSDSs and compile a chemical inventory for chemicals stored in this building.

4.6.2 Flammable Storage Cabinets

There are no flammable storage cabinets located in this building and no flammables located in this building that would warrant one.

Recommendation

None

4.7 Safety Training and Record Keeping

Safety training and records are not kept at this facility.

Recommendation

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

This facility does not have an industrial kitchen; therefore, a ventilation survey was not performed.

Recommendation

None

4.9 Kitchen Appliance Sound-Level Measurements

This facility does not have an industrial kitchen; therefore, a noise survey was not performed.

Recommendation

None

4.10 General Safety Walk-Through

1. Housekeeping throughout the facility was good.
2. There is no fire alarm in place at this facility.
3. Fire extinguishers are not current for annual or monthly inspections.
4. There are no eyewash stations in this facility and no chemical use that would require one.
5. Fire evacuation routes are not posted in this building.
6. Electrical panel boxes were inspected and were found to contain exposed wiring.
7. GFI outlets were inspected and were found to trip at 7ma.
8. Egress signage was not illuminated.

Recommendations

1. Ensure all fire extinguishers receive monthly and annual inspections.
2. Ensure egress signage is in proper working condition.
3. Ensure fire evacuation routes are posted throughout the facility if the direction of travel to the exit or exit discharge is not immediately apparent.

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 IHI Assistance Visit was reviewed and approved by:

Non-Responsive

Industrial Hygiene Program Manager

November 16, 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
Camp Williams Building 8070, Front, Exterior



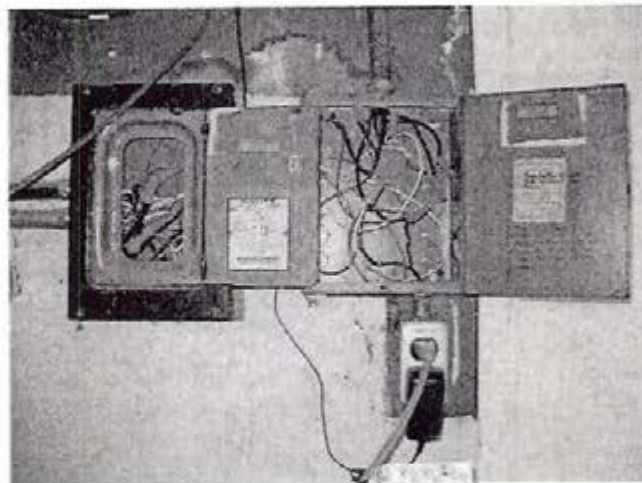
Photograph 2
Camp Williams Building 8070, Side, Exterior



Photograph 3
Camp Williams Building 8070, General View, Interior



Photograph 4
Camp Williams Building 8070, 2nd Floor



Photograph 5
Exposed electrical in mechanical room



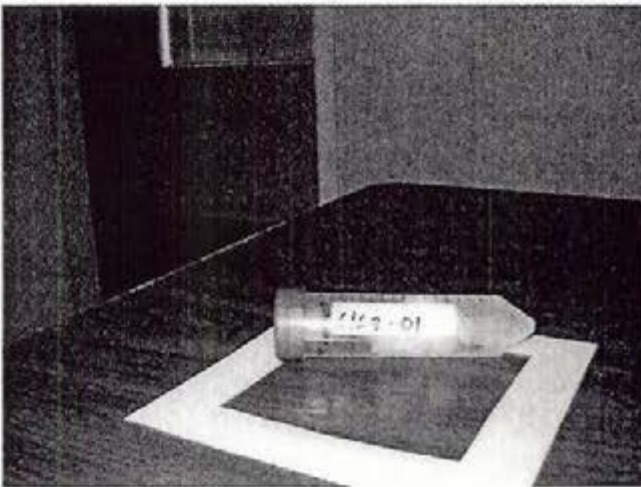
Photograph 6
Fire extinguishers without monthly or annual inspections and Egress signs not working



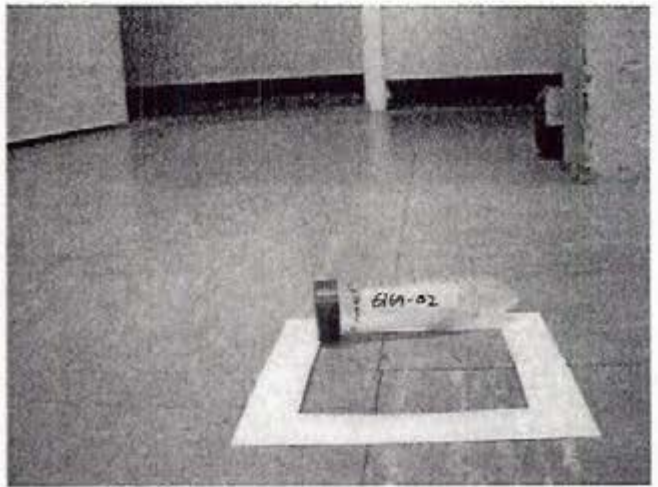
Photograph 7
Chemicals without MSDSs or Chemical Inventory



Photograph 8
Water leak and fungal growth in mechanical room



Photograph 9
Location of lead wipe sample number 6169-01



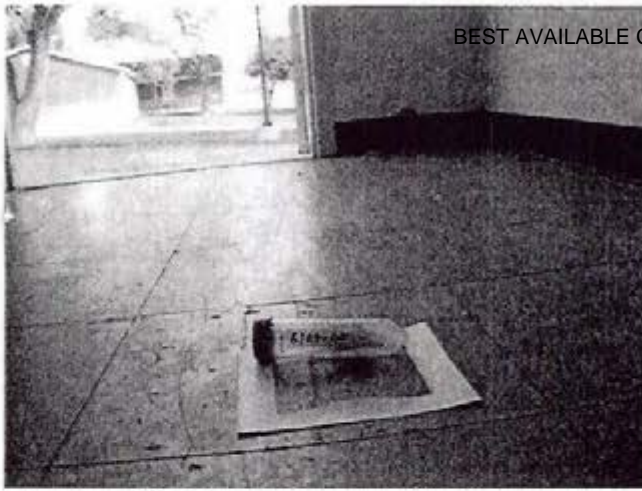
Photograph 10
Location of lead wipe sample number 6169-02



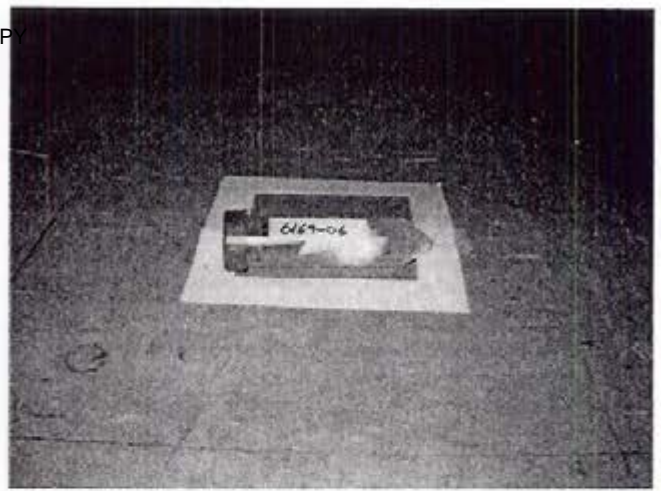
Photograph 11
Location of lead wipe sample number 6169-03



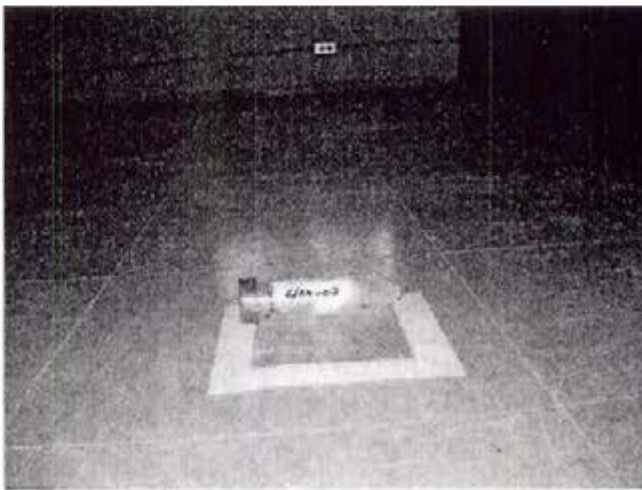
Photograph 12
Location of lead wipe sample number 6169-04



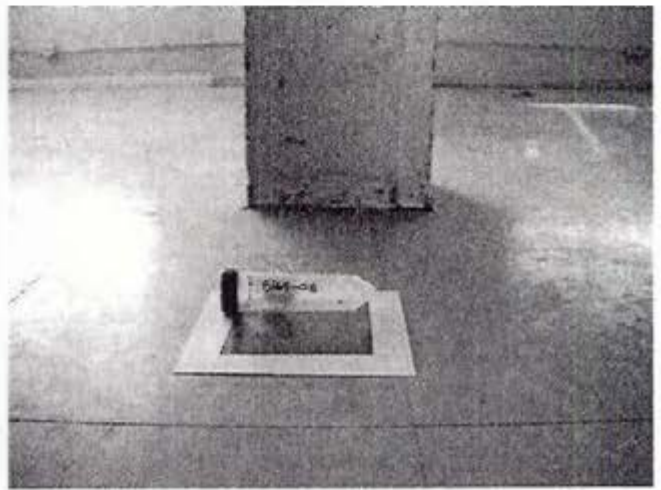
Photograph 13
Location of lead wipe sample number 6169-05



Photograph 14
Location of lead wipe sample number 6169-06



Photograph 15
Location of paint chip sample number 6169-07



Photograph 16
Location of paint chip sample number 6169-08



Photograph 17
Location of paint chip sample number 6169-09

Appendix D
Chemical Inventory

A chemical inventory did not exist at Camp Williams Building 8070 even though there were chemicals that warranted one.

Appendix E

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

Appendix F
Ventilation Data

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)	9 sample from throughout Bldg
Are any weapons cleaned in the facility, if yes where are they cleaned?	no.
Additional lead wipe samples taken from 25% of the rest of the building - (on floor areas only)	see above
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 water room mechanical
Any suspected ACM? Where and what condition is it in. Bulk sample if able.	no asbestos survey available.
Quality of housekeeping	good.
HVAC maintenance plan in place?	2 heating & cooling units. yes. facility personnel ^{personnel}
Overall condition of HVAC system	gas fired furnace & 2 central air units good condition.
Obtained CO2, Temp, RH monitoring	yes.
HAZMAT inventory on hand (make copies for the report), MSDS available for all materials.	none - cleaning supplies exist yes under stairway, but no MSDSs
HAZMAT storage, Condition of lockers, if outside storage building is used is it ventilated and does it meet OSHA standards.	no lockers

Fire alarm in working condition - -not usually in place in older armories	no fire alarm
Fire extinguishers in place and properly identified and mounted	in place w/ proper signage.
Evidence of monthly fire extinguisher inspections	no evidence of monthly inspections
Annual fire extinguisher inspections tags current	last annual inspection was done by Utah Fire Equipment Co in Oct, 2009
Are eye wash stations available in areas where hazardous materials are used and are they inspected weekly (inspections must be documented)	none
Egress routes accessible and properly marked - -noted on <u>Fire Evacuation Plan</u>	no.
Training programs in place; Hazcom, Respiratory Protection, Confined Spaces, Hearing conservation, PPE (if applicable)	No safety binder available.
Any Photo labs	N/A
Any hazardous noise sources	none
Light levels checked throughout building	N/A
Breaker panels properly labeled with no exposed wiring	no. - 2 ^{large junction boxes} panels in mechanical room w/ 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.?	6 ADOS
Any civilian activities in armory (cub scouts, classes, day care, parties etc)	civilians have (once) participated in operations
Obtain two lead air samples	On IHSW Request Only

Evaluate Kitchen Stove Hood Flow if Present IAW NEPA Standard 96.	n/a.
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.	yes. - documented in drawings.
<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)	Non-Responsive (801) 878-5556 Bldg. 8070, Camp Williams 17800 S. Camp Williams Rd. Riverton, UT 84065 (Add Checklist to Report)

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

1. Date Prepared: **8/27/2012**
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:
Camp Williams Building 8070 – JISCC Building; primary activities are communications
4. Facility Address: **17800 Camp Williams Road, Building 8070, Riverton, UT 84065**
5. Primary Unit Assigned to Facility: **97th Troop Command, UIC: Non-Responsive**
6. Co-Tenant Units Assigned or Working Within Facility (LIST ALL): **N/A**
7. Square Ft. Area of Facility: **approximately 4,800 sq. ft**
8. Work Schedule: **Monday through Thursday**
9. Number of work bays: **N/A**
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: **6**
12. No. of Admin. Personnel (Include Status – AGR, Fed. Tech., IDT, State or Contract Employee): **6-ADOS**
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: **N/A**
15. Total Number of Personnel Enrolled in the Respiratory Protection Program: **N/A**
16. Total Number of Personnel Enrolled in the Medical Surveillance Program: **N/A**
17. Total Number of Personnel Enrolled in the Vision Program: **N/A**

PAGE 1 of 2

18. Facility Commander: **1LT Poulton**

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

Non-Responsive 801-878-5556, 97th Troop Command

19. Safety Officer: **Same as above**

a. Email Address, Commercial Telephone Number and Unit Assigned to: **same as above**

20. Facility Telephone Number: **(801) 878-5518**

Appendix H
Calibration Certificates

TSI **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; width: fit-content;"> ***** AS FOUND DATA ***** (INITIAL CALIBRATION CHECK) </div>				.	
				.	
				.	
				.	
				.	
				.	
				.	
				.	
				.	
				.	
			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

Appendix I

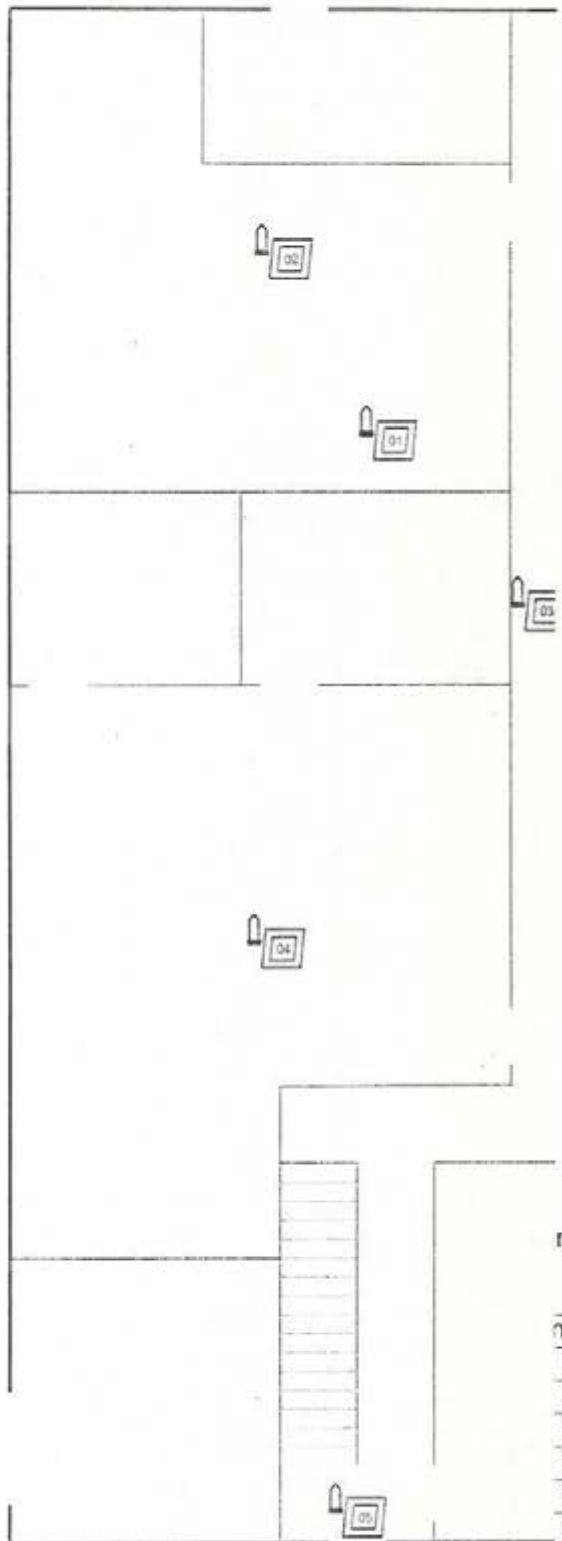
Lead Wipe and Lead Paint Chip Table and Drawing

Camp Williams Building 8070 - Lead Wipe Sample Results**Lead Wipe Sample Results**

Sample Number	Collection Date	Location	Result $\mu\text{g}/\text{ft}^2$
6169-01	8/27/2012	POC's Desk	<23
6169-02	8/27/2012	1st Floor South Office Floor	<23
6169-03	8/27/2012	1st Floor Hallway Floor	<23
6169-04	8/27/2012	1st Floor North Office Floor	<23
6169-05	8/27/2012	1st Floor Main Entryway Floor	<23
6169-06	8/27/2012	2nd Floor North Office Floor	<23
6169-07	8/27/2012	2nd Floor Central Office Floor	<23
6169-08	8/27/2012	2nd Floor South Office Floor	<23
6169-09	8/27/2012	2nd Floor South Hallway Floor	<23

IHI
ENVIRONMENTAL
640 E. Wilmington Ave.
Salt Lake City, UT 84106
801-466-1223
ihi@ihi-env.com

Utah Army National Guard
Camp Williams Building 8070
17800 South Camp Williams Road
Riverton, Utah
Lead Wipe Sample Locations



First Floor

Numbers

Location
POC's Desk
1st Floor South Office Floor
1st Floor Hallway Floor
1st Floor North Office Floor
1st Floor Main Entryway Floor
2nd Floor North Office Floor
2nd Floor Central Office Floor
2nd Floor South Office Floor
2nd Floor South Hallway Floor



PROJECT No: 12U-I6169
SHEET: 1 of 2
DRAWN BY: Keith
DATE: 09-05-2012
REVISED BY:
DATE:

REVIEWED BY:

Appendix J

Laboratory Reports



BEST AVAILABLE COPY
ANALYTICAL REPORT

Report Date: September 03, 2012

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

Phone: (801) 466-2223
Fax: (801) 466-9616
E-mail: katwhite@ihi-env.com

Workorder: **34-1224057**
Client Project ID: 12U-I6169 IHI Environmental
Purchase Order: 12U-I6169
Project Manager: **Paul Pope**

Analytical Results

Sample ID: 6169-01		Media: Lead Dust Wipe		Collected: 08/27/2012
Lab ID: 1224057001		Sampling Location: Camp Williams: 8070		Received: 08/27/2012
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 100 cm ²		Prepared: 08/29/2012
				Analyzed: 08/30/2012
Analyte	ug/sample	ug/ft ²	RL (ug/sample)	
Lead	<2.5	<23	2.5	

Sample ID: 6169-02		Media: Lead Dust Wipe		Collected: 08/27/2012
Lab ID: 1224057002		Sampling Location: Camp Williams: 8070		Received: 08/27/2012
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 100 cm ²		Prepared: 08/29/2012
				Analyzed: 08/30/2012
Analyte	ug/sample	ug/ft ²	RL (ug/sample)	
Lead	<2.5	<23	2.5	

Sample ID: 6169-03		Media: Lead Dust Wipe		Collected: 08/27/2012
Lab ID: 1224057003		Sampling Location: Camp Williams: 8070		Received: 08/27/2012
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 100 cm ²		Prepared: 08/29/2012
				Analyzed: 08/30/2012
Analyte	ug/sample	ug/ft ²	RL (ug/sample)	
Lead	<2.5	<23	2.5	

Sample ID: 6169-04		Media: Lead Dust Wipe		Collected: 08/27/2012
Lab ID: 1224057004		Sampling Location: Camp Williams: 8070		Received: 08/27/2012
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 100 cm ²		Prepared: 08/29/2012
				Analyzed: 08/30/2012
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.

Posted to NGB FOIA Reading Room

BEST AVAILABLE COPY

FOIA Requested Record #J-15-0085 (UT)

IHREP-V10.9



BEST AVAILABLE COPY
ANALYTICAL REPORT

Workorder: **34-1224057**
Client Project ID: 12U-I6169 IHI Environmental
Purchase Order: 12U-I6169
Project Manager: **Non-Responsive**

Analytical Results

Sample ID: 6169-05		Media: Lead Dust Wipe		Collected: 08/27/2012
Lab ID: 1224057005		Sampling Location: Camp Williams: 8070		Received: 08/27/2012
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 100 cm ²		Prepared: 08/29/2012 Analyzed: 08/30/2012
Analyte	ug/sample	ug/ft ²	RL (ug/sample)	
Lead	<2.5	<23	2.5	

Sample ID: 6169-06		Media: Lead Dust Wipe		Collected: 08/27/2012
Lab ID: 1224057006		Sampling Location: Camp Williams: 8070		Received: 08/27/2012
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 100 cm ²		Prepared: 08/29/2012 Analyzed: 08/30/2012
Analyte	ug/sample	ug/ft ²	RL (ug/sample)	
Lead	<2.5	<23	2.5	

Sample ID: 6169-07		Media: Lead Dust Wipe		Collected: 08/27/2012
Lab ID: 1224057007		Sampling Location: Camp Williams: 8070		Received: 08/27/2012
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 100 cm ²		Prepared: 08/29/2012 Analyzed: 08/30/2012
Analyte	ug/sample	ug/ft ²	RL (ug/sample)	
Lead	<2.5	<23	2.5	

Sample ID: 6169-08		Media: Lead Dust Wipe		Collected: 08/27/2012
Lab ID: 1224057008		Sampling Location: Camp Williams: 8070		Received: 08/27/2012
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 100 cm ²		Prepared: 08/29/2012 Analyzed: 08/30/2012
Analyte	ug/sample	ug/ft ²	RL (ug/sample)	
Lead	<2.5	<23	2.5	

Sample ID: 6169-09		Media: Lead Dust Wipe		Collected: 08/27/2012
Lab ID: 1224057009		Sampling Location: Camp Williams: 8070		Received: 08/27/2012
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 100 cm ²		Prepared: 08/29/2012 Analyzed: 08/30/2012
Analyte	ug/sample	ug/ft ²	RL (ug/sample)	
Lead	<2.5	<23	2.5	

Report Authorization

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



BEST AVAILABLE COPY
ANALYTICAL REPORT

Workorder: **34-1224057**
Client Project ID: 12U-I6169 IHI Environmental
Purchase Order: 12U-I6169
Project Manager: **Non-Responsive**

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

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

Camp Williams Building 8070, Riverton, UT

CONTROL NUMBER	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/NCOIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
UTCW-082712-4.3 <input type="checkbox"/>	A pipe leak and mold growth were observed in the mechanical room.	Camp Williams Building 8070	4	Repair the water leak, repair water damage, and clean up fungal growth in the mechanical room.					Recommended Practice
UTCW-082712-4.4 <input type="checkbox"/>	An asbestos survey could not be located during this IH Assistance Visit.	Camp Williams Building 8070	3	Either locate the asbestos survey for this building or contract with a licensed firm to perform an asbestos survey and assessment.					1910.1001(i)(3)(i)
UTCW-082712-4.4 <input type="checkbox"/>	Personnel have not been provided with asbestos awareness training.	Camp Williams Building 8070	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 or 1101 or AR 40-5
UTCW-082712-4.6.1 <input type="checkbox"/>	MSDSs and chemical inventories were not present in this building.	Camp Williams Building 8070	4	Obtain MSDSs and compile a chemical inventory for chemicals stored in this building.					29 CFR 1910.1200
UTCW-082712-4.7 <input type="checkbox"/>	Safety training and records were not available for the unit that occupies this building.	Camp Williams Building 8070	4	At a minimum provide hazard communication 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.					1910.1200 (h), 1910.157 (g), 1910.39 (b)
UTCW-082712-4.10 <input type="checkbox"/>	Egress signage is not illuminated.	Camp Williams Building 8070	4	Ensure egress signage is in proper working condition.					29 CFR 1910.37 (b) (5)
UTCW-082712-4.10 <input type="checkbox"/>	Fire evacuation routes are not posted throughout the building.	Camp Williams Building 8070	3	Ensure fire evacuation routes are posted throughout the facility if the direction of travel to the exit or exit discharge is not immediately apparent.					29 CFR 1910.37 (c)
UTCW-082712-4.10 <input type="checkbox"/>	Fire extinguishers do not have monthly or annual inspections.	Camp Williams Building 8070	4	Ensure all fire extinguishers receive monthly and annual inspections.					29 CFR 1910.157 (e) (2) and 29 CFR 1910.157 (e) (3)

Appendix L
Recommendations

Summary of Recommendations for UTARNG Camp Williams Building 8070, Riverton, Utah

4.3 Moisture Intrusion and Limited Visual Fungal Growth Evaluation

Repair the water leak, repair water damage, and clean up fungal growth in the mechanical room.

4.4 Asbestos Management

1. Locate the asbestos survey 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.

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

Obtain MSDSs and compile a chemical inventory for chemicals stored in this building.

4.7 Safety Training and Record Keeping

At a minimum provide hazard communication 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 receive monthly and annual inspections.
2. Ensure egress signage is in proper working condition.
3. Ensure fire evacuation routes are posted throughout the facility if the direction of travel to the exit or exit discharge is not immediately apparent.

Appendix M
DD Form 2214

Camp Williams Building 8070 does not have an industrial kitchen; therefore, a noise survey was not performed.

NOISE SURVEY (Sound Level Meter Survey)											
1. DATE (YYYYMMDD) 20120814					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				e. LAST ELECTROACOUSTIC CALIB DATE (YYYYMMDD) 20111012				f. 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)
Hood above Griddle		S		77.5	66.1	IVD		X			
Hood above ovens		S		78.4	66.5	IVD		X			
Hood above Stove		S		76.2	64.5	IVD		X			
Garbage Disposal by dishwasher E		S		82.0	80.6	IVD		X			
Garbage Disposal by dishwasher W		S		83.2	81.1	IVD		X			
Garbage Disposal in kitchen		S		82.6	81.2	IVD		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) 878-5021				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					



**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

Camp Williams Readiness Center
17800 S. Camp Williams Road
Riverton, UT 84065

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

8 January 2013

MEMORANDUM THRU Utah Army National Guard, ATTN: **Non-Responsive** (OHN), 12953 S.
Minuteman Drive, Draper, UT 84020-1776

FOR Commander, Camp Williams Readiness Center 17800 S. Camp Williams Rd, Riverton, UT 84065

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for the Camp Williams Readiness Center, 17800 S. Camp Rd, Riverton, UT conducted on 27 August 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 Camp Williams Readiness Center, 17800 S. Camp Williams Rd., Riverton, UT on 27 AUG 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.

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHSW) for the Camp Williams Readiness Center, 17800 S. Camp Rd, Riverton, UT conducted on 27 August 2012.

- a. Inspect the fire suppression system for the readiness center and correct the source of the alarm within the control panel. Also, evaluate the emergency lighting system to ensure emergency evacuation routes are properly illuminated. (para. 4.10) (RAC 4)
- b. Find asbestos survey or have one accomplished and provide assigned personnel with asbestos awareness training. (para. 4.4) (RAC 3)
- c. 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)
- d. Repair the leaks in the roof and replace damaged building materials in the janitor's closet. (para. 4.3) (RAC 3)
- e. Upgrade the duct velocity of the kitchen exhaust fan to at least 500 fpm to help evacuate smoke and fumes. (para. 4.8) (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.

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHSW) for the Camp Williams Readiness Center, 17800 S. Camp Rd, Riverton, UT conducted on 27 August 2012.

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 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

NGB, IHSW, CIV
Industrial Hygiene



Industrial Hygiene Southwest

Violation Inventory Log

LOG OF SCHEDULE OF CORRECTIVE ACTION - COMPLIANCE WITH SAFETY AND HEALTH STANDARDS Camp Williams Readiness Center, Riverton, Utah

CONTROL NUMBER	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/NCOIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
UTCWRC-082712 4.3 <input type="checkbox"/>	Visual evidence of water damage and moisture intrusion were observed throughout this armory.	Camp Williams Readiness Center	3	Repair the leaks in the roof and replace damaged building materials in the janitor's closet.					Recommended Practice
UTCWRC-082712 4.4 <input type="checkbox"/>	An asbestos survey could not be located during this IH Assistance Visit.	Camp Williams Readiness Center	3	Either locate the asbestos survey for this building or contract with a licensed firm to perform an asbestos survey and assessment.					1910.1001(i)(3)(i)
UTCWRC-082712 4.4 <input type="checkbox"/>	Personnel have not been provided with asbestos awareness training.	Camp Williams Readiness Center	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 or 1101 or AR 40-5
UTCWRC-082712 4.7 <input type="checkbox"/>	Safety training and records were not available for the units that occupy this building.	Camp Williams Readiness Center	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.					1910.1200 (h), 1910.157 (g), 1910.39 (b)
UTCWRC-082712 4.8 <input type="checkbox"/>	The kitchen oven/stove exhaust fans has an average duct velocity less than the recommended 500 fpm	Camp Williams Readiness Center	4	Increase the duct velocity to 500 fpm for this exhaust.					NFPA, Standard 96, Section 8.2.1.1 (2011)
UTCWRC-082712 4.10 <input type="checkbox"/>	An open knockout was found in one of the breaker panels in the mechanical room.	Camp Williams Readiness Center	4	Provide a knockout plate for the electrical panel in the mechanical room.					28 CFR 1910.305 (b) (2)
UTCWRC-082712 4.10 <input type="checkbox"/>	The fire suppression system in the kitchen is not current on annual inspections.	Camp Williams Readiness Center	4	Inspect the fire suppression system in the kitchen.					Recommended Practice



Industrial Hygiene Southwest
Violation Inventory Log
LOG OF SCHEDULE OF CORRECTIVE ACTION - COMPLIANCE WITH SAFETY AND HEALTH STANDARDS
Camp Williams Readiness Center, Riverton, Utah

CONTROL NUMBER	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/NCOIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
UTCWRC-082712 4.10 <input type="checkbox"/>	Egress routes that are posted are not clear or accurate.	Camp Williams Readiness Center	4	Post accurate fire evacuation routes. Signs must be posted along the exit access indicating the direction of travel to the nearest exit and exit discharge.					29 CFR 1910.37 (c)
UTCWRC-082712 4.10 <input type="checkbox"/>	Personnel noted that the wiring for the fire suppression system throughout the building has had issues and the master control panels has been beeping.	Camp Williams Readiness Center	4	Inspect the fire-suppression system for the armory and correct the source of the alarm.					Recommended Practice
UTCWRC-082712 4.10 <input type="checkbox"/>	Personnel noted that the emergency lighting system may not meet all requirements.	Camp Williams Readiness Center	4	Evaluate the emergency lighting system to ensure emergency evacuation routes are properly illuminated.					29 CFR 1910.37 (b) (6)

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.

BEST AVAILABLE COPY



IH ASSISTANCE VISIT

**Utah Army National Guard
Camp Williams
17800 South Camp Williams Road
Readiness Center
Riverton, Utah 84065**

December 5, 2012

Prepared for:

**Industrial Hygiene Southwest
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EXECUTIVE SUMMARY

On August 27, 2012 **Non-Responsive** of IHI Environmental (IHI), conducted an IH Assistance Visit at the Camp Williams Readiness Center. The primary point of contact for information gathered during this survey was **Non-Responsive** (801) 878-5021,

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 August 27, 2012, [Non-Responsive] of IHI Environmental (IHI), conducted an IH Assistance Visit at Camp Williams, Readiness Center, located at 17800 South Camp Williams Road, Riverton, Utah 84065. The primary point of contact for information gathered during this survey was [Non-Responsive] (801) 878-5021 [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 Camp Williams Readiness Center has 59 full-time Army National Guard members and is used by seven units. This building consists of three levels. The basement has a locker room, fitness center, and storage areas. The first floor has a drill hall, restrooms, auditorium, classrooms, six supply rooms and vaults, mechanical, electrical, and boiler rooms, and a kitchen and lunchroom. The second floor mainly consists of office areas with restrooms and break rooms. There are no civilian employees at this armory.

Army National Guard members rarely clean weapons in this facility. Weapons are reportedly cleaned in another building at Camp Williams.

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 E for sample locations and Appendix J for laboratory results.

The Mather, California, office of Industrial Hygiene Southwest (IHSW) 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 $\mu\text{g}/\text{ft}^2$ 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.

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) system that serves the armory was 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

The safety training programs and documentation were reviewed 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 the facility's 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) 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 certificate for this instrument is 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 all wipe samples collected were below the 40 $\mu\text{g}/\text{ft}^2$ standard outlined in the IHSW Standard Operating Procedure (SOP) for Armory Cleanup.

See Appendix E 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

No peeling paint was observed in this building.

Recommendation

None

4.3 Moisture Intrusion and Limited Visual Fungal Growth Evaluation

Visual evidence of water damage and moisture intrusion was observed on all levels in the building. Some water damage in the basement locker rooms appeared to be due to leaks in the janitor's closet on the first floor. Fungal growth was not observed.

Recommendation

1. Repair the leaks in the roof and replace damaged building materials in the janitor's closet.

4.4 Asbestos Management

An asbestos survey report could not be located during this visit.

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 building is heated by two hot water boilers with central heat and by single units in the garage and supply rooms. Air conditioning is provided by a large chiller that connects to the central lines and is located outside of the building.

The average outdoor CO₂ concentration at the time of the survey was 342 ppm. The highest CO₂ concentration measured inside the building was 385 ppm, which should not result in indoor air quality complaints.

Building air temperatures measured from 71 to 73°F in the building and relative humidity was between 42 and 43 percent during the testing period. Air temperatures were within the recommended comfort range of 68 to 75°F, and the relative humidity was within the recommended comfort range of between 30 and 60 percent. Low relative humidity is common in Utah during 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.

Camp Williams' facilities personnel maintain the 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)

A chemical inventory of all custodial products used by the armory, along with their associated MSDSs, is maintained in multiple binders located throughout the armory. Each supply room has a master binder for the unit's chemicals. A binder is also located in the kitchen. The chemical inventories and MSDS binders are either arranged by product number or 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 also available.

Copies of chemical inventories from two units and the kitchen are provided in Appendix D.

Recommendation

None

4.6.2 Flammable Storage Cabinets

There is at least one flammable storage cabinet in each of the supply rooms in this facility.

The flammable storage cabinets were inspected and no storage incompatibilities or leaking materials were found. All lockers were in good condition and all doors were noted to close properly.

Recommendation

None

4.7 Safety Training and Record Keeping

Safety documentation could not be located at the Camp Williams Readiness Center.

However, personnel noted that other safety-related regulations were maintained electronically on the Utah Army National Guard Portal (Home page).

The last Safety Council meeting was held on April 4, 2012. In addition, the UTARNG has numerous 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

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

There are three roof-mounted exhaust fans that service the kitchen stove and oven areas. Duct velocity measurements were obtained on all three exhaust hoods. The average duct velocities measured for each hood during this visit were all below 400 fpm. See Appendix F for the ventilation worksheet.

Recommendation

Increase the duct velocities to 500 fpm for the kitchen exhaust fans.

4.9 Kitchen Appliance Sound-Level Measurements

Sound-level measurements were collected from the following kitchen appliances:

- Three exhaust hoods
- Three garbage disposals

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 is a fire alarm in place at this facility. It is maintained by Camp Williams' facilities and maintenance personnel.
3. Fire extinguishers are up to date for both annual and monthly inspections, but the fire suppression system in the kitchen was not current on an annual inspection.

4. There is one emergency eyewash bottle in the mechanical room and one in the boiler room. Both expire in March 2013.
5. Fire evacuation routes are posted in this building, but the drawings are inaccurate.
6. Electrical boxes and panels were inspected and were found to contain no exposed wiring, but an open knockout was found in an electrical panel in the mechanical room.
7. GFCI outlets were inspected and all were found to trip between 5 and 7 milliamps.
8. Personnel noted that the fire-suppression system throughout the armory has had electrical issues and the master control panel is in an alarm mode.
9. Personnel noted that the emergency lighting throughout the facility needed to be evaluated.

Recommendations

1. Inspect the fire-suppression system in the kitchen.
2. Post accurate fire evacuation routes when the direction of travel to an exit is not readily apparent.
3. Provide a knockout plate for the electrical panel in the mechanical room.
4. Inspect the fire-suppression system for the armory and correct the source of the alarm.
5. Evaluate the emergency lighting system to ensure emergency evacuation routes are properly illuminated.

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

December 5, 2012

Date

Industrial Hygiene Program 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 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

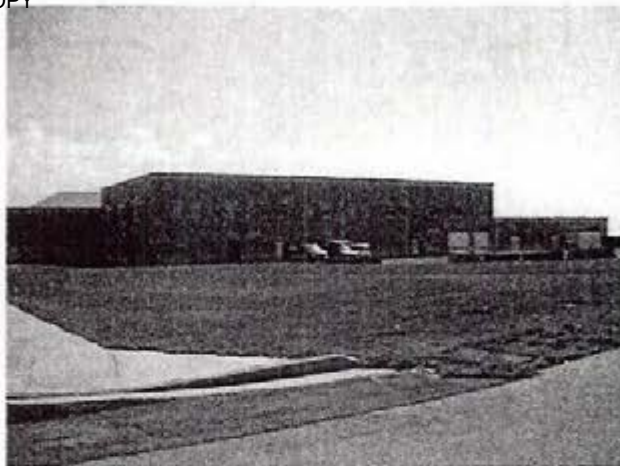
In accordance with the Department of the Army (DA) Pamphlet 40-503, Industrial Hygiene Program (DA PAM 40-503), "The DA mandates the use of ACGIH TLVs when they are more stringent than OSHA regulations or when there is no PEL." The DA defines the resulting exposure limit as the Occupational Exposure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

Appendix C

Photo Log



Photograph 1
Camp Williams Readiness Center, Front, Exterior



Photograph 2
Camp Williams Readiness Center, Side, Exterior



Photograph 3
Camp Williams Readiness Center, General View, Interior



Photograph 4
Camp Williams Readiness Center, 1st Floor



Photograph 5
Camp Williams Readiness Center, 2nd Floor



Photograph 6
The three roof-mounted vents for kitchen



Photograph 7
Water damage on 2nd floor



Photograph 8
Water damage on 1st floor



Photograph 9
Flammable Storage Cabinet closed



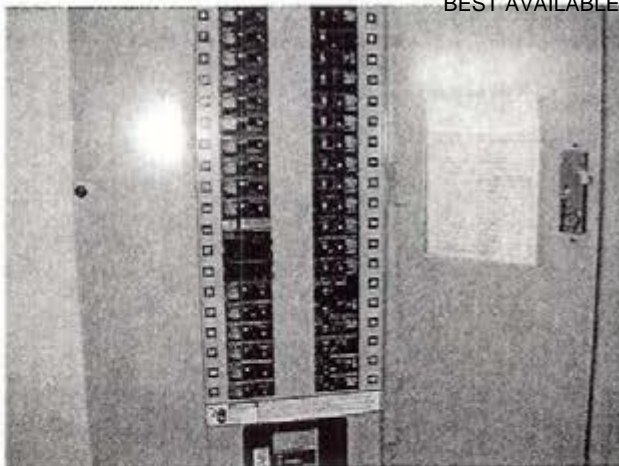
Photograph 10
Flammable Storage Cabinet open



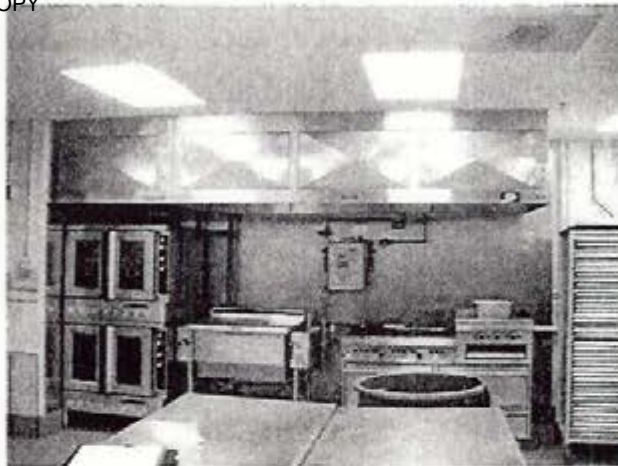
Photograph 11
Flammable Storage Cabinet closed



Photograph 12
Flammable Storage Cabinet open



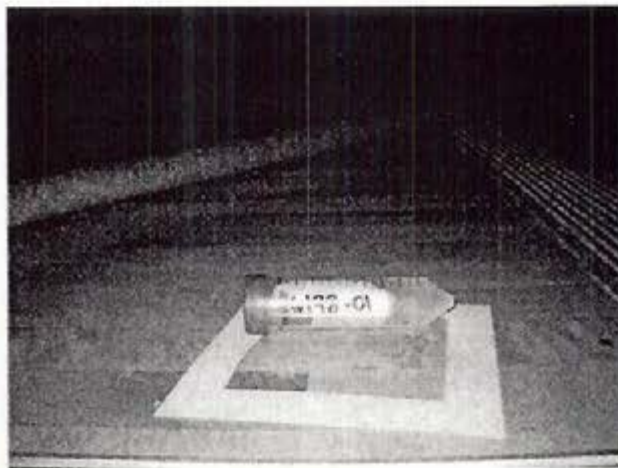
Photograph 13
Open panel in breaker box



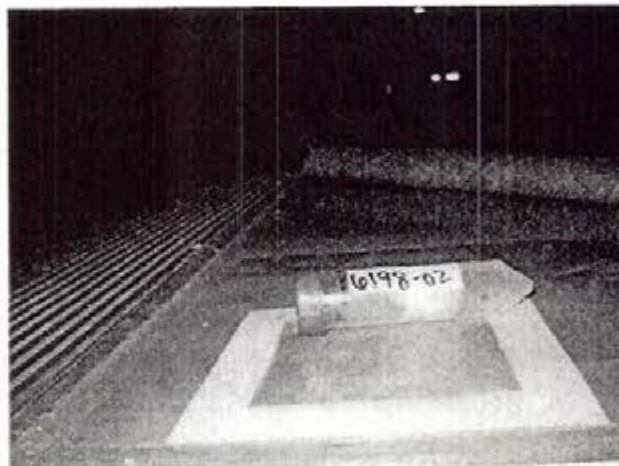
Photograph 14
Hood over stoves and oven



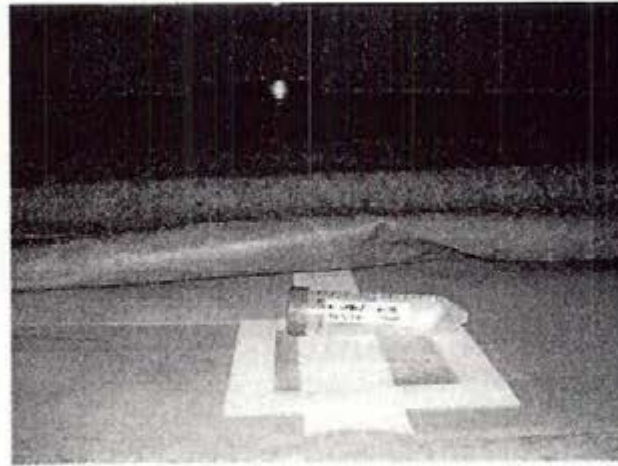
Photograph 15
Hood over flat top



Photograph 16
Location of lead wipe sample number 9198-01



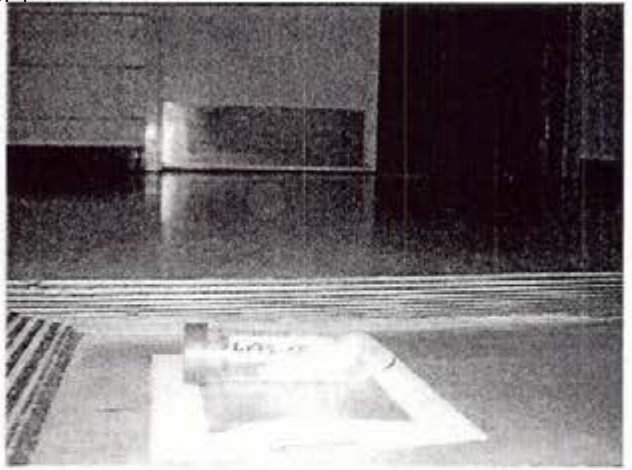
Photograph 17
Location of lead wipe sample number 9198-02



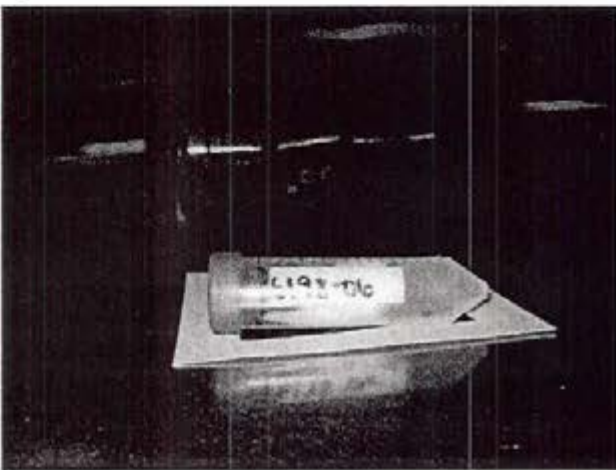
Photograph 18
Location of lead wipe sample number 9198-03



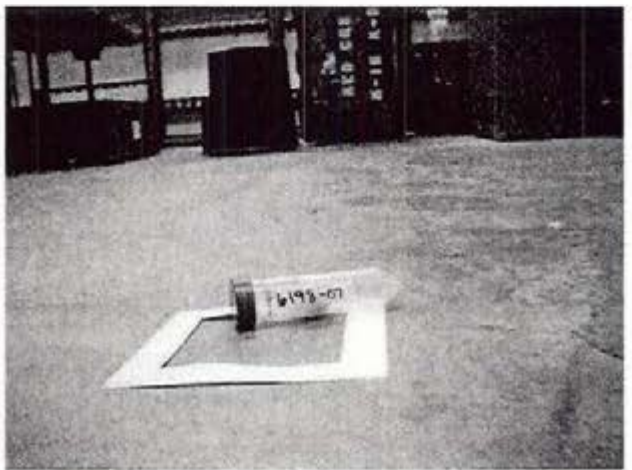
Photograph 19
Location of lead wipe sample number 9198-04



Photograph 20
Location of lead wipe sample number 9198-05



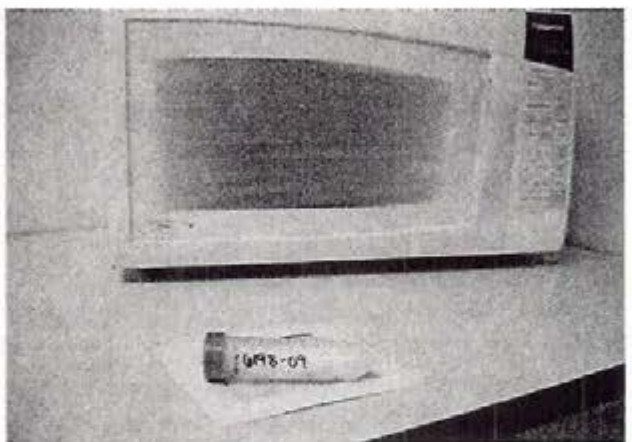
Photograph 21
Location of lead wipe sample number 9198-06



Photograph 22
Location of lead wipe sample number 9198-07



Photograph 23
Location of lead wipe sample number 9198-08



Photograph 24
Location of lead wipe sample number 9198-09

Appendix D
Chemical Inventory

MSDS Table of Contents

<u>Name of Manufacturer</u>	<u>Name of Product</u>
1. 3-M	Troubleshooter
3-M	Carpet Extraction Cleaner (Scotchguard)
2. Airkem (Ecolab)	Asepticare Aerosol
3. Amrep Inc.	Misty Surface Disinfectant
4. Brite Glo	Cleaner with Bleach
5. Buckeye International	1 st Down
6. Capital Soap Product	Scouring Powder
7. Clorox Co.	Softscrub with Bleach
Clorox Co.	409 kitchen Cleaner
8. Colgate-Palmolive Co.	Soft Soap with Moisturizer and Aloe
Colgate-Palmolive Co.	Ajax with Bleach
9. Dial Corp	Dial Antimicrobial Hand Soap
Dial Corp	Dial Complete Foaming Hand Soap
10. DiHoMa Chemical Mfgr	Porcelain Cleaning Solution
11. Drackett Professionals (SC Johnson)	Pledge
12. Ecolab	Clinging Lime-A-Way
13. Fitzpatrick Bros.	Scouring Powder with Bleach
14. Hylon-Koburn Chem. Ind. (HY-KO)	Conc. Glass Cleaner
Hylon-Koburn Chem. Ind.	Toilet Bowl - Urinal Cleaner
15. Johnson & Johnson	Cidex Activated Dialdehyde Solution
Johnson & Johnson	Isopropyl Alcohol
1a. Johnson Wax Professionals	Showplace
Johnson Wax Professionals	Floor Polish
2a. Klean Strip (W.M. Barr)	S-L-X Denatured Alcohol (ACE Denatured Alcohol)
3a. Krylon Product Group	Fluorescent Paint (Neon)
4a. LHB Industries	Refresh, Power Puffer
LHB Industries	Corrosion Preventive Compound (So Sure)
Lighthouse for the Blind	Glass Cleaner, Regular
Lighthouse for the Blind	Anti-Fogging Glass Cleaner (Skill Craft)
5a. Medical Chemical Corp.	Wavicide-01
6a. Pelton and Crane	Omni Cleaner
7a. Ritter Medical Products (Miami Products & Chemical Co.)	Speed Clean
8a. Simple Green	Simple Green
9a. Spray Way	Glass Cleaner
10a. Waxie	Spotlight
11a. WD-40 Co.	WD-40
12a. Zep	Delight Hand Cleaner - Liquid
Zep	Zepventure Cleaner meter mists
Zep	Powerhouse ZEP 40 - Glass
15a. Old MSDS Sheets	

13a. Skillcraft

Pine-Oil

*-on Back

Industrial Enamel Paint
Turpentine
Permethrin Anthropod Repellent
Tan Obliterating compound (so sure)
HSM Shredder oil
Fellowes - Powershred shredder Lubricant
Acarosan Dust mite control
Penetrating oil/Rust solvent
Insect Repellent (Lotion)
StatFree spray
Break-Free CLP (liquid)
Soft Scrub® with Bleach cleanser

UTAH ARMY NATIONAL GUARD

HHC 204th MEB

17800 South Camp Williams Road

Riverton, Utah 84065-4999

UT-204-MEB

18 OCTOBER 2010

MEMORANDUM FOR RECORD

SUBJECT: Flammable Cabinet Inventory

1. The Flammable cabinet is located in the 204th MEB supply room was inventoried on 10 Oct 2011 the flammable cabinet contained the following items:

Item #	National stock number	Noun	Unit of issues
1	6850-01-186-0859	Marker magic	BT
2		Clorox Ready mop	EA
3	6840-00-721-605	Deodarant, general purpose	CN
4		Metal conditioner	CN
5		Gordon's foot spray	CN
6		Tiactin Antifungal spray	CN
7		Desenex Antifungal spray	BT
8		Gold bond body powder	BT
9		GOO be gone pen	EA
10		Pre-moistened Equipment wipes	CN
11		Clorox bleach	BT
12		Isopropanol	BT
13	6840-01-067-2137	Insecticide, D-Trans Allethrin	CN
14	7830-00-935-3794	Plastic polish	BT
15	8040-00-171-1535	3M 6065 spray adhesive	CN
16	7930-00-357-7386	Detergent, general purpose	BT
17	6840-01-278-1336	Insect repellent, clothing app.	BT
18		Lub. General purpose	CN
19	8010-01-331-6107	Type I black spray paint	CN
20		Endust	CN
21		Power duster	CN
22		Paint markers	PG
23		Laundry soap	BT
24		Primer	Gal
25		White paint	Gal
26		Liquid nails	Tube
27	8520-01-490-7358	Hand sanitizer	BT
28	7490-01-459-8264	Sharps decont. oil	BT
29		Harco disinfectant - FPMK	PT

Non-Responsive

Supply, Nco

151 Kitchen & Custodial Closet

MATERIAL SAFETY DATA SHEETS

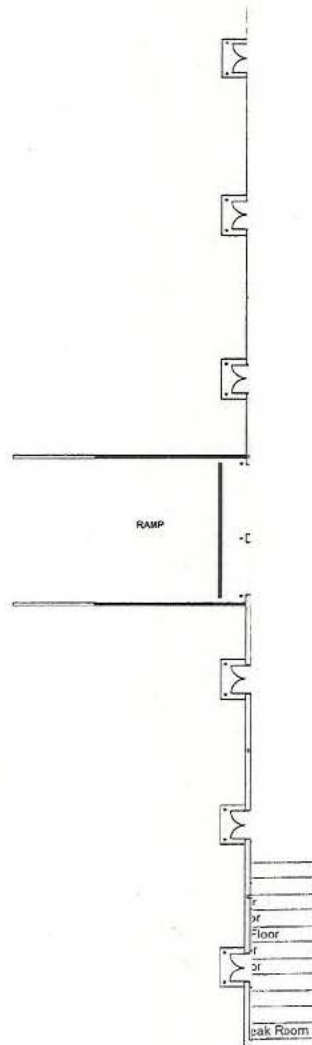
Index

AEROBLUE Foam Hand & Body Shampoo	Tab 21
Disinfectant, Detergent, General Purpose (Pine Oil)	Tab 22
AFELAB Lemon Q Disinfectant	Tab 23
Liquid Alive Odor Digester	Tab 24
Dyna-San Lime Remover	Tab 25
Oasis Pro 43G Glass Cleaner (924687)	Tab 26
Digiclean Anti-Bac Foam (924410)	Tab 27
Digisante Foam Hand Sanitizer (924680)	Tab 28
Stainless Steel Cleaner & Polish	Tab 29
Oasis Pro 10 Heavy Duty All Purpose Degreaser Cleaner (903723)	Tab 30
Grease Stop It Has No Grease	Tab 31

Appendix E

**Floor Plan/IAQ - Temp, RH, & CO₂ Monitoring
and Lead Wipe Sample Locations**

S:\12 Projects\...12U-16198 IHSW - Camp Williams Readiness Center\Drawings\12U-16198 dwg. 1 ft. 10/15/2012 1:38:30 PM. kethf, ANSI full bleed B (17.00 x 11.00 inches)



Camp Williams Readiness Center
17800 South Camp Williams Road
Riverton, Utah

Lead Wipe & Indoor Air Quality Sample Locations - First Floor



PROJECT No: 12U-16198

SHEET: 2 of 3

DRAWN BY: Non-Responsive

DATE: 10-10-2012

REVISED BY:

DATE:

REVIEWED BY:

DATE:

S:\12 Projects\12U-16198 IHSW - Camp Williams Readiness Center\Drawings\12U-16198.dwg, 2 fl., 10/15/2012 1:38:54 PM, kethr, ANSI full bleed B (17.0 x 11.00 inches)



Camp Williams Readiness Center
17800 South Camp Williams Road
Riverton, Utah

Lead Wipe & Indoor Air Quality Sample Locations - Second Floor

2nd Floor
1st Floor
Basement
Roof
Attic
Garage
Driveway
Backyard
Front Yard
Street
Neighborhood
City
State
Country
World



PROJECT No: 12U-16198
SHEET: 3 of 3
DRAWN BY: [Redacted]
DATE: 10-10-2012
REVISED BY:
DATE:
REVIEWED BY:
DATE:

BEST AVAILABLE COPY

Kitchen Stove/Oven Exhaust Duct Velocity Estimate For
EF-3, Griddle area

Face Dimensions =	45	X	3	Inches
Face Area =	0.94	ft ²		
Face Vel. Measurement Points				
1	3	5	7	9
2	4	6	8	10
				11
				12
Face Velocity Measurements				
Point	Flow rate (fpm)			
1	820			
2	720			
3	785			
4	700			
5	740			
6	750			
7	735			
8	750			
9	721			
10	735			
11	725			
12	720			
Ave Flow Rate	742 fpm			
Area of Face (A)	0.94 ft ²			
Q = A x V				
Q =	695 CFM			
Exhaust Duct Diameter =	25 inches			
Area of Roof Top Exhaust Duct =	4.17 ft ²			
Estimated Duct Velocity =	167 fpm			

BEST AVAILABLE COPY

Kitchen Stove/Oven Exhaust Duct Velocity Estimate For EF-4, ovens

Face Dimensions =	45	X	3	Inches
Face Area =	0.94	ft ²		
Face Vel. Measurement Points				
1	3	5	7	9
2	4	6	8	10
11				
12				
Face Velocity Measurements				
Point	Flow rate (fpm)			
1	550			
2	555			
3	630			
4	640			
5	600			
6	580			
7	580			
8	490			
9	480			
10	515			
11	520			
12	520			
Ave Flow Rate	555	fpm		
Area of Face (A)	0.94	ft ²		
Q = A x V				
Q =	520	CFM		
Exhaust Duct Diameter =	25	inches		
Area of Roof Top Exhaust Duct =	4.17	ft ²		
Estimated Duct Velocity =	125	fpm		