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**ARMY NATIONAL GUARD  
INDUSTRIAL HYGIENE – SOUTHWEST**

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## **Industrial Hygiene Site Assistance Visit**

### **Belgrade Armory Indoor Firing Range (IFR)**

**350 Airport Road  
Belgrade, MT 59714**

09 Oct 2012

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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

22 October 2013

MEMORANDUM THRU **Non-Responsive** DSS, 1956 Mt. Majo St., Room 1009, Helena, MT 59636

FOR Commander Belgrade Armory Indoor Firing Range (IFR) at 350 Airport Rd., Belgrade, MT 59714

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (SAV) for the Belgrade Armory Indoor Firing Range (IFR) at 350 Airport Rd., Belgrade, MT on 09 OCT 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 Belgrade Armory Indoor Firing Range (IFR) at 350 Airport Rd., Belgrade, MT on 09 OCT 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. Record fire extinguishers inspections which should be done monthly and annually, with documentation on extinguisher tag. (para. 5.6.1) (RAC 4)



ARNG-CSG-P

**SUBJECT:** Executive Summary for Industrial Hygiene Site Assistance Visit (SAV) for the Belgrade Armory Indoor Firing Range (IFR) at 350 Airport Rd., Belgrade, MT on 09 OCT 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 Montana Army National Guard Industrial Hygiene, Occupational Health and Safety Office for final review and approval (signature).

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

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

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

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

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

**Non-Responsive**

**Non-Responsive**



NGB, IHSW, CIV  
Industrial Hygiene

## ***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.

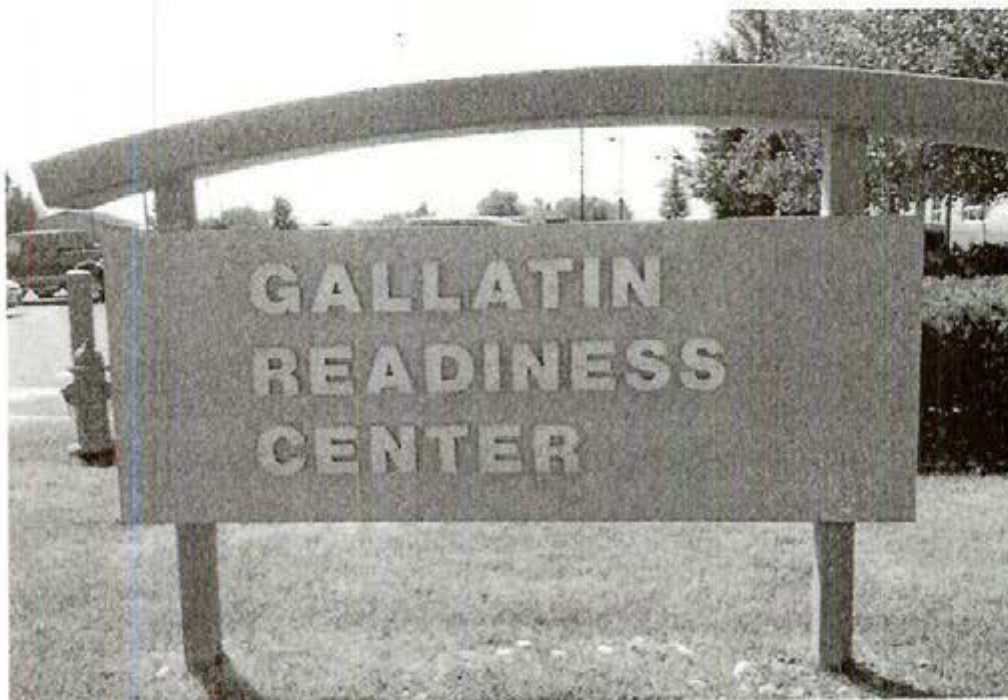
**NOTE:** Clearance sampling/testing is to be accomplished by certified personnel after these cleanup procedures are followed. If the area is an average Armory, occupied by adults only, for which you are cleaning and **is not a Converted IFR space**, you may continue to utilize the Armory space before 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.**



**Industrial Hygiene Site Assistance Visit  
Belgrade Indoor Firing Range  
Belgrade, Montana  
13 August 2013**





INDUSTRIAL HYGIENE SITE ASSISTANCE VISIT (IHS AV)

BELGRADE INDOOR FIRING RANGE (IFR)  
350 AIRPORT ROAD  
BELGRADE, MONTANA 59714

August 13, 2013

*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.IH1449.14

Non-Responsive

Enviro

Non-Responsive

Non-Responsive

*Senior Industrial Hygienist*

Non-Responsive

*Program Manager*

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## EXECUTIVE SUMMARY

On August 13, 2013, **Non-Responsive** Associate Industrial Hygienist, and **Non-Responsive** Certified Industrial Hygienist (CIH) of Network Environmental Systems, Inc. (NES), conducted an Industrial Hygiene Site Assistance Visit (IHS AV) at the Belgrade Indoor Firing Range (IFR), located at 350 Airport Road in Belgrade, Montana. The primary point of contact (POC) for information gathered during this survey was **Non-Responsive** who can be reached by phone at (406) 324-5017 or by email at **Non-Responsive**.

The objectives of this IHS AV were to perform the following activities:

- Evaluate work processes conducted within the facility;
- Collect metal surface wipe samples;
- Assess the IFR;
- Measure illumination levels;
- Collect indoor air quality data;
- Evaluate existing safety hazards; and
- Review safety policies/programs, training, and record keeping.

Significant findings for this IHS AV can be found in the Industrial Hygiene Southwest – 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 task descriptions, work space locations, regulatory requirements, and additional recommendations.

Appendices may be left blank where information has been requested from the facility and not yet received.

Commendables: **Non-Responsive** was very helpful during this IHS AV assisting NES while SFC Hunt was offsite.

## 1.0 INTRODUCTION

On August 13, 2013, **Non-Responsive** associate Industrial Hygienist, and **Non-Responsive** Certified Industrial Hygienist (CIH) of Network Environmental Systems, Inc. (NES), conducted an Industrial Hygiene Site Assistance Visit (IHS AV) at the Belgrade Indoor Firing Range (IFR), located at 350 Airport Road in Belgrade, Montana. The primary point of contact (POC) for information gathered during this survey was **Non-Responsive** who can be reached by phone at (406) 324-5017 or by email at **Non-Responsive**.

## 1.1 Objectives

The primary objective of the IHS AV was to conduct hazard evaluations of work processes and assess the IFR. 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 (Reference Appendix M – Hazard Assessments). This IHS AV 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:

- Evaluate work processes conducted within the facility;
- Collect metal surface wipe samples;
- Assess the IFR;
- Measure illumination levels;
- Collect indoor air quality data;
- Evaluate existing safety hazards; and
- Review safety policies/programs, training, and record keeping.

## 2.0 PROCESS DESCRIPTION

The Belgrade IFR is located within the Gallatin Readiness Center. The primary unit assigned to the Readiness Center is the HHC 1-163<sup>rd</sup> CAV (CAB), Unit Identification Code [REDACTED] Non-Responsive. Veterans' Assistance and Recruit Training Company also occupy the building. Twenty two full-time employees are assigned to the Gallatin Readiness Center. There are 17 active guard reserves; 1 federal technician; and 4 civilian contractors. The facility work schedule is Monday through Friday, 0800 to 1700 and one weekend per month for drill. The IFR is not actively used as a live fire range, but rather is currently used for laser sighting (Beamhit) tactical training and as storage space.



### 3.0 METHODS

#### 3.1 Personal Breathing Zone Air Sampling

Personal breathing zone air sampling was not conducted during the IHS AV.

#### 3.2 Ventilation

The IFR has a plenum wall where air is blown into the space. The air velocity at the 5 shooting lanes was evaluated during the IHS AV. Air velocity measurements were obtained using a TSI VelociCalc Plus, model 8386A. A copy of the annual calibration certificate for this instrument is located in Appendix H.

#### 3.3 Lead Wipe Sampling

Lead wipe samples were collected from horizontal work and floor surfaces in various locations throughout the IFR. Ghost Wipe™ brand wipes were used by wiping a one (1) square foot (ft<sup>2</sup>) template. The collected wipe samples were placed in clean and labeled plastic centrifuge tubes and promptly sealed upon collection. 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 E1792, Standard Specification for Wipe Sampling Materials for Lead in Surface Dust.

The US Department of Housing and Urban Development (HUD), recommends a 40 micrograms per square foot (µg/ft<sup>2</sup>) 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. This criterion is applied to any areas of a facility that may be used by the public for nonmilitary functions. These areas include: converted indoor firing ranges; drill halls; locker rooms; class rooms; and fitness areas. Areas of a facility which are not specifically listed are expected to be, "maintained as free as practicable of accumulations of lead," as specified by the Occupational Safety & Health Administration (OSHA) in 29 CFR 1910.1025 (h)(1). The Army National Guard has determined lead concentrations less than 200 µg/ft<sup>2</sup> is practicable for maintenance type facilities. This criterion is applied to areas such as maintenance bays, and tool rooms, which are not routinely accessible to the general public.

#### 3.4 Illumination

Illumination measurements were taken throughout the Belgrade IFR using a Konica Minolta light meter, model TL-1. To provide information on the overall lighting conditions in the

IFR, 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.

### 3.5 Indoor Air Quality

Carbon dioxide (CO<sub>2</sub>), temperature, and relative humidity were measured using a TSI IAQ Calc, model 7545. Carbon dioxide 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 CO<sub>2</sub>, water vapor, and other bio effluents. The American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE), in their Standard 62.1-2010, *Ventilation for Acceptable Air Quality*, recommend maintaining CO<sub>2</sub> below a concentration that is 700 parts per million (700 ppm) above outdoor levels. Outside CO<sub>2</sub> concentrations typically range from 300 to 400 ppm. Providing sufficient ventilation to maintain steady-state CO<sub>2</sub> 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). 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
Konica Minolta Illuminance Meter	TL-1	90480719	05/2013
TSI VelociCalc Plus	8386A	54110581	03/2013
TSI IAQ-Calc	7545	T75450846008	11/2012

Please see Appendix H for a complete inventory of calibration certificates that may have been used during this IHSAV.

### 3.7 Quality Assurance

NES 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; and,
- Calibration of instruments, including field calibration via manufacturers' recommended procedures and routine (typically annual) off-site calibration of equipment via certified third parties.

#### **4.0 OBSERVATIONS AND RECOMMENDATIONS**

The Indoor Firing Range Inspection Checklist provided by the Army National Guard was used extensively in the preparation of this section. A completed copy of the Checklist can be found in Appendix Q. In general, several aspects of the IFR were found to be in non-compliance with existing standards for IFRs. However, the IFR is not currently used as a live fire range. Items of non-compliance with IFR standards are provided in the event the facility decides to utilize the space as an operational IFR in the future. In such instance, the items of non-compliance would need to be addressed prior to operation of the IFR.

#### **4.1 Physical Safety Inspection**

##### **4.1.1 Building Envelope**

The building envelope was reviewed as part of the Indoor Firing Range Inspection Checklist established by the Army National Guard. Each of the five firing lanes was measured and determined to be less than four feet wide as required. The width of the lanes ranged from 46 to 47 ½ inches. Pipes, conduits and walls are sealed and baffled or covered to prevent the migration of lead and ricochets. Open floor drains were not observed in the Belgrade IFR. There were no carpets, drapes or fiber-like materials found in the range. Excluding the access door behind the plenum wall, there are no doors or windows in front of the firing line. There are no protruding edges on the floor, walls or ceiling, and the interior mortar joints are flush with the interior surface. The walls and roof are comprised of cement and cement mortar unit block which provides ballistic security. The plenum wall was supported and thick enough to avoid flexing of the wall. The primary and secondary entrance doors to the range are weather-stripped.

##### **4.1.2 Range Lighting**

Illumination was measured at the targets and firing lines. The lighting at the targets was found to range between 103.0 and 240 foot candles (FC). The lighting at the firing lines ranged between 26.2 and 435.9 FC. Lighting at the firing lines did not provide the required minimum illumination. A bank of lights, approximately 25 feet down range, was not functioning at the time of the IHS AV. Light fixtures are protected with baffles and are installed in a manner to not obstruct the shooter's view down range. Downrange lighting begins at approximately 18 feet from the firing line, and ends approximately 8 feet from the target line. Emergency lights are provided behind the firing line and are in working condition. Exit lights are installed and were functional. No electrical hazards were observed during the IHS AV.



#### 4.1.3 Bullet Traps

The bullet trap consists of ½ inch rubber pieces covered with ¼ inch thick rubber mats. The bullet trap appears to be of commercial design and is permanently installed.

#### 4.1.4 Targets and Target Carriers

The manual target retrieval system was functioning properly at the time of the IHSAV. The retrieval system is constructed in a manner as to minimize flat surfaces exposed to the firing line. It is unknown as to what types of targets are used in the Belgrade IFR as the range is not actively used.

#### 4.1.5 Range Use

The IFR is currently used for laser sighting (Beamhit) and as storage space. Excess office furniture, and building supplies (particle board and 2x4's) were observed downrange and behind the shooters' area at the plenum wall. Eight cases of Beamhit equipment and tables needed to support Beamhit activities have been brought into the range. It is not known if additional clothing is brought into the range or if personnel are allowed in the plenum. Safety signage posted at the doorway indicates the following rounds are acceptable for use: 5.56 mm; 9 mm; and .22 caliber. Muzzle velocities and energies are to be 3,600 feet per second and 3,000 feet per pound, respectively. The ventilation system is interlocked with range lighting. Ventilation starts approximately five minutes after the lights are turned on. It is unknown if individuals other than maintenance and inspection personnel are allowed to walk downrange. An ABC-type hand-held fire extinguisher is located in a recessed cabinet next to the IFR door.

#### 4.1.6 Range Maintenance

Brooms were not located within the range. Dry sweeping is performed infrequently in the range. [Non-Responsive] is the facility's range custodian (range control officer). [Non-Responsive] was unable to be interviewed, regarding training and responsibilities, as he was offsite.

#### 4.1.7 Personal Protective Equipment (PPE)

It is unknown if individuals utilizing the range are required to wear approved eye and hearing protection as the range is not actively used for firing of weapons. Safety signage posted at the doorway indicates ANSI approved eye and hearing protection is required.



#### **4.1.8 Posting of Signs**

The Belgrade IFR has signs posted at the entrance pertaining to the range. The signage identifies the range as a noise and lead hazard area. Children under the age of six, pregnant individuals or those who are breast feeding are not permitted in the range. The signage includes the following prohibitions: eating; drinking; smoking; dry sweeping; furniture and items for storage. The posted requirements include: wash hands and face immediately after firing; hearing; eye protection. The signage also specifies that only the following types of ammunition are permitted: 5.56 mm; 9 mm; and .22 caliber. Please see Appendix C, Photo Log, for pictures of the safety signage described above.

Each of the firing lanes is numbered at the firing line and at the bullet trap. A warning sign indicates that the range is in use and is activated when the ventilation system is activated. Safety signage is posted on the access door to the bullet trap. The signage includes: authorized personnel only; and warning do not enter while the range is in use.

#### **4.1.9 Range SOP**

The Belgrade IFR is inactive and is not used as a firing range. This facility did not have a range SOP readily available. Staff members were not aware of a range SOP.

#### **4.1.10 Record Keeping**

The Belgrade IFR is not actively used as a firing range. A visitors log is not maintained for the IFR. Copies of previous inspections for the IFR were not available. An OSHA compliance program was in place at the time of the IHSAB. SFC Hunt is designated as the range safety officer.

### **4.2 Ventilation Inspection**

The ventilation system for the range was operational at the time of the IHSAB. The exhaust vents for the range ventilation system is approximately four feet away from the open window of the exercise room. Being the range is not active, it is not expected to be exhausting any lead from the IFR. A photo of the exhaust vents and open window is available in Appendix C. Make-up air is introduced into the range from behind the shooters. The air is exhausted at or behind the bullet trap. The ventilation system uses a single speed fan. The range was under negative pressure as identified by the door being difficult to open. The power system is designed so that the make-up and exhaust fans are electronically interlocked. NES staff was unable to observe if the exhaust fan starts first followed by the make-up fan. A smoke test was performed at each of the firing lanes. The smoke flowed down range in a laminar manner.

Air flow velocity measurements were collected in each firing lane. Each lane exceeded the 50 feet per minute minimum velocity requirement. Air flow measurements were also collected from the vents at the entrance to the plenum wall. Measurements exceeded 600 feet per minute. Additional measurements were collected from where air exits through the holes of the plenum wall, the velocities measured were less than 300 feet per minute.

#### **4.3 Recommendations**

The Belgrade IFR was found to have several items that were not compliant with existing IFR standards. The IFR should not be used as an active indoor firing range until each item of non-compliance has been sufficiently addressed. A complete list of items that must be addressed before the IFR can be utilized as an active IFR is provided in Appendix N, Recommendations.



## 5.0 SAMPLING RESULTS

### 5.1 Personal Breathing Zone Sampling

Personal breathing zone air sampling was not conducted during the ISHAV.

### 5.2 Ventilation

Air flow velocities were collected from each firing lane to ensure a minimum flow velocity of 50 feet per minute (FPM). Air flow velocities were measured and found to range 50 – 89 FPM, exceeding the 50 FPM minimum requirement. The velocity rates for each lane are available below.

Lane #	1	2	3	4	5
Shooter Position Flow Rate	> 50 FPM	> 50 FPM	> 50 FPM	> 50 FPM	> 50 FPM

### 5.3 Lead Wipe Sampling

A total of six (6) lead wipe samples were collected at the Belgrade IFR to be analyzed in accordance with NIOSH Method 7300, modified for Ghost Wipes™. The analytical results are summarized in the table below. Laboratory results are attached in Appendix J.

Analytical results for samples which exceed the acceptable concentration are shown in bold. None of the samples were found to exceed the ARNG standard of  $200\mu\text{g}/\text{ft}^2$ . Results indicate that the range is safe to be used for the intended re-purposed activities.

Sample Number	Sample Area	Sample Location	Results ( $\mu\text{g}/\text{ft}^2$ )	ARNG ( $\mu\text{g}/\text{ft}^2$ )
081313-BLGDIFR-01	Lane #2	Rubber mat at bullet trap	110	$\leq 200$
081313-BLGDIFR-02	Lane #5	Floor, 22 feet from bullet trap	73	$\leq 200$
081313-BLGDIFR-03	Lane #2	Floor, 35 feet from bullet trap	25	$\leq 200$
081313-BLGDIFR-04	Lane #5	Shooter's table	70	$\leq 200$
081313-BLGDIFR-05	Primary entrance door to IFR	Floor	4.8	$\leq 200$
081313-BLGDIFR-06	Bullet trap	Exercise mat	7.3	$\leq 200$

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



## 5.4 Illumination

Illumination levels were measured throughout the IFR. Measurements were collected in foot-candles (FC). In general, the measurements were taken at task surface level. Measurements not taken on a desk or workbench were taken at waist level. The illumination measurements were compared with IFR standards. In general, 100 FC is the minimum lighting requirements for the targets and 30 FC is required in all other areas of the IFR.

Lighting at the targets ranged 103 to 240 FC. The illumination at the firing lines ranged from 26.2 to 35.9 FC. See Appendix E for a table of illumination measurements.

## 5.5 Indoor Air Quality

The average outdoor carbon dioxide concentration was measured to be 190 parts per million (ppm); therefore, the maximum indoor CO<sub>2</sub> concentration recommended by ASHRAE would be 890 ppm. The CO<sub>2</sub> concentrations from inside the IFR ranged between 252 to 276 ppm, within the acceptable limit.

ASHRAE recommends maintaining temperatures between 68 and 75°F and relative humidity between 30% and 60% relative humidity to minimize the growth of allergenic or pathogenic organisms. Temperatures inside the IFR ranged between 80.1 and 81.6 °F. Relative humidity ranged from 31.4 to 33.6%. The rooms measured were above the ASHRAE recommended range for temperature. The facility was within the recommended relative humidity range. A table of the sample locations and corresponding IAQ measurements is available in Appendix E.

## 5.6 Other Observations

1. Annual and monthly inspections of the range fire extinguisher were out of date. The fire extinguisher was last serviced in August 2012.
2. Water damage was observed in ceiling tiles along the northern side of the ceiling adjacent to the bullet trap and on the western baffle on the northern side.
3. Water intrusion was observed at the base of the north wall of the IFR.

## 6.0 PROJECT LIMITATIONS

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

The 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.

## 7.0 PROJECT APPROVAL

This IHSAV was reviewed and approved by:

**Non-Responsive**

*Senior Industrial Hygienist*

October 23, 2013

Date

**Non-Responsive**

November 1, 2013

Date

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

PHOTO LOG  
BELGRADE INDOOR FIRING RANGE  
BELGRADE, MONTANA  
AUGUST 13, 2013

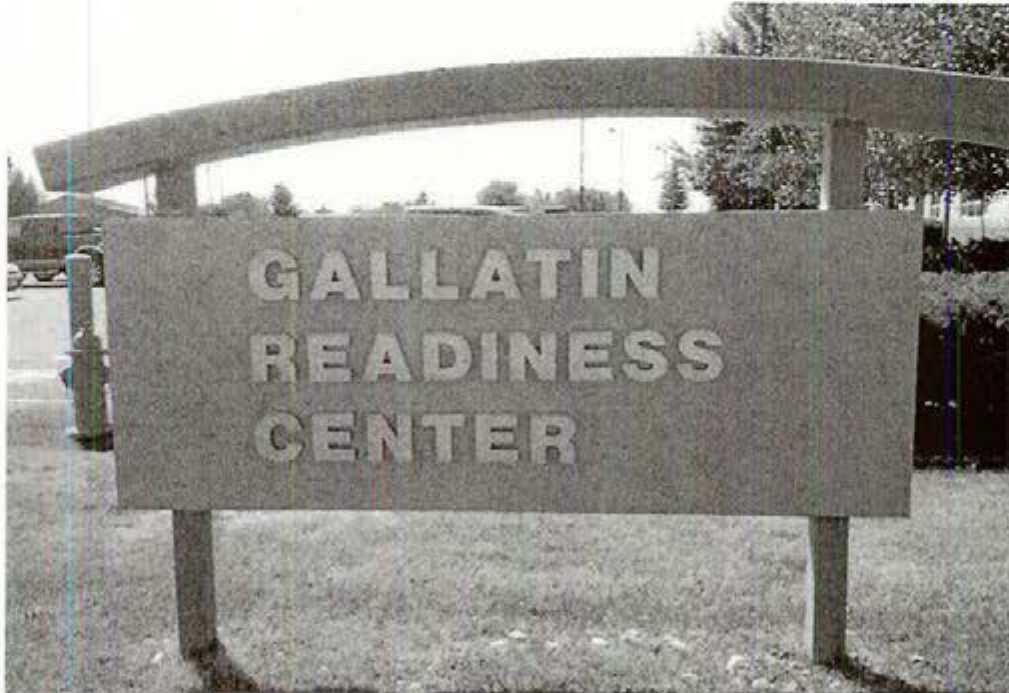


Photo 1: Facility signage for the Belgrade Indoor Firing Range (IFR).

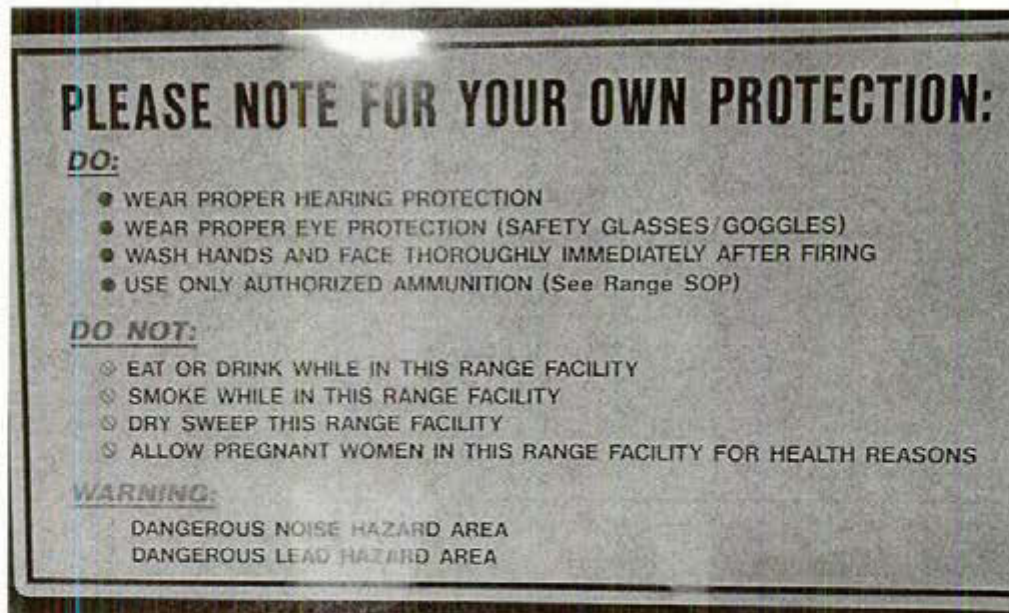


Photo 2: Facility safety signage for the IFR at the primary door.



PHOTO LOG  
BELGRADE INDOOR FIRING RANGE  
BELGRADE, MONTANA  
AUGUST 13, 2013

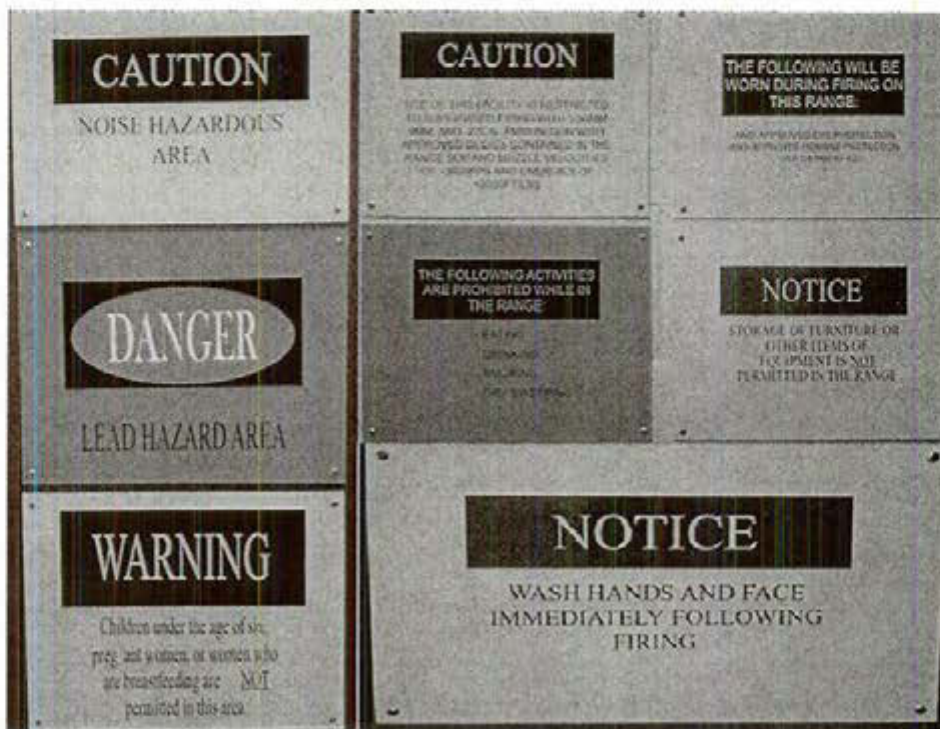


Photo 3: Additional facility safety signage for the IFR at the secondary IRF door.

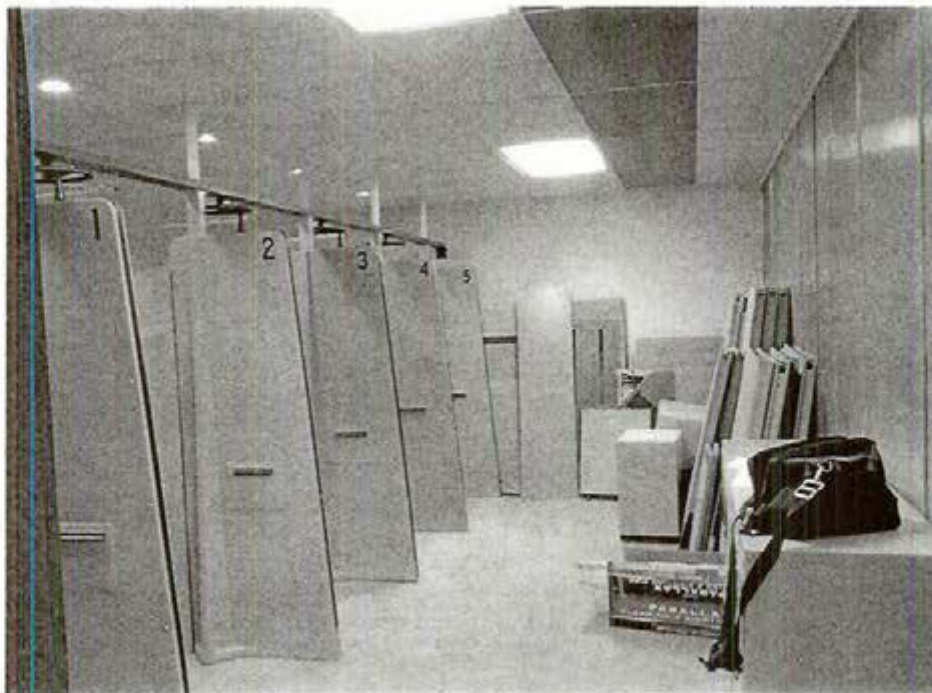


Photo 4: Area behind the firing line with storage.

PHOTO LOG  
BELGRADE INDOOR FIRING RANGE  
BELGRADE, MONTANA  
AUGUST 13, 2013



Photo 5: Firing lane #1, view downrange, Beamhit equipment and stored items.

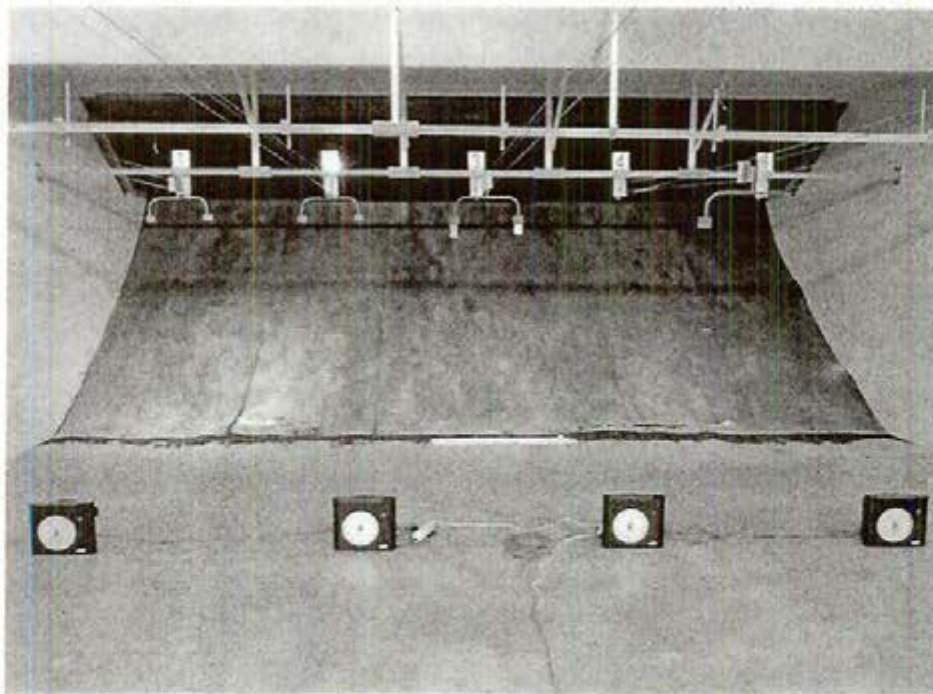
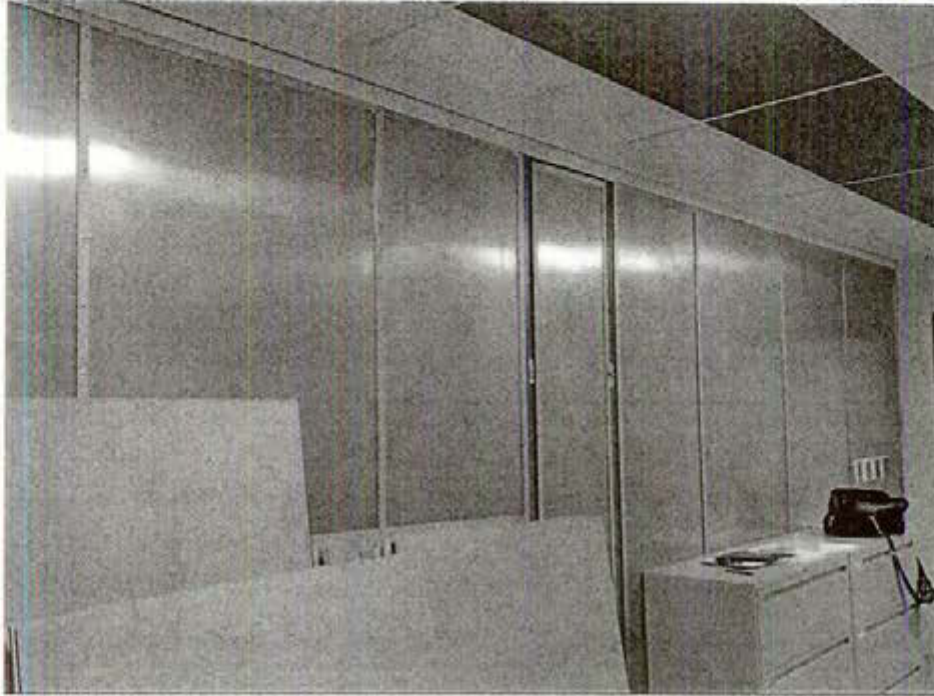


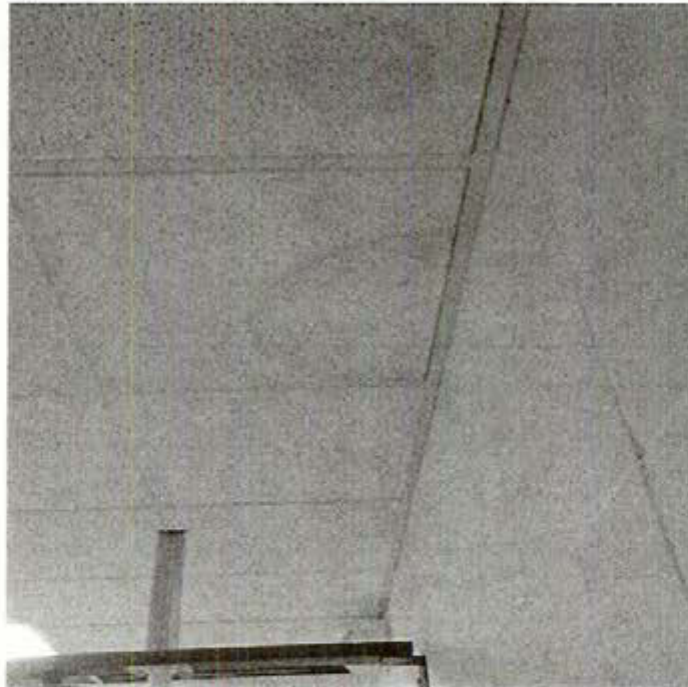
Photo 6: Bullet trap, Beamhit equipment in the foreground.



**PHOTO LOG  
BELGRADE INDOOR FIRING RANGE  
BELGRADE, MONTANA  
AUGUST 13, 2013**



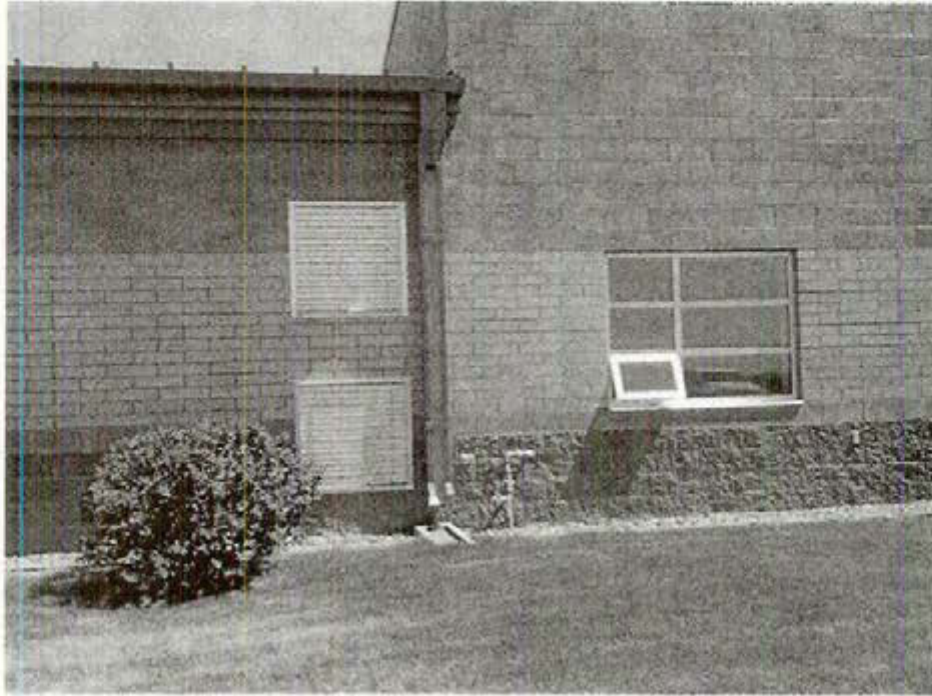
**Photo 7:** Plenum wall, access panel in middle, and stored office furniture.



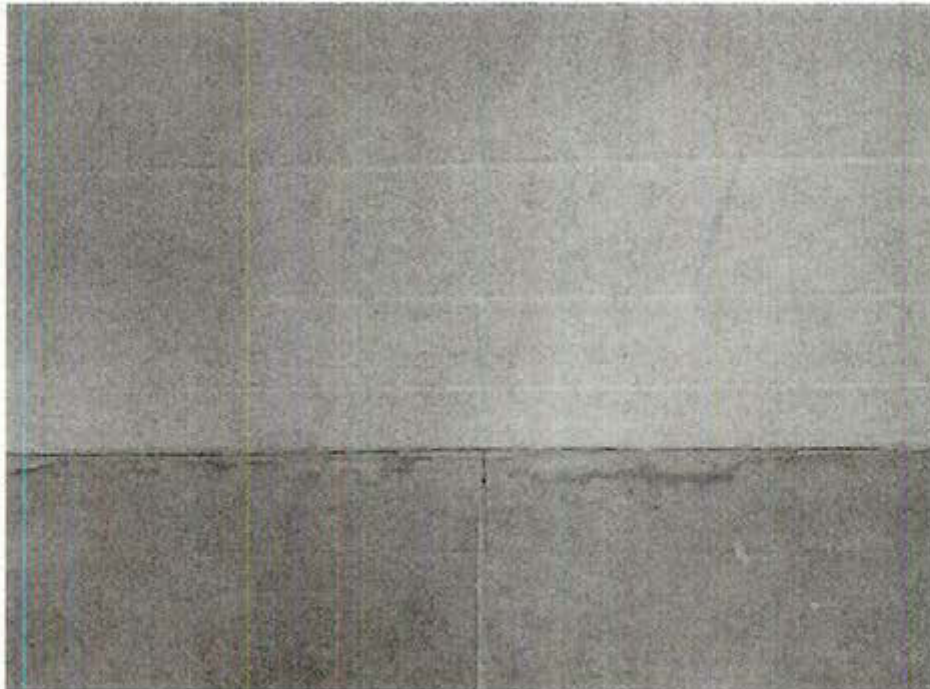
**Photo 8:** Water damaged ceiling tiles.



**PHOTO LOG  
BELGRADE INDOOR FIRING RANGE  
BELGRADE, MONTANA  
AUGUST 13, 2013**

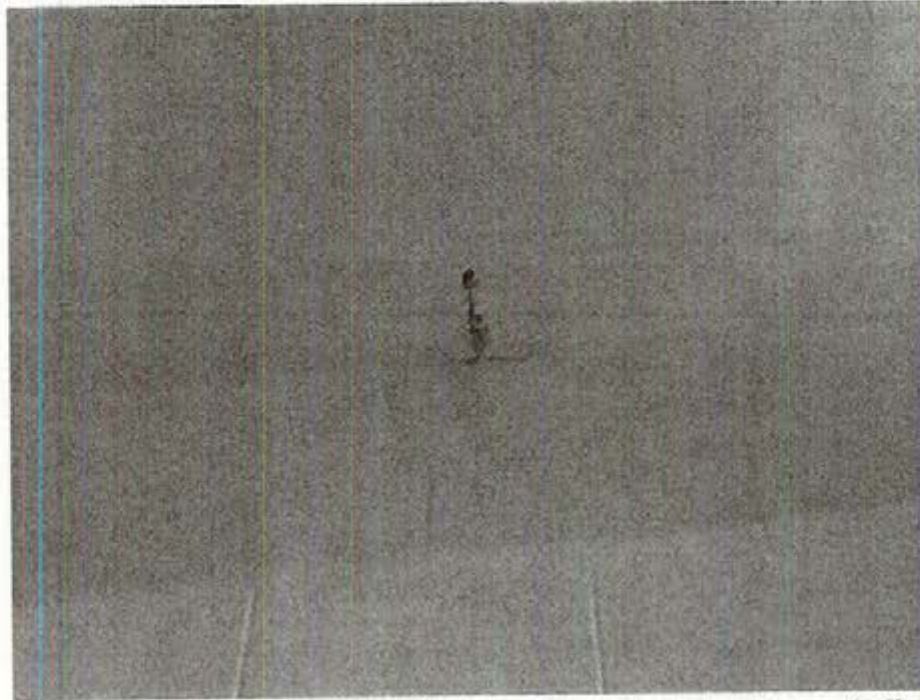


**Photo 11:** IFR exhaust vents located approximately 4 feet from the open windows of the exercise room.

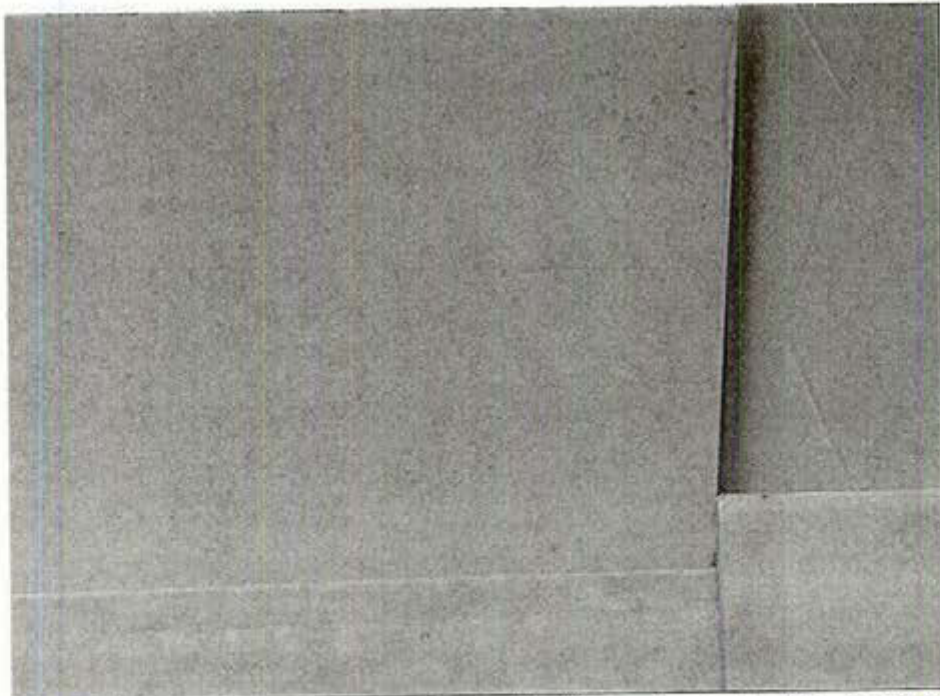


**Photo 12:** Water intrusion staining at base of north wall.

**PHOTO LOG  
BELGRADE INDOOR FIRING RANGE  
BELGRADE, MONTANA  
AUGUST 13, 2013**



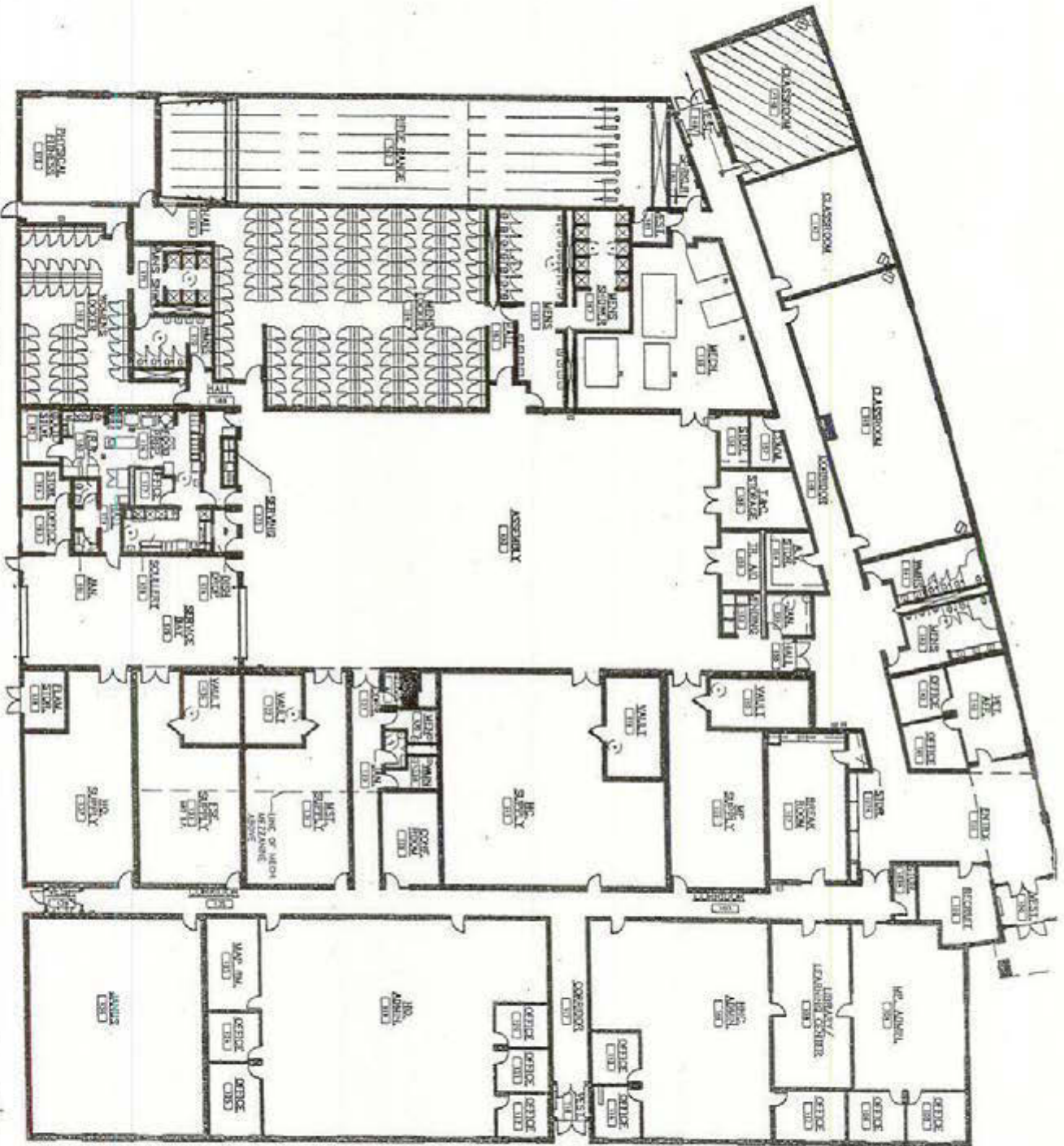
**Photo 13:** Water intrusion staining at ceiling of north wall, near bullet trap.



**Photo 14:** Rust spots on western most baffle on the north side, result of water intrusion.



EVACUATION PLAN  
NO SCALE



# IAQ MEASUREMENTS

BELGRADE IFR  
BELGRADE, MONTANA  
AUGUST 13<sup>TH</sup>, 2013

Location	CO <sub>2</sub> max permissible concentration 890 ppm	Temperature permissible range 65 - 80°F	RH% permissible range 30-60%
Outside	190	78.8	36.1
Firing Line	252	<b>81.6</b>	31.4
Center of Range	276	<b>80.6</b>	32.9
Adjacent to Bullet Trap	267	<b>80.1</b>	33.6

CO<sub>2</sub> = Carbon Dioxide  
ppm = Parts per Million  
°F = Degrees Fahrenheit  
RH = Relative Humidity  
CO = Carbon Monoxide  
STEL = Short Term Exposure Limit  
N/A = Not Applicable  
Bold = Outside of Permissible Range



## ILLUMINATION SURVEY

BELGRADE IFR  
 BELGRADE, MONTANA  
 AUGUST 13, 2013

Location	Light – FC	Minimum Lighting Requirements – FC
Target, Lane #1	240	$\geq 100$
Target, Lane #2	148.2	$\geq 100$
Target, Lane #3	104.5	$\geq 100$
Target, Lane #4	120	$\geq 100$
Target, Lane #5	103.0	$\geq 100$
Firing line, Lane #1	35.9	$\geq 30$
Firing line, Lane #2	31.4	$\geq 30$
<b>Firing line, Lane #3</b>	<b>26.2</b>	$\geq 30$
Firing line, Lane #4	34.5	$\geq 30$
Firing line, Lane #5	31.2	$\geq 30$
Firing Lane #3, Approximately 20 feet from bullet trap	42.8	$\geq 30$
<b>Firing Lane #3, Approximately 25 feet from firing line</b>	<b>13.3</b>	$\geq 30$

FC = foot candle measurement

Bold = Below Minimum Lighting Requirements

## VENTILATION DATA

BELGRADE IFR  
BELGRADE, MONTANA  
AUGUST 13, 2013

Lane #	1	2	3	4	5
Shooter Position Flow Rate	> 50 FPM	> 50 FPM	> 50 FPM	> 50 FPM	> 50 FPM

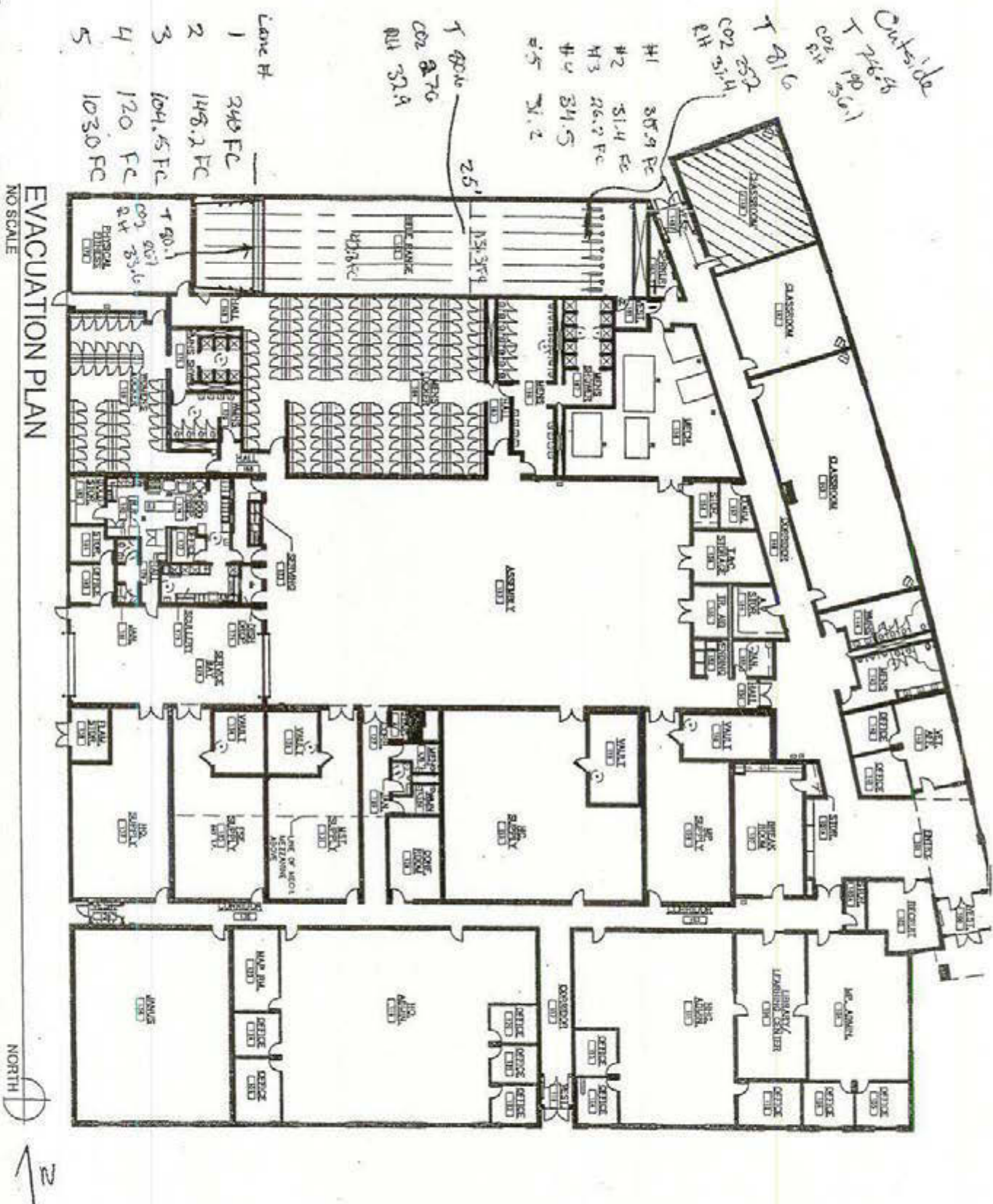
Note: Air velocity measurements ranged from 50-89 FPM at the firing line.

## Lead wipe Sampling

Page 2 of 2

- #26 Lead sample #1 8/3/3-BLGB IFR-01 Line #2 Rubber mat @ bullet trap
- 27 " " #2 " " -02 Lane #5 Floor 22' from bullet trap
- 28 " " #3 " " -03 Lane #2 Floor 35' from bullet trap
- 29 " " #4 " " -04 Lane #5 shooter's table
- 30 " " #5 " " -05 1<sup>st</sup> entrance Floor of IFR
- 31 Make up air unit in mechanical room #159
- 32 Bullet trap area/room
- 33 Door to bullet trap area with safety signage
- 34 Lead sample #6 Exercise mat stored in bullet trap room
- 35 Exterior of exhaust vents adjacent to open workout room wind less than 4 ft





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

1. Date Prepared: 20130813
2. Names (and Company Name) of Personnel Conducting Industrial Hygiene Site Assistance Visit: **Non-Responsive**
3. Facility Name and Brief Summary of Primary Activities Conducted at Facility:  
HHC 1-163rd CAV (CAB)  
Gallatin Readiness Center - General Unit Readiness Training
4. Facility Address: 350 Airport Road  
Bellevue, MT
5. Primary Unit Assigned to Facility (Ensure to capture and provide Unit Identification Code (UIC)): HHC 1-163rd CAV (CAB) **Non-Responsive**
6. Co-Tenant Units Assigned or Working Within Facility (LIST ALL):  
Veterans Assistance - Recruit Training Company
7. Square Ft. Area of Facility: N/A
8. Work Schedule: Mon - Fri 0800-1700, 1 weekend a month
9. Number of work bays:
10. Equipment Density and Type:
  - a. List Equipment Nomenclature Serviced or Maintained at Facility:
  - b. List Total Number for Each Nomenclature Serviced or Maintained at Facility:
11. Total Number of Personnel: 22 full time
12. No. of Admin. Personnel (Include Status - AGR, Fed. Tech., IDT, State or Contract Employee): 17 - AGR, 1 - Fed. Tech, 4 - Civ Cont
13. No. of Maintenance Personnel (Include Status - AGR, Fed. Tech., IDT, State or Contract Employee): 1 - State
14. Total Number of Personnel Enrolled in the Hearing Conservation Program:
15. Total Number of Personnel Enrolled in the Respiratory Protection Program:
16. Total Number of Personnel Enrolled in the Medical Surveillance Program:

PAGE 1 of 2

Facility Background Info Worksheet.doc

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

18. **Non-Responsive**

HHC 1-163rd CAV

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

19. Safety Office **Non-Responsive**

20. **Non-Responsive**

Assigned to:

HHC 1-163rd CAV

**Non-Responsive**



## Army National Guard IAQ Checklist

<b>General Info</b> – Name and address of facility with Zip-code, POC's name, phone #, Military organization.	Belgrade IFR
<b>Shop Layout</b> – clearly depicting location of operation identified in the survey. <u>Fire evacuation plan.</u>	See map
<b>Mechanical Room:</b> check for --- IFR dampness, bird/mice droppings, general cleanliness, make-up airflow, chemical/disinfectant storage, etc., spills, leaks (oil, steam), Operating schedule (up and down times), Humidification and what kind.	Evidence of water intrusion at north wall
<b>HVAC system:</b> check - -drip pan (dampness, mold, etc.), filters, coils, dampers (bird screens)	NA
<b>Outside building:</b> check - -prevailing winds, <u>outside air vents</u> for HVAC, traffic near vents <span style="float: right;">exhaust</span>	
<b>Inside building:</b> check—Temp (69-79 F), RH (30-60%), CO2 (700ppm+ outside reading) should not exceed this, CO (0-2ppm), Outside Airflow (20cfm/person)	See map
<b>Additional Inside building info:</b> check—partitions blocking airflow, ceiling tile (dampness, stains, breaking down), diffusers (open, blocked, diverted), smells (mold, perfume, chemical, etc.), new furniture, additions, carpet, carpet cleaning, new cleaning products (general housekeeping practices), to hot, cold, dry, moist.	Plenum wall blocked Water intrusion + damage
<b>Ventilation</b> – survey of all general and local ventilation systems	IFR
<b>Overall condition</b> of HVAC system and maintenance plan.	
Obtained CO2, Temp, RH monitoring	Yes
Provide <b>Photographs</b> of exterior / interior of each facility, each ventilation system any other areas or conditions pertinent to the survey	Yes

Check <b>building occupancy</b> : How many military personnel, how many civilian personnel	22 Fulltime <u>armory</u> 1 JFR Custodian SFC Allen Hunt	*
Any <b>civilian activities</b> in facility (cub scouts, classes, day care, parties etc)	No	*
Conduct a <b>safety walkthrough</b> of entire facility document any safety deficiencies found.	✓	
<b>Sampling</b> – (Air) shall be conducted to ensure employees are not being exposed to any occupational health hazards – (Bulk) whenever applicable, e.g., paint chips, carpet, paneling – (Wipe) whenever applicable, e.g., floors (break room, general work), <b>Scotch Tape</b> samples for molds	Wipes total of 6 plus one blank Air NA Mold- NA	
Submit <b>final written report</b> within 30 days after receipt of sample results. Which includes: <b>4 comb bound final reports</b> with attachments, CD of each facility surveyed, <b>POC, phone # and facility address</b> included in <u>Introduction</u> portion.		
<b>Appendices</b> – should include: <u>Shop layout</u> with locations of measurements of local and general exhaust fan; sampling & ventilation data and <u>this Checklist</u>		

# Tektronix

## Certificate of Calibration



7323038

Certificate Page 1 of 2

### Instrument Identification

Company ID: 607229  
INDUSTRIAL HYGIENE SW

PO Number: CC-Non-Responsive

Non-Responsive

10510 SUPERFORTRESS AVE  
SUITE C  
MATHER, CA 95855

Instrument ID: 90480719  
Manufacturer: KONICA MINOLTA  
Description: ILLUMINANCE METER

Model Number: TL-1  
Serial Number: 90480719

### 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/NCCL Z540.1-1994 (R2002).

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

Approved By: Non-Responsive  
Service Representative

### Calibration Standards

NIST Traceable#	Inst. ID#	Description	Manufacturer	Model	Cal Date	Date Due
1700254968	17-1001076	6 STEEL RULE	STARETT	C410R-72	22Mar2013	22Mar2015
1700282698	17-1001081	LUMINANCE STD	OPTRONIC LABS	OL 455-4	31Jul2012	31Jul2013
1700293531	17-2007750	1000W LIGHT BULB	GOOCH HOUSEGO	OL FEL-P-K	30Jan2013	30Jan2014
1700285585	4083RC	MULTIMETER	FLUKE	8842A	08Aug2012	26Aug2013

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





# 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	8386A
TEMPERATURE	68.4 (20.2)	°F (°C)	SERIAL NUMBER	54110581
RELATIVE HUMIDITY	36	%RH		
BAROMETRIC PRESSURE	28.61 (968.8)	inHg (hPa)		
<input type="checkbox"/> AS LEFT <input checked="" type="checkbox"/> AS FOUND			<input checked="" type="checkbox"/> IN TOLERANCE <input 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	643 (3.26)	640 (3.25)	623~662 (3.17~3.36)
2	34 (0.17)	35 (0.18)	31~37 (0.16~0.19)	8	995 (5.06)	991 (5.03)	965~1025 (4.90~5.21)
3	64 (0.32)	64 (0.32)	61~67 (0.31~0.34)	9	1468 (7.45)	1476 (7.50)	1423~1512 (7.23~7.68)
4	99 (0.50)	99 (0.50)	96~102 (0.49~0.52)	10	2481 (12.60)	2463 (12.51)	2406~2555 (12.22~12.98)
5	160 (0.81)	159 (0.81)	155~164 (0.79~0.84)	11	4501 (22.87)	4440 (22.55)	4366~4636 (22.18~23.55)
6	328 (1.67)	325 (1.65)	318~338 (1.62~1.72)	12	8000 (40.64)	7943 (40.35)	7760~8240 (39.42~41.86)

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)	139.8 (59.9)	139.5~140.5 (59.7~60.3)

PRESSURE VERIFICATION				SYSTEM V-106			Unit: inH <sub>2</sub> O (Pa)
#	STANDARD	MEASURED	ALLOWABLE RANGE	#	STANDARD	MEASURED	ALLOWABLE RANGE
1	-4.073 (-1014.2)	-4.084 (-1016.9)	-4.119~-4.027 (-1025.6~-1002.8)	3	8.027 (1998.7)	8.074 (2010.4)	7.942~8.112 (1977.5~2020.0)
2	2.032 (506.0)	2.041 (508.2)	2.007~2.057 (499.7~513.3)	4	14.052 (3498.9)	14.114 (3514.4)	13.906~14.198 (3462.7~3535.2)

HUMIDITY AS FOUND				SYSTEM H-102			Unit: %RH
#	STANDARD	MEASURED	ALLOWABLE RANGE	#	STANDARD	MEASURED	ALLOWABLE RANGE
1	10.0	11.8	7.0~13.0	4	70.0	69.1	67.0~73.0
2	30.0	30.6	27.0~33.0	5	90.0	89.4	87.0~93.0
3	50.0	49.9	47.0~53.0				

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	04-08-11	04-08-12
Temperature	E001800	01-19-12	07-19-12	Temperature	E001799	01-19-12	07-19-12
Humidity	E003539	02-28-12	08-28-12				

**Non-Responsive**

March 27, 2012

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	8386A
TEMPERATURE	69.1 (20.6)	°F (°C)	SERIAL NUMBER	54110581
RELATIVE HUMIDITY	37	%RH		
BAROMETRIC PRESSURE	28.61 (968.8)	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 -

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)	139.8 (59.9)	139.5-140.5 (59.7-60.3)

PRESSURE VERIFICATION				SYSTEM V-106			Unit: inH <sub>2</sub> O (Pa)
#	STANDARD	MEASURED	ALLOWABLE RANGE	#	STANDARD	MEASURED	ALLOWABLE RANGE
1	-4.073 (-1014.2)	-4.084 (-1016.9)	-4.119-4.027 (-1025.6-1002.8)	3	8.027 (1998.7)	8.074 (2010.4)	7.942-8.112 (1977.5-2020.0)
2	2.032 (506.0)	2.041 (508.2)	2.007-2.057 (499.7-512.3)	4	14.052 (3498.9)	14.114 (3514.4)	13.906-14.198 (3462.7-3535.2)

HUMIDITY VERIFICATION				SYSTEM H-102			Unit: %RH
#	STANDARD	MEASURED	ALLOWABLE RANGE	#	STANDARD	MEASURED	ALLOWABLE RANGE
1	10.0	11.8	7.0-13.0	4	70.0	69.1	67.0-73.0
2	30.0	30.6	27.0-33.0	5	90.0	89.4	87.0-93.0
3	50.0	49.9	47.0-53.0				

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)	646 (3.28)	629-667 (3.19-3.39)
2	35 (0.18)	34 (0.17)	32-38 (0.16-0.19)	8	996 (5.06)	997 (5.06)	966-1025 (4.91-5.21)
3	64 (0.33)	64 (0.32)	61-67 (0.31-0.34)	9	1476 (7.50)	1476 (7.50)	1432-1521 (7.27-7.72)
4	99 (0.50)	99 (0.50)	96-102 (0.49-0.52)	10	2476 (12.58)	2472 (12.56)	2401-2550 (12.20-12.95)
5	160 (0.81)	159 (0.81)	155-165 (0.79-0.84)	11	4498 (22.85)	4548 (23.10)	4363-4633 (22.17-23.54)
6	346 (1.76)	346 (1.76)	335-356 (1.70-1.81)	12	7988 (40.38)	8013 (40.71)	7748-8227 (39.36-41.80)

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	E004477	12-15-11	12-15-12	Temperature	E001644	01-20-12	07-20-12
Pressure	E001558	12-12-11	06-12-12	Pressure	E001550	12-12-11	06-12-12
Velocity	E003327	09-19-07	09-19-12	Barometric Pressure	E001992	04-08-11	04-08-12
Humidity	E003539	02-28-12	08-28-12	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	04-08-11	04-08-12
Velocity	E003327	09-19-07	09-19-12				

**Non-Responsive**

March 27, 2012

DATE

File ID: CERT\_DEFAULT

**TABLE 1**  
**LEAD WIPE SAMPLE RESULTS**  
**BELGRADE INDOOR FIRING RANGE**  
**BELGRADE, MT**  
**AUGUST 13, 2013**



TABLE 1  
LEAD WIPE SAMPLE RESULTS  
BELGRADE INDOOR FIRING RANGE  
BELGRADE, MT  
AUGUST 13, 2013

Sample Number	Sample Area	Sample Location	Results ( $\mu\text{g}/\text{ft}^2$ )	ARNG/HUD Standard ( $\mu\text{g}/\text{ft}^2$ )
081313-BLGDIFR-01	IFR	Lane #2, rubber mat at bullet trap	110	$\leq 200$
081313-BLGDIFR-02	IFR	Lane #5 floor, 22 feet from bullet trap	73	$\leq 200$
081313-BLGDIFR-03	IFR	Lane #2 floor, 35 feet from bullet trap	25	$\leq 200$
081313-BLGDIFR-04	IFR	Lane #5, shooter's table	70	$\leq 200$
081313-BLGDIFR-05	IFR	Floor, at 1 <sup>st</sup> entrance door to the IFR	4.8	$\leq 200$
081313-BLGDIFR-06	IFR	Exercise mat in the bullet trap room	7.3	$\leq 200$

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

ARNG = Army National Guard

HUD = US Department of Housing and Urban Development

**Bold** = Above ARNG Standard limit



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## ANALYTICAL REPORT

Report Date: August 26, 2013

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: 34-1323132

Client Project ID: 013.IH1449.14/Belgrade IFR

Purchase Order: 013.IH1449.14

Project Manager: Non-Responsive

## Analytical Results

Sample ID: 81313-BLGDIFR-01	Media: Ghost Wipe	Collected: 08/13/2013
Lab ID: 1323132001	Sampling Location: Belgrade IFR	Received: 08/19/2013
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 1 ft <sup>2</sup>	Prepared: 08/20/2013
		Analyzed: 08/22/2013
Analyte	ug/sample	ug/ft <sup>2</sup> RL (ug/sample)
Lead	110	110 2.5

Sample ID: 81313-BLGDIFR-02	Media: Ghost Wipe	Collected: 08/13/2013
Lab ID: 1323132002	Sampling Location: Belgrade IFR	Received: 08/19/2013
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 1 ft <sup>2</sup>	Prepared: 08/20/2013
		Analyzed: 08/22/2013
Analyte	ug/sample	ug/ft <sup>2</sup> RL (ug/sample)
Lead	73	73 6.3

Sample ID: 81313-BLGDIFR-03	Media: Ghost Wipe	Collected: 08/13/2013
Lab ID: 1323132003	Sampling Location: Belgrade IFR	Received: 08/19/2013
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 1 ft <sup>2</sup>	Prepared: 08/20/2013
		Analyzed: 08/22/2013
Analyte	ug/sample	ug/ft <sup>2</sup> RL (ug/sample)
Lead	25	25 6.3

Sample ID: 81313-BLGDIFR-04	Media: Ghost Wipe	Collected: 08/13/2013
Lab ID: 1323132004	Sampling Location: Belgrade IFR	Received: 08/19/2013
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 1 ft <sup>2</sup>	Prepared: 08/20/2013
		Analyzed: 08/22/2013
Analyte	ug/sample	ug/ft <sup>2</sup> RL (ug/sample)
Lead	70	70 6.3

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

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Environmental

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER





## ANALYTICAL REPORT

Workorder: 34-1323132

Client Project ID: 013.IH1449.14/Belgrade IFR

Purchase Order: 013.IH1449.14

Project Manager: Non-Responsive

## Analytical Results

Sample ID: 81313-BLGDIFR-05	Media: Ghost Wipe	Collected: 08/13/2013
Lab ID: 1323132005	Sampling Location: Belgrade IFR	Received: 08/19/2013
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 1 ft <sup>2</sup>	Prepared: 08/20/2013
		Analyzed: 08/22/2013
Analyte	ug/sample	ug/ft <sup>2</sup> RL (ug/sample)
Lead	4.8	4.8 2.5

Sample ID: 81313-BLGDIFR-06	Media: Ghost Wipe	Collected: 08/13/2013
Lab ID: 1323132006	Sampling Location: Belgrade IFR	Received: 08/19/2013
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 1 ft <sup>2</sup>	Prepared: 08/20/2013
		Analyzed: 08/22/2013
Analyte	ug/sample	ug/ft <sup>2</sup> RL (ug/sample)
Lead	7.3	7.3 2.5

Sample ID: 81313-BLGDIFR-Blank	Media: Ghost Wipe	Collected: 08/13/2013
Lab ID: 1323132007	Sampling Location: Belgrade IFR	Received: 08/19/2013
Method: NIOSH 7300 Mod.	Sampling Parameter: Area Not Applicable	Prepared: 08/20/2013
		Analyzed: 08/22/2013
Analyte	ug/sample	ug/ft <sup>2</sup> RL (ug/sample)
Lead	<1.3	NA 1.3

## Comments

## Sample: 1323132001

Lead was reported from 2X dilution data for this sample because of interferences. The reporting limit was raised proportionately to the reported dilution level.

## Sample: 1323132002

Lead was reported from 5X dilution data for this sample because of interferences. The reporting limit was raised proportionately to the reported dilution level.

## Sample: 1323132003

Lead was reported from 5X dilution data for this sample because of interferences. The reporting limit was raised proportionately to the reported dilution level.

## Sample: 1323132004

Lead was reported from 5X dilution data for this sample because of interferences. The reporting limit was raised proportionately to the reported dilution level.

## Sample: 1323132005

Lead was reported from 2X dilution data for this sample because of interferences. The reporting limit was raised proportionately to the reported dilution level.

## Sample: 1323132006

Lead was reported from 2X dilution data for this sample because of interferences. The reporting limit was raised proportionately to the reported dilution level.



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## ANALYTICAL REPORT

Workorder: 34-1323132

Client Project ID: 013.IH1449.14/Belgrade IFR

Purchase Order: 013.IH1449.14

Project Manager: Non-Responsive

## 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: alslt.lab@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	AClass (DoD ELAP)	ADE-1420	<a href="http://www.aclasscorp.com">http://www.aclasscorp.com</a>
	Utah (NELAC)	DATA1	<a href="http://health.utah.gov/lab/labimp/">http://health.utah.gov/lab/labimp/</a>
	Nevada	UT00009	<a href="http://ndep.nv.gov/bsdw/labservice.htm">http://ndep.nv.gov/bsdw/labservice.htm</a>
	Oklahoma	UT00009	<a href="http://www.deq.state.ok.us/CSDnew/">http://www.deq.state.ok.us/CSDnew/</a>
	Iowa	IA# 376	<a href="http://www.iowadnr.gov/InsideDNR/RegulatoryWater.aspx">http://www.iowadnr.gov/InsideDNR/RegulatoryWater.aspx</a>
	Florida (TNI)	E871067	<a href="http://www.dep.state.fl.us/labs/bars/sas/qa/">http://www.dep.state.fl.us/labs/bars/sas/qa/</a>
	Texas (TNI)	T104704458-11-1	<a href="http://www.tceq.texas.gov/field/qa/lab_accred_certif.html">http://www.tceq.texas.gov/field/qa/lab_accred_certif.html</a>
Industrial Hygiene	AIHA (ISO 17025 & AIHA IHLAP/ELLAP)	101574	<a href="http://www.aihaaccreditedlabs.org">http://www.aihaaccreditedlabs.org</a>
Lead Testing:			
CPSC	AClass (ISO 17025, CPSC)	ADE-1420	<a href="http://www.aclasscorp.com">http://www.aclasscorp.com</a>
Soil, Dust, Paint, Air	AIHA (ISO 17025, AIHA ELLAP and NLLAP)	101574	<a href="http://www.aihaaccreditedlabs.org">http://www.aihaaccreditedlabs.org</a>
Dietary Supplements	AClass (ISO 17025)	ADE-1420	<a href="http://www.aclasscorp.com">http://www.aclasscorp.com</a>

## 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.





1983/32

☐ RUSH Status Requested - ADDITIONAL CHARGE  
RESULTS REQUIRED BY \_\_\_\_\_

CONTACT ALS SALT LAKE PRIOR TO SENDING SAMPLES

Billing Address

Chain of Custody No. \_\_\_\_\_

6. How did you first learn about ALS?

[illegible]

\*\* 1.  $\mu\text{g}/\text{sample}$  2.  $\text{mg}/\text{m}^3$  3. ppm 4. % 5.  $\mu\text{g}/\text{m}^3$  6. ug/l (other) Please indicate one or more units in the column entitled Units\*\*

### Comments

### Possible Contamination and/or Chemical Hazards

### 7. Chain of Custody (Optional)

Date/Time

ALS Environmental

FOIA Requested Record #J-15-0085 (MT)  
Released by National Guard Bureau  
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# Industrial Hygiene Southwest

## Violation Inventory Log

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

#### Belgrade IFR, Belgrade MT



CONTROL NUMBER	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/NCOIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
CLOSED									
MTBGIFR-100912-4.4	Fire extinguisher past due for annual and monthly inspections.	IFR	4	Perform and document inspections of fire extinguishers as required.					29 CFR 1910.157(c)(1); 29 CFR 1910.157 (e)(2)
MTBGIFR-100912-Executive Summary 5-e	Class 1 Laser systems are used for target practice and weapons qualifications.	IFR	4	Consider posting signs warning users about laser hazards.					ANSI Z136.1-2010
MTBGIFR-100912-Executive Summary 5-f	IFR SOP was not available for review.	IFR	4	Update the range SOP to include laser classes, their hazards, and proper protective eye wear as applicable.					ANSI Z136.1-2010
MTBGIFR-100912-4.4	Water damage and water intrusion at the north side of the IFR	IFR	4	Determine the source of the water damage and if repairs are necessary. Perform repairs as needed.					Prudent Industrial Hygiene Practice; ANSI Z4.1-1986



## 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 Belgrade IFR. The paragraphs are numbered to correspond to the sections where first noted. (i.e., N.4.2 describes the following: the N is Conclusions & Recommendations and the 4.2 corresponds back to Section 4 – Observations and Recommendations; Item 2 – Ventilation Inspection).

### **INDOOR FIRING RANGE RECOMMENDATIONS**

The following recommendations must be addressed if, and only if, the IFR is to be used as an active firing range again. These recommendations must be addressed prior to using the range.

**N4.1.1 Building Envelope** – Reconfigured the firing lanes to ensure each lane is at least 4 feet wide.

**N4.1.2 Range Lighting** – Replace the burnt out bulbs, increase the number of fixtures or number of bulbs per fixture, change to a more effective lighting type, or paint the walls a more reflective color.

**N4.1.5 Range Use** – Do not use the range for any purpose except for firing. Remove lockers and stored items, until the IFR is officially converted. Cleaning of stored items is required, prior to removal to prevent migration of lead. Remove stored items from in front of the plenum wall.

**N4.1.6 Range Maintenance** – Do not dry sweep the range. Use the housekeeping procedures outlined in NGR 385-15, 5-4 to perform cleaning. Utilize Armory Clean-up SOP included in this report.

**N4.1.9 Range SOP** – Develop and implement a site specific range SOP.

**N4.2 Ventilation** – Redirect the exhaust vents to ensure that air from the range does not enter into another part of the building. Until the vents are redirected keep the exercise room windows closed.

### **FACILITY RECOMMENDATIONS**

**N4.4 Other Observations** –

1. Perform and document monthly inspections of fire extinguishers as required.
2. Determine the source of the water damage and if repairs are necessary. Perform repairs as needed.

FY 13 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	NA	NA	NA	0
Breathing Zone samples collected above Occupational Exposure Limit (OEL)		953-01-04	NA	NA	NA	0
Number of Personal Noise Dosimetry samples collected >= 85 dBA with no controls		953-01-05	NA	NA	NA	0
Number of Personal Noise Dosimetry samples collected >= 85 dBA		953-01-05	NA	NA	NA	0
Number of Noise Sound Level samples collected >= 140 dBP with no controls		953-01-06	NA	NA	NA	0
Number of Noise Sound Level samples collected >= 140 dBP		953-01-06	NA	NA	NA	0
Number of Noise Sound Level samples collected >= 140 dBP not controlled, that are recommended for control		953-01-07	NA	NA	NA	0
Number of Noise Sound Level samples collected >= 140 dBP not controlled		953-01-07	NA	NA	NA	0
Number of Breathing Zone samples collected above Occupational Exposure Limit (OEL) not controlled, that are recommended for control		953-01-08	NA	NA	NA	0
Number of Breathing Zone samples collected above Occupational Exposure Limit (OEL) not controlled		953-01-08	NA	NA	NA	0
Number of Personal Noise Dosimetry samples collected >= 85 dBA not controlled, that are recommended for control		953-01-09	NA	NA	NA	0
Number of Personal Noise Dosimetry samples collected >= 85 dBA not controlled		953-01-09	NA	NA	NA	0
Total number of DOEHS-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 DOEHS-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
Number of processes that were assessed for potential inhalation exposure to employees within the last 12 months.		953-02-14	IHT	IHT	IHT	IHT

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## INDOOR FIRING RANGE INSPECTION CHECKLIST

See paragraphs 1-23 through 1-25 of this regulation for inspection requirements. For the range to be considered safe each of the following statements shall be true and air-sampling results shall be below the standard for Lead. The information in parentheses after each statement denotes the location of the requirement in this or other regulations.

Location of the Range Belgrade, Montana Date Aug 13, 2013

Range Custodian **Non-Responsive** Telephone (406) 324-5019

## Part 1, Physical Safety Inspection

## A. Building Envelope

Yes 1 Each firing lane is at least 4 feet wide. [1-17a(1)(a)] No, 46 → 47 1/2" wide

Yes 2 Pipes, conduits, and other projecting surfaces are baffled or covered by a material that shall protect these items and prevent ricochets. [1-17a(1)(b)]

Yes 3 No windows or doors are located in front of the firing line. (Except access door to the back of the bullet trap) [1-17a(1)(d)]

Yes 4 There are no open floor drains in the range [1-17a(2)(c)]

Yes 5 There is no carpet, drapes or other fiber-like material in the range. [1-17a(2)(d)]

Yes 6 Pipes, conduits and walls are sealed to prevent leakage of Lead dust from the range into other areas. [1-17a(2)(b)]

Yes 7 The interior surfaces of the range floor, walls, and ceiling have no protruding edges or devices [DG 415-1, App.A, 3-1d]

Yes 8 The roof provides ballistic security. [DG 415-1, App. A, 3-1e(1)] Concrete

Yes 9 The walls provide ballistic security. [DG 415-1, App. A, 3-1f(1)] CMU block walls

Yes 10 Interior mortar joints are flush with the interior surface [DG 415-1, App. A, 3-1f(2)]

Yes 11 The plenum wall is adequately supported and thick enough to avoid flexing [DG 415-1 App. A, 3-1f(4)]

Yes 12 The entrance door to the range is weather-stripped unless the door acts as passive make-up air intake [DG 415-1 App. A, 3-1h] Primary & Secondary doors, both weather striped w/ floor sweep

## B. Range Lighting

(Yes)

1 Lighting is uniform, non-glaring and does not cause shadows. [1-17c(1)(a)]

(Yes)

2 Illumination is at least 100 foot candles on the targets and 30 foot candles in all other areas. [1-17c(1)(b)] *Lane 3 @ 26.2 ft candles @ 25' downrange  
flourescent bank of light out of candles 2 hrs then 25*

(Yes)

3 All lighting is protected by baffles and placed so that the shooter has an unobstructed view down range. [1-17c(1)(c)]

(Yes)

4 Downrange lighting begins approximately 18 feet from the firing line and ends approximately 8 feet from the target line. [1-17c(1)(d)]

(Yes)

5 Emergency lights are provided behind the firing line and are in working condition. [1-17c(1)(e)]

(Yes)

6 Exit lights are provided and working as required. [1-17c(1)(f)]

(Yes)

7 Lighting of at least 30 foot-candles is provided behind the bullet trap for maintenance (if applicable). [1-17c(1)(g)] *57.1, 71.2*

(Yes)

8 No known electrical hazards exist in the range. [1-17c(2)(c)]

## C. Bullet Traps

(Yes)

1 A bullet trap is permanently installed in the range. [1-17d(1)(a)]

(Yes)

2 Bullet traps are of a commercial design, which is in compliance with the requirements of CEHND 1110-1-18, NGB-ARI, NG PAM 385-6, Chapter 4 and this regulation. [1-17d(1)(b)]. *Appears to be commercial design*

(Yes)

3 The thickness of inclined plate/sand trap type bullet trap shall be adequate to attenuate the maximum caliber of ammunition authorized to be fired on the range. [1-17d(1)(c)] *NA, this is not an inclined plate design (see \*)*

Yes

4 All plate/sand trap type bullet traps are designed to prevent ricochets by directing the projectiles in the same direction they are traveling. [1-17d(1)(d)] *NA \**

Yes

5 Sandpits in plate/sand trap type backstops extend to a point directly below the leading edge of the sloped plate. [1-17d(1)(e)] *NA \**

Yes

6 Forward edges in a louver or venetian blind type bullet trap are maintained in a knife edge condition to prevent ricochets. [1-17d(1)(f)] *NA \**

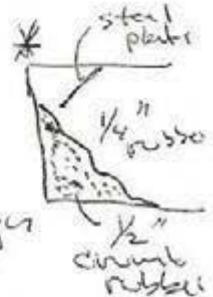
Yes

7 Steel bullet traps are not bowed, punctured or severely pitted. [1-17d(2)(a)] *NA \**

Yes

8 Plates in the bullet trap are flush with the other plates. Mold seams are ground smooth. [1-17d(2)(b)] *NA*

## D. Targets and Target Carriers





- (Yes) 1 A target retrieval system is operable in all lanes. [1-17e(1)(a)] (Any one firing lane without a retrieval system shall not be used for firing)
- (Yes) 2 The target retrieval system is constructed in such a manner as to minimize flat surfaces exposed to the firing line. [1-17e(1)(a)]
- Yes 3 Only paper targets are used in the range. [1-17e(1)(b)] Unknown, range is not active

## E. Range Use

- Yes 1 The range is not used for any purpose other than firing. [1-18a] No, storage & laser sighting (beam hit)
- Yes 2 No equipment or furniture is stored or maintained in the range, plenum area, or behind the bullet trap. [1-17d] Office furnishing stored along N wall & plenum wall, outside bound of 2 x 4 / under stand along S wall. A laser range
- Yes 3 No additional clothing or equipment is brought into the range. [1-19h] laser sighting electronics & cases stored down range across 8 cases w/ 2 tables
- Yes 4 Personnel are not permitted in the plenum area during firing even if designed for observation. [1-19a] Unknown, range is inactive
- Yes 5 Individuals other than maintenance and inspection personnel are not allowed to walk downrange. (Except in regularly cleaned area as needed to pick up brass) [1-19f] Unknown, range is inactive
- Yes 6 All areas directly in front of the plenum walls are kept clear at all times. [1-19c] NO Office furnishing obstructs E, 40% of plenum wall
- Yes 7 Pellets, BBs, magnum and armor piercing rounds are not used in the range. [1-19g] Postive @ downway 5.56mm, 9mm & .22 cal. Muzzle velocities of 3000 FPS & energies of 3000 ft/lbs
- Yes 8 The ventilation system is in operation at all times during firing or cleaning. [1-18c] Intermittent w/ lighting. Ventilation starts @ 5 mins after lights turned on
- (Yes) 9 A hand-held ABC-type fire extinguisher is located in a recessed cabinet near the entrance door, inside of the firing range. [DG 415-1, App. A, 4-5]

## F. Range Maintenance

- Yes 1 Dry sweeping does not occur in the range. [1-19e] Per reports infrequent dry sweeping
- (Yes) 2 No brooms are located in the range. [1-19e]
- Yes 3 A range custodian is appointed for the range who is fully trained and aware of his/her responsibilities. [1-13c]

Non-Responsive

Non-Responsive

Non-Responsive

Unknown, is uncharacteristic

## G. Personnel Protective Equipment

- 4
- Yes 1. All personnel in the range during firing wear ANSI approved eye protection. [1-20a] *Range is inactive*  
*Downy posted w/ ANSI approved eye protection required*
- Yes 2. All personnel in the range during firing wear ANSI approved hearing protection. [1-20b] *Range is inactive*  
*Downy posted w/ ANSI approved hearing protection required*

## H. Posting of Signs

- 1 The following signs are posted in or in the vicinity of the range. [1-21a]

- ☒ a. Eating, Drinking and Smoking are Prohibited
- ☒ b. Dry Sweeping is Prohibited
- ☒ c. Wash Hands and Face Immediately Following Firing
- ☒ d. The Following Ammunition is authorized for use on this Range
- ☒ e. Hearing Protection shall be Properly worn during firing
- ☒ f. Proper Safety Glasses/Goggles shall be worn during firing
- ☒ g. No Furniture or Storage of Items Permitted in the Range

- 2 The following signs are posted on the entrance door to the range. [1-21b]

- ☒ a. Noise Hazardous Area .
- ☒ b. Danger Lead Hazard Area .
- ☒ c. Pregnant women are not permitted in this Area .

- Yes 3 An illuminated warning sign, which is interlocked with the range ventilation switch, is located outside of the firing range to alert individuals that the range is in use. [1-21c]
- Yes 4 Each firing lane is numbered at the firing line and at the bullet trap visible to all shooters [1-21c]
- Yes 5 A warning sign is posted outside of the access door to the bullet trap, which warn personnel not to enter. [1-21e]

## I. Range SOP

- ☒ Yes 1 The indoor firing range has a written SOP, which is approved by the State Safety and Occupational Health Office. [1-10e] *Staff not aware of an SOP*  
*Not available ans. to*

- ☒ 2 The range SOP includes as a minimum the following. [1-22b]

- Yes a The requirement for establishment and maintenance of a log of visitors for the indoor firing range
- Yes b The requirement for and contents of a mandatory safety briefing for all individuals prior to entering the range to be given by a designated competent range safety officer
- Yes c Work practices including required, recommended permissible and banned practices as specified by this regulation
- Yes d Instructive guidance for all range procedures



- Yes e. Personnel responsibilities for performing the procedures, for supervising them, and reviewing and updating the SOP.
- Yes f. Authorized ammunition for the range.
- Yes g. The requirement for posting of signs IAW section 1-21 of this regulation.
- Yes h. Cleaning and maintenance requirements.
- Yes i. Personal protective equipment requirements for maintenance, firing and cleaning.

## J. Recordkeeping

- ☒ 1. A visitors log is maintained which includes the following information for all visitors/shooters: [1-14c]

- Yes a. Name and age of shooter.
- Yes b. Organization (if civilian, include address and phone number).
- Yes c. Sign in and sign out times.
- Yes d. Type of ammunition used and number of rounds fired.

- Yes ☒ 2. Copies of initial and other previous inspections are available. [1-24a]

- Yes ☒ 3. The initial inspection report includes air-sampling data. [1-24b]

- ☒ 4. An OSHA compliance program is in place, which covers the required aspects [1-30a]

- Yes ☒ 5. All individuals using the indoor firing range have been provided with a copy of the range SOP or been briefed on the requirements of the SOP, and have signed an agreement to follow the rules stated therein. [1-13h]

- Yes ☒ 6. State maintenance officers/custodians have documentation to show that they have been educated to the health effects from exposure to Lead dust. [29 CFR 1910.1200 and 29 CFR 1910.1025] *Documentation is not available*

- Yes ☒ 7. Range safety **Non-Responsive** ed. [1-13c]

## K. New and Renovated Ranges

- Yes 1. No doors are installed in the plenum wall. *Access panel in center of plenum wall 15 1/2" wide 95" tall.*
- Yes 2. Plenum area is at least 4 feet deep. *34 1/2"*
- ☒ 3. An access door is installed behind the bullet trap
- ☒ 4. Only escalator or rubber bullet traps are installed

## Part 2, Ventilation Inspection

## A. Existing Ranges

- Yes 1. The range has an operational mechanical ventilation system. [1-17b(1)(a)]
- Yes 2. The minimum ventilation rate at the firing line in each firing lane is 50 fpm at all levels [1-17b(1)(b)] *Standard offset firing, things obstruct < 40% - 2 ft plenum wall. Flow rates @ firing line above 50 fpm up to 89 fpm*
- Yes 3. One hundred percent of air is exhausted at or behind the bullet trap. [1-17b(1)(c)]
- Yes 4. Make-up air is introduced into the range behind the shooters. [1-17b(1)(d)]
- \* Yes 5. Air that is introduced through vents into the plenum does not exceed a velocity of 600 fpm. [1-17b(1)(e)] *No (940 fpm)*
- \* Yes 6. Air exiting through holes in the plenum wall has a velocity between 400 and 600 fpm [1-17b(1)(f)] *No, less than 300 fpm.*
- Yes 7. The ventilation system is so constructed that air exhausted from the indoor firing range does not enter into another part of the building or any other air supply system. [1-17b(1)(g)] *Range exhaust located on N wall w/in 4' of windows (operable) to the exercise room.*
- Yes 8. The exhaust exceeds the make-up air by approximately 10% to form a negative air pressure in the range in relation to adjoining areas. [1-17b(1)(h)] *Range is under negative pressure, door difficult to open.*
- Yes 9. If air is re-circulated in the range, it is installed with a HEPA filter with a reliable back-up filter. [29 CFR 1910.1025(e)(4)(ii)] *No re-circulation*
- Yes 10. If air is re-circulated in the range, controls to monitor the concentration of Lead and Carbon Monoxide levels are installed and programmed to bypass the recirculation system automatically if the filter system fails. [29 CFR 1910.1025(e)(4)(ii)] *NA*
- Yes 11. The fan(s) in the ventilation system is a single speed fan only. [DG 415-1, App. A, 3-2a]
- Yes 12. A smoke test of the range shows laminar air flow and no turbulence in the range. (See NG PAM 385-16, Appendix E for troubleshooting guidance) [1-18b(1)(k)]
- Yes 13. In non-powered systems, the supply air louvers and exhaust fan are electrically interlocked. [1-17b(1)(l)] *NA*
- Yes 14. In power systems, the supply and exhaust fans are electrically interlocked. The make-up air fan should start slightly after the exhaust fan [1-17b(1)(m)] *supply & exhaust fans are interlocked. Unknown, not able to observe*
- Yes 15. Range air temperature is between 65 degrees and 80 degrees Fahrenheit [1-17b(1)(n)]. *Make up air is direct ambient, range temp is ambient 80.5 → 81.5 today*

## B. New and Renovated Ranges



7

- Yes 1 A manometer is installed leading into the exhaust fan, which is capable of measuring at least 20 inches of static pressure *None observed.*
- Yes 2 Supply and exhaust fans are electrically interlocked with the downrange lighting.
- Yes 3 The face velocity on supplied make-up and exhaust ducts does not exceed 2000 cfm per square foot of duct space.
- Yes 4 Passive supply systems have opposing blade louvers. *NA*
- Yes 5 Turning vanes are installed in all duct elbows, which have between 60° and 90° angles *Unknown, not accessible*

### Part 3, Air Sampling

- Yes 1 The physical safety inspection, Part 1 of the range inspection checklist, was completed and all requirements met on: *All requirements were not met.*
- Yes 2 The ventilation inspection, Part 2 of the range inspection checklist, was completed and all requirements met on: *All requirements were not met.*
- 3 Air sampling has been scheduled for *Not scheduled*
- Print and sign \_\_\_\_\_  
Position \_\_\_\_\_
4. Air sampling was completed on: *Not performed*
5. Air sample results do not exceed \_\_\_\_\_ mg/m<sup>3</sup> (results are attached) for the following types of ammunition: *NA*
6. For military personnel exposed less than 30 days per year, this range is classified as: SAFE *NA*
7. For military personnel exposed more than 30 days per year and for all non-DoD personnel, this range is classified as: SAFE *NA*

Print and sign \_\_\_\_\_

Position \_\_\_\_\_

Date \_\_\_\_\_

\* Not applicable per NGR 385-15



BEST AVAILABLE COPY  
DEPARTMENT OF THE ARMY AND THE AIR FORCE  
NATIONAL GUARD BUREAU  
INDUSTRIAL HYGIENE, SOUTHWEST  
10510 Superfortress Ave, Suite C  
Mather, CA 95655

ARNG-CSG-IHSW

8 January 2013

MEMORANDUM FOR

Montana Army National Guard, ATTN: Deputy State Surgeon, Montana Medical Detachment, 1956 Mt Majo Street, Fort Harrison, MT 59636-4789

**SUBJECT: Industrial Hygiene Site Assistance Visits for FY13**

1. The National Guard Bureau, Industrial Hygiene – Southwest (IHSW) will be conducting annual Industrial Hygiene Site Assistance Visits, to include a cursory review of safety related items, for

-Hamilton Armory & Indoor Firing Range (IFR)(CL), 910 West Main Street, Hamilton, MT 59840

-Glasgow Armory & Indoor Firing Range (IFR)(CL), 81 Airport Road, Glasgow, MT 59230  
-Indoor Firing Range (IFR)

(CL) 1008 U.S. 191, Malta, MT 59538

(CL) Dawson County Fairgrounds, P.O. Box 1323, Glendive, MT 59330

(CL) 2190 West Holly Street, Sidney, MT 59270

(A) 24 Fleshman Creek Road, Livingston, MT 59407

(A) 350 Airport Road, Belgrade, MT 59714

(CL) 600 Gilman Avenue, Butte, MT 59701

(A) 1900 William Street, Fort Harrison, Helena, MT 59636

(CL) RR2, 773 Airport Road, Lewistown, MT 59457

(A) 1840 U.S. 93, Kalispell, MT 59901

2. The primary purpose of this memorandum is to notify you of the anticipated site visits. We ask that you contact the facilities and coordinate the tentative dates for the site visits. Attached are a Request for Information (RFI)-(IH Site Assistance Visit Questionnaire) and a Memorandum of Instruction (MOI) outlining a tentative schedule and the objectives of our visit and should be forwarded to each facility POC.

3. Secondly, we ask that you contact the contractor within 20 working days to coordinate a tentative schedule. The contractor information is as follows: **Non-Responsive** of Network Environmental Systems (NES) **Non-Responsive** 916-353-2560.

4. Finally, we ask that you provide IHSW personnel with a copy of the finalized schedule and facility POCs.



**SUBJECT: Industrial Hygiene Site Assistance Visits for FY13**

5. Questions or comments may be directed to  
854-1490/ (916) 812-5838 or

Non-Responsive

Non-Responsive

(916) 854-1490

on-Responsive)

Non-Responsive

NGB, IHSW, CIV  
Industrial Hygiene

CF:  
FMO  
OHN  
SSO

**FACILITY INFORMATION**

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

1. Date Prepared: **13 August 2013**
2. Names (and Company Name) of Personnel Conducting Industrial Hygiene Site Assistance Visit: NES, Inc., **Non-Responsive**
3. Facility Name and Brief Summary of Primary Activities Conducted at Facility:  
**Gallatin Readiness Center – General unit readiness training  
 Belgrade Armory/IFR**
4. Facility Address: **350 Airport Road, Belgrade, MT**
5. Primary Unit Assigned to Facility (Ensure to capture and provide Unit Identification Code (UIC)): **HHC 1-163<sup>rd</sup> CAV (CAB)** **Non-Responsive**
6. Co-Tenant Units Assigned or Working Within Facility (LIST ALL):  
**Veterans Assistance; Recruit Training Company**
7. Square Ft. Area of Facility: **Unknown**
8. Work Schedule: **Monday-Friday 0800-1700, 1 weekend a month**
9. Number of work bays: **N/A**
10. Equipment Density and Type: **N/A**
  - a. List Equipment Nomenclature Serviced or Maintained at Facility:
  - b. List Total Number for Each Nomenclature Serviced or Maintained at Facility:
11. Total Number of Personnel: **22 Full-time personnel**
12. No. of Admin. Personnel (Include Status – AGR, Fed. Tech., IDT, State or Contract Employee): **17-AGR; 1-Fed, Tech; 4-Civ Cont**
13. No. of Maintenance Personnel (Include Status – AGR, Fed. Tech., IDT, State or Contract Employee): **1-State**
14. Total Number of Personnel Enrolled in the Hearing Conservation Program:
15. Total Number of Personnel Enrolled in the Respiratory Protection Program:
16. Total Number of Personnel Enrolled in the Medical Surveillance Program:



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

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

a. Email address, Commercial Telephone Number and Unit Assigned to:  
**Non-Responsive** (406) 324-5017 HHC 1-163<sup>rd</sup> CAV

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

a. Email Address, Commercial Telephone Number and Unit Assigned to:  
**Non-Responsive** (406) 324-5017 HHC 1-163<sup>rd</sup> CAV

20. Facility Telephone Number: **Non-Responsive**

## *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.

## Army National Guard IAQ Checklist

<b>General Info</b> – Name and address of facility with Zip code, POC's name, phone #, Military organization.	Belgrade IFR
<b>Shop Layout</b> – clearly depicting location of operation identified in the survey. <u>Fire evacuation plan.</u>	See Map
<b>Mechanical Room:</b> check for --- dampness, bird/mice droppings, general cleanliness, make-up airflow, chemical/disinfectant storage, etc., spills, leaks (oil, steam), Operating schedule (up and down times), Humidification and what kind.	Evidence of water intrusion at North wall.
<b>HVAC system:</b> check - -drip pan (dampness, mold, etc.), filters, coils, dampers (bird screens)	N/A
<b>Outside building:</b> check - -prevailing winds, outside air vents for HVAC, traffic near vents	
<b>Inside building:</b> check—Temp (69-79 F), RH (30-60%), CO2 (700ppm+ outside reading) should not exceed this, CO (0-2ppm), Outside Airflow (20cfm/person)	See Map
<b>Additional Inside building info:</b> check—partitions blocking airflow, ceiling tile (dampness, stains, breaking down), diffusers (open, blocked, diverted), smells (mold, perfume, chemical, etc.), new furniture, additions, carpet, carpet cleaning, new cleaning products (general housekeeping practices), to hot, cold, dry, moist.	Plenum wall blocked Water intrusion and damage
<b>Ventilation</b> – survey of all general and local ventilation systems	IFR
<b>Overall condition</b> of HVAC system and maintenance plan.	
Obtained CO2, Temp, RH monitoring	Yes
Provide <b>Photographs</b> of exterior / interior of each facility, each ventilation system any other areas or conditions pertinent to the survey	Yes



Check <b>building occupancy</b> : How many military personnel, how many civilian personnel	22 Full-time personnel at Armory 1 IFR Custodian, SFC Allen Hunt
Any <b>civilian activities</b> in facility (cub scouts, classes, day care, parties etc)	NO
Conduct a <b>safety walkthrough</b> of entire facility document any safety deficiencies found.	Completed
<b>Sampling</b> – (Air) shall be conducted to ensure employees are not being exposed to any occupational health hazards – (Bulk) whenever applicable, e.g., paint chips, carpet, paneling – (Wipe) whenever applicable, e.g., floors (break room, general work), <b>Scotch Tape samples</b> for molds	Wipes – total of 6 plus one blank Air – N/A Mold - N/A
Submit <b>final written report</b> within 30 days after receipt of sample results. Which includes: <b>4 comb bound final reports</b> with attachments, <b>CD</b> of each facility surveyed, <b>POC, phone #</b> and facility <b>address</b> included in <b>Introduction</b> portion.	
<b>Appendices</b> – should include: <b>Shop layout</b> with locations of measurements of local and general exhaust fan; sampling & ventilation data and <b>this Checklist</b>	

17 Nov 14



# ARMY NATIONAL GUARD INDUSTRIAL HYGIENE - SOUTHWEST

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

## Industrial Hygiene Site Assistance Visit

**Billings Armory**  
**2915 Gabel Road**  
**Billings, MT 59102**

10510 Superfortress Avenue, Suite C, Mather, CA 95655

(916) 854-1494



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

ARNG-CSG-P

5 OCT 2015

MEMORANDUM THRU Montana Army National Guard, ATTN: **Non-Responsive** (SS), 1956 Mt. Majo St., Room 1009, Helena, MT 59636

FOR Commander, 443rd Signal, Billings Armory, 2915 Gabel Road, Billings, MT 59102

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for Billings Armory, 2915 Gabel Road, Billings, MT 59102, conducted on 17 NOV 2014.

1. References. See survey report.

2. General.

a. At the request of the NGB Industrial Hygiene, Southwest (IHSW) Region, an Industrial Hygiene Site Assistance Visit and cursory review of safety related items and programs was conducted at the Billings Armory, 2915 Gabel Road, Billings, MT 59102, conducted on 17 NOV 2014.

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

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

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

e. There were several organizations identified as co-tenants during this IHSAV. The 163<sup>rd</sup> Infantry, 484<sup>th</sup> MP's, 1063<sup>rd</sup> Surface Maintenance, 190<sup>th</sup> CSSB, Navy, and Marine Corp all appear to be tenants at the time of this IHSAV.

3. Findings. See survey report.

4. Commendable.

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



ARNG-CSG-P

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHS AV) for Billings Armory, 2915 Gabel Road, Billings, MT 59102, conducted on 17 NOV 2014.

## 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. The observations made during this site visit indicate there is an Indoor Firing Range (IFR) located within the facility. The IFR space is reported to be locked, empty of storage, and occupancy is prohibited. Wipe sampling collected from within the IFR space returned with elevated ( $> 40 \text{ ug/ft}^2$ ), between 11,545 and 1,700  $\text{ug/ft}^2$  on IFR fixtures and substrates. Although the lead levels reported for the other areas of the facility are comparatively low to other like spaces observed within the IHSW Region, they do raise concerns regarding origin, depth, and scope for lead levels throughout the other areas of the facility as it relates to elevated lead levels. (RAC 2)

(1) Recommend conducting a Holistic Lead Evaluation of facility to properly and clearly identify the lead impact. This evaluation will provide the command with a clear assessment of areas that potentially could impact the facility and occupants. During this opportunity Hazard Assessments (HA's) for processes involving facility maintenance and repair activities may be developed.

(a) IFR. - Determine status of IFR - Active IFR, Nonfunctional IFR, Closed IFR, and disposed. Collect appropriate samples to identify lead levels and identify potential areas/systems that may impact other areas of facility and occupancies. Collect representative sampling of the IFR area.

(b) Source identification and confirmation. Evaluate facility and surrounding environment to validate and identify any and all potential lead sources, i.e. wipe, soil, and air sampling.

(c) HVAC and Air Handling Systems/Equipment. Evaluate Air Handling Equipment to determine lead levels and how elevated lead levels may impact facility, ventilation systems, and occupants. Collect wipe sampling from both upstream and downstream airflows of the air handling equipment to properly identify any elevated lead levels and provide corrective measures.

(d) Facility Air Handling Duct Systems. Evaluate facility air ducting through the collection of wipe sampling at supply and return registers within facility. Include wipe sampling from within duct systems to further clarify elevated lead levels.

(e) Exterior Roof Top areas. Evaluate roof top air handling systems and any ventilation systems identifying any potential lead particulate entry routes into the facility areas,

**ARNG-CSG-P**

**SUBJECT:** Executive Summary for Industrial Hygiene Site Assistance Visit (IHS AV) for Billings Armory, 2915 Gabel Road, Billings, MT 59102, conducted on 17 NOV 2014.

collect representative roof top air and roof top wipe samples to verify lead levels.

(f) Non-Occupied Spaces.

(1) Above ceiling spaces. Evaluate and collect wipe samples of all crawl spaces, plenum areas, and above drop ceilings to determine lead levels and how elevated lead levels may impact facility and occupants.

(2) Below flooring. Evaluate below floor crawl spaces to determine lead levels and methods to remediate if necessary. If the facility does not have these spaces the final evaluation must indicate such.

(3) Plenum areas. Evaluate all plenum spaces to ensure a complete understanding for how these spaces were designed/used for air circulation. These may prove to significantly enhance lead migration throughout the facility.

(g) Occupancy Density and Occupancy Types. Identify owning unit by Unit Identification Code (UIC), co-tenant organizations (include UIC), status of ARNG personnel (AGR, TECH., IDT, State (maintenance), Contract, Civilian, Volunteer(s), youth programs, and any other activities conducted at facility.

(1) Based on occupancies observed, provide notifications and education – Personal Protective Equipment (PPE) usage requirements, routine cleaning methods (general housekeeping), measures personnel should take to protect their health (frequent washing (hands/clothes), eating, drinking, etc.) to all personnel.

(2) Recommend the State ARNG determine what Non-ARNG occupancies should be allowed to occupy or utilize the facility prior to the conclusion of the lead evaluation.

(h) Occupied spaces (wipe sampling and area air sampling). Collect representative wipe samples to identify elevated lead levels and identify any potential areas/systems that may impact other areas of facility and occupancies. This sampling regime should include air sample collection for all spaces persons may enter, to properly identify inhalation hazards.

(i) It is important for the State ARNG take a holistic approach to remove all potential and existing lead hazards from within this facility by treating/remediating all non-occupied, as well as occupied, areas of this facility.

(j) It is important for all remediation activities be followed by post-remediation sampling verification. Recommend an ARNG Industrial Hygiene resource be utilized to verify all post-remediation/cleaning activities and are completed IAW the AR, ARNG, and UT ARNG Scope of Work. This will ensure lead levels are acceptable for re-occupancy and all work has been conducted accordingly.



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**SUBJECT:** Executive Summary for Industrial Hygiene Site Assistance Visit (IHS AV) for Billings Armory, 2915 Gabel Road, Billings, MT 59102, conducted on 17 NOV 2014.

(2) **Occupant Notifications.** It is important for the State ARNG make appropriate notifications to all occupants outlining the potential hazards, measures persons must take to ensure their health, and to outline the State ARNG's plan to remediate (abate), if necessary, the elevated lead levels within the facility as required by Federal, State, and local laws, regulations, and requirements. At the minimum, the following occupancy groups should be included within the notifications: AGR, IDT personnel, state employees, contract employees, youth program personnel, and all civilians. Note, the attached report may provide co-tenant organizations for inclusion of notifications. Documentation of notifications should be maintained by the facility command for future reference. (reference 29 CFR 1910.1025 as a resource guide)

(3) As indicated above, it is important for State ARNG to determine a classification of this IFR space to properly implement the appropriate control measures for continued occupant health and to control lead surface contamination to "as clean as possible," i.e. 40ug/ft<sup>2</sup>, throughout the non-IFR areas of the facility. Also note, given the IFR status criteria below, the state should identify all IFR's within the state and determine a status for each. The following are provided:

(a) **Active IFR.** The range is used, or can be used, for the approved purpose. The IFR must be maintained and operated in accordance with the criteria outlined in NGR 385-15.

(b) **Nonfunctional IFR.** The IFR has been removed from active use, and has not been successfully cleaned and converted.

(c) **Closed IFR.** The IFR was removed from active use, successfully cleaned, and converted in accordance with NG PAM 420-15, and has been verified as having acceptable surface lead levels by an ARNG Industrial Hygienist (Office of Personnel Management (OPM) 0690 job series).

(d) **Disposed.** The facility containing the IFR is no longer accountable by the ARNG due to demolition or turnover to another entity.

(4) **Medical Surveillance.**

(a) It is important for the State Occupational Health, or Medical Service Corp, determine the medical surveillance requirements based on occupancy type and occupancy responsibilities, i.e. administrative personnel, state maintenance workers, contract personnel, civilian population, and personnel who maintain or support IFR operations.

b. Although this IHS AV's focus was not to evaluate the IFR area, the other area wipe samples collected returned results below the 40 ug/ft<sup>2</sup> threshold but are present. Prevention efforts should continue to ensure the workplace is as free as practical. **(RAC NOT ASSIGNED)**

(1) **Recommend continued cleaning within the administrative offices, kitchen, and**

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**SUBJECT:** Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for Billings Armory, 2915 Gabel Road, Billings, MT 59102, conducted on 17 NOV 2014.

communal areas to maintain lead particulate concentrations below the ARNG standard of 40ug/ft<sup>2</sup>. Utilize the enclosed Clean-up SOP as a guide to assist with the prevention efforts. Ensure personnel clean-up area(s) and tables after weapons cleaning activities. Tables used for weapons cleaning should be marked, "For Weapons Cleaning Only," when utilized as such. (DODI 6055.01 Appendix to Enclosure 4, date 14 OCT 2014)

c. During this IHSAV an Asbestos Containing Material (ACM) Management Plan could not be located. This facility was constructed in approximately 2000, and asbestos use during the facility construction is unlikely. (RAC NOT ASSIGNED)

(1) No action necessary.

d. The Material Safety Data Sheet (MSDS) format is still used at the facility to list and outline the harmful chemicals/products within the facility. The new format Safety Data Sheets (SDS) should be utilized to comply with the current Hazard Communication Program. (para. 3.5 and 29 Code of Federal Regulations (CFR) 1910.1200) (RAC 4)

(1) Update current chemical inventory list and acquire all current SDS's for the hazardous materials used in this facility.

e. Several Fire Extinguishers not inspected/checked Annually/Monthly as required. (para. 3.6) (RAC 3)

(1) Conduct and document Monthly/Annual inspections/checks accordingly.

## 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.



**SUBJECT:** Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for Billings Armory, 2915 Gabel Road, Billings, MT 59102, conducted on 17 NOV 2014.

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

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

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

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

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

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

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

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

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

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

## **8. IHSW recommends the Senior Unit Commander of this Facility and any Co-Tenant Organizations or Units, review and provide assistance with implementation of these**

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**SUBJECT:** Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for Billings Armory, 2915 Gabel Road, Billings, MT 59102, conducted on 17 NOV 2014.

recommendations. This will educate the chain of command and allow the unit or co-tenant organizations to take any necessary precautions or actions required by them and their personnel.

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

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

**Non-Responsive**



NGB, IHSW, CIV  
Regional Industrial  
Hygiene Manager





Industrial Hygiene Southwest  
Violation Inventory Log  
LOG OF SCHEDULE OF CORRECTIVE ACTION - COMPLIANCE WITH SAFETY AND HEALTH STANDARDS  
BILLINGS ARMORY, MONTANA 59102

CONTROL NUMBER	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/NCIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
<b>BAMT-11172014-3.1</b> CLOSED <input checked="" type="checkbox"/>	Lead levels exceeded the minimum requirements.	Armory	2	Recommend conducting a Holistic Lead Evaluation of Facility to properly and clearly identify the lead impact. This evaluation will provide the command with a clear assessment of areas that potentially could impact the facility and occupants. During this opportunity Hazard Assessments (HA's) for processes involving facility maintenance and repair activities may be developed.					Occupational Safety and Health Administration (OSHA) standard for lead. 1910.1025 (n)(1)
<b>BAMT-11172014-3.1</b>	Although this IHSAV's focus was not to evaluate the IFR area, the other area wipe samples collected returned results below the 40 ug/ft2 threshold but are present. Prevention efforts should continue to ensure the workplace is as free as practical.	Armory	<b>RAC NOT ASSIGNED</b>	Recommend continued cleaning within the administrative offices, kitchen, and communal areas to maintain lead particulate concentrations below the ARNG standard of 40ug/ft2. Utilize the enclosed Clean-Up SOP as a guide to assist with the prevention efforts. Ensure personnel clean-up areas and tables after weapons cleaning activities. Tables used for weapons cleaning should be marked "For Weapons Cleaning ONLY", when utilized as such.					DODI 6055.01 Appendix to Enclosure 4 date 14 OCT 2014, IHSAV Lead SOPs, 29CFR 1910.1025, ARNG - CSG All States Memo dated 23 2015

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**Industrial Hygiene Southwest**  
*Violation Inventory Log*  
**LOG OF SCHEDULE OF CORRECTIVE ACTION - COMPLIANCE WITH SAFETY AND HEALTH STANDARDS**  
**BILLINGS ARMORY, MONTANA 59102**

CONTROL NUMBER	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/INCOIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
<b>CLOSED</b> <input checked="" type="checkbox"/>									
BAMT-11172014-3.2	Asbestos Containing Material (ACM) Management Plan could not be located during this IHSAY	Armory	RAC NOT ASSIGNED	This Facility was constructed in approximately 2000, and asbestos use during the facility construction is unlikely. No action necessary.					29 CFR 1910-1001
BAMT-11172014-3.5	The Material Safety Data Sheet (MSDS) format is still used at the facility to list and outline the harmful chemicals/products within the facility. The new format Safety Data Sheets (SDS) should be utilized to comply with the current Hazard Communication Program.	Armory	4	Update current chemical inventory list and acquire all current SDS's for the hazardous materials used in this facility.					(CFR 1910.120)
BAMT-11172014-3.6	The Fire extinguishers were found to be behind on monthly inspections.	Armory	3	Conduct and document Monthly / Annual inspections/checks accordingly.					29 CFR 1910.157(b)(1).



- 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.

# MONTANA ARMY NATIONAL GUARD

## BILLINGS ARMORY

2915 Gabel Rd.  
Billings, MT 59102  
(406) 324 5414



Submitted to:

**Non-Responsive**

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



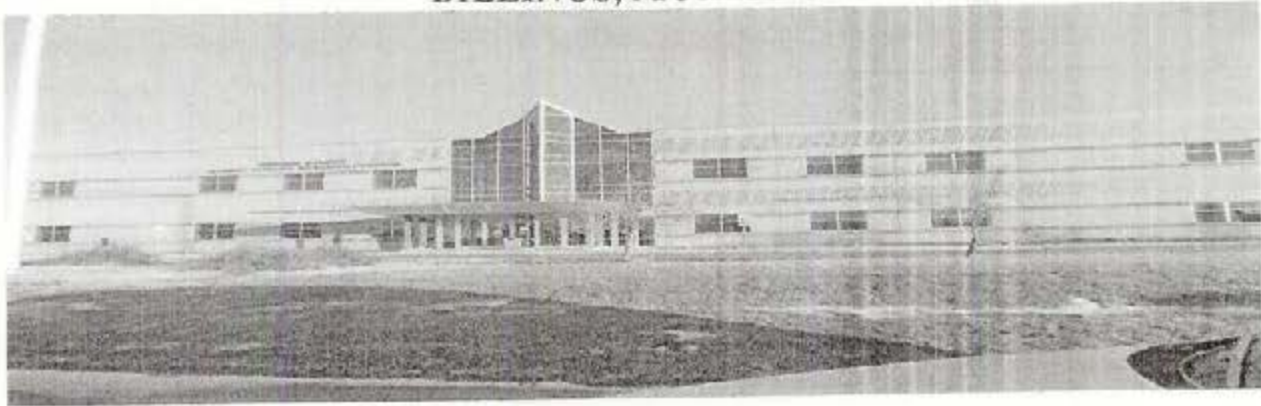
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Appendix B	Assessment Criteria
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## INDUSTRIAL HYGIENE ASSISTANCE VISIT BILLINGS ARMORY BILLINGS, MONTANA



### 1.0. Introduction and Background

1.1. This report summarizes the results of the Industrial Hygiene (IH) Survey conducted at the Billings Armory in Billings, MT on November 17, 2014. The Army National Guard of Industrial Hygiene Southwest Regional Manager (ARNG-IHSW) requested Aloha World to visit the Billings Armory to evaluate ventilation, lighting, noise, and verify vehicle and hazardous materials inventories. The IH Survey also included an interview with **Non-Responsive** regarding industrial hygiene, OSHA training compliance, personnel Federal Employees Compensation Act (FECA) claims, as well as safety standards in the work area. Finally, the IH Assessment included the development of employee profiles as baseline administrative occupational health records for employees. **Non-Responsive** from Aloha World completed this survey.

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

1.3. The Billings Armory supports the 443<sup>rd</sup> signal, 163<sup>rd</sup> Infantry, 484<sup>th</sup> MP's, 1063<sup>rd</sup> Surface Maintenance and the 190<sup>th</sup> CSSB. The Armory has twenty full time guard members and approximately 600 guardsmen and women on drill weekend. This armory was constructed in 2000. The armory has offices used for administrative purposes and also contains a drill floor, arms room, supply room, classroom, indoor firing range, maintenance bay and storage. The armory is in a large building and shared with the Navy and Marine Corp.

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Industrial Hygiene Survey  
Billings Armory

There is an Indoor Firing Range (IFR) at this facility. The IFR is locked, empty and no one is allowed to go into the IFR.

Vehicle maintenance is done at FMS 6, located about a mile away from the Armory.

## 2.0. Survey Procedures

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

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

Illumination measurements were taken in several areas of this facility using a Konica Minolta Light Meter, Model TL-1. Measurements in the office and classroom areas were taken at typical work locations, such as the tops of desks and near computer workstations.

### Equipment Used

Type	Model Number	Serial Number	Calibration Date
Konica Minolta	TL-1	00279029	September 2014

## 3.0. Findings and Recommendations

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

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**Lead Wipe  
Table 3.1.A.**

<i>Sample ID</i>	<i>AREA</i>	<i>Photo #</i>	<i>Result ug/ft2</i>
111714-1	Control	NA	BDL
111714-2	North drill hall	2	22.7
111714-3	Center drill hall	3	23.6
111714-4	South drill hall	4	BDL
111714-5	West drill hall	5	BDL
111714-6	East drill hall	6	BDL
111714-7	North IFR	7	11,545
111714-8	Center IFR	8	8,909
111714-9	South IFR	9	3,673
111714-10	West IFR	10	1,700
111714-11	East IFR	11	7,036

BDL= Below Detection Limits

ug/ ft2= Micrograms per Square Foot

**Recommendation:** Dry sweeping should be restricted in areas where accumulations of dust are present to prevent toxic metals on surfaces from becoming airborne. The cleaning of loose material from horizontal surfaces should be conducted with HEPA (High Efficiency Particulate Air) vacuums and/or wet mopping/cleaning method. Any area that exceeds 40 ug/ft<sup>2</sup> should be thoroughly decontaminated. Clean vault/storage area after every episode of cleaning weapons to help prevent migration of this heavy metal.

3.2. Asbestos Survey. Non-Responsive was asked during this survey about the presence of asbestos and he advised no asbestos has ever been found or suspected in this armory.

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

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

ACM is defined by the EPA, as any material containing greater than one percent of asbestos. ACMs are categorized as being either friable or non-friable. Friable ACMs are those materials that can be easily crumbled, pulverized, or otherwise broken up using hand or finger pressure when dry, and are materials considered more likely to produce airborne asbestos fibers. Non-friable ACMs are materials that do not meet the above test, and are considered less likely to produce airborne asbestos fibers. Non-friable ACMs are further categorized into Category I non-friable ACM (packing's, gaskets, resilient floor coverings, and asphalt roofing products) and Category II non-friable ACM (materials not included in Category I).

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Billings Armory

### Limitations and Exclusions of Findings

This asbestos survey and assessment was performed using procedures and a level of diligence typically exercised by professional performing similar services. However, asbestos-containing material (ACM) can be present in a structure, but not identified using ordinary investigative procedures.

No asbestos survey can completely eliminate uncertainty regarding the presence of ACM. The level of diligence and investigative procedures are intended to reduce, but not eliminate, potential uncertainty regarding the presence of ACM.

The only way to tell if an object contains asbestos by looking at it is if the material is labeled. Otherwise, you should have it sampled and analyzed by a qualified professional. Until you receive the results, treat the material as if it contains asbestos. Samples should be extracted only by qualified professionals. If improperly done, extracting samples can be more hazardous than leaving the material undisturbed.

**3.3 Indoor air quality and HVAC Systems-** The armory is heated and cooled through a central air system. The system is maintained on a regular basis by the FMO.

Building air temperature, within this facility, was in the comfort range for the occupants during this survey period. The day of the survey it was 25 degrees Fahrenheit outside. Inside air temperature is recommended to be between 68-75 degrees Fahrenheit and the relative humidity is to range from 30-60%. The indoor temperature was 74 degrees Fahrenheit. Humidity levels above 60 percent can result in proliferation of bacteria and fungi, while levels below 30 percent can cause dry eyes, skin, and mucous membranes. There were signs, and the armory has a history, of water leakage in the roof.

**Recommendation:** Check ceiling for water leakage. Repair all leaks and replace water damaged materials, e.g., ceiling tile, sheet rock, etc. General Duty Clause 5(a)(1)

**3.4. Exhaust and Ventilation Systems-** The Billings Armory only uses the maintenance bay on drill weekend for FMCS. All vehicle maintenance is done at FMS 6, located a mile away from the Armory.

**3.5. Hazard Communication & Hazardous Materials Use and Storage-** All Hazmat and POI's are stored and maintained in a flammable locker located in maintenance bay. Initial HazCom and annual training is kept on file for employees. Chemicals for equipment maintenance and janitorial uses are maintained at the facility in minimal quantities. The SDS file is still listed as MSDS since the Globally Harmonized System (GHS) Classification of Labeling Chemicals has just taken effect this year and the documents are still MSDS documents.

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Industrial Hygiene Survey  
Billings Armory

Small quantities of cleaning products, utilized by the workers, were located in the janitors' closet. Arms custodians, for cleaning purposes, should be utilizing user and environmental friendly products, while the more harmful products should be properly disposed of. A well-ventilated area should be utilized when using any solvent products, along with the appropriate Personal Protective Equipment (PPE) as designated on the MSDS information sheets. The MSDS did not have a table of contents and needs to be updated to meet the new SDS format.

**Recommendation:** Update all MSDS for the facility with the new SDS format by June 2016 CFR 1910.120.

**3.6. Physical Safety and Condition of Facility-** A physical walk through of the facility was conducted. Overall, housekeeping was found to be in above average condition. Electrical breaker boxes were properly labeled and accessible. According to **Non-Responsive** the wiring was put in improperly during the 2011 renovation by the state. The Army National Guard is in the process of fixing the wiring.

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

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

**3.7. Sound Level Survey-** A noise survey was not conducted in this facility.

**3.8. Illumination Survey-** Illumination levels that were measured throughout this facilities office and classroom areas can be found on the floor plan in Appendix D. The numbers represent the illumination level in foot-candles (FC). In general, the measurements were taken at task surface level, such as on desks. Measurements not taken on a desk were taken at waist level.

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

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

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Industrial Hygiene Survey  
Billings Armory

3.9. Safety Policies, Training, and Record Keeping – All safety classes are taken at FMS 1.

#### 4.0 Industrial Hygienist Certification and Project Limitations

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

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

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

Furthermore, it is emphasized that the final decision on how much risk to accept always remains with the client since Aloha World is not in a position to fully understand all of the client's needs. 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.

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Billings Armory

## 5.0 Technical Assistance

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

**Non-Responsive** IH Tech  
Aloha World Environmental

Aloha World



Industrial Hygiene Survey  
Billings Armory

## Appendix A: References

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

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

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

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

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

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

Corps of Engineers Guide Specification, CEGS-1585.1, Overhead vehicle tailpipe (and welding fume) Exhaust Systems, May 1984.

DA PAM 40-ERG, Ergonomics

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

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

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

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

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

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

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

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

Aloha World

## **Appendix B: Assessment Criteria**

### **A. Ventilation Standards**

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

### **B. Illumination Standards**

Illumination measurements were compared with recommendations made by the Industrial Engineering Society (IES)/American National Standards Institute (ANSI) RP7-1991 Standard and MIL-STD1472E.

### **C. Noise**

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

### **D. Air Sampling**

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

### **E. Risk Assessment Codes**

Risk Assessment Codes (RACs) are included in this report to quantify the risk of particular operations to employees and to establish funding priorities for corrective actions. RACs are assigned with regard to hazard severity and mishap probability. The type, length, and route of exposure are taken into consideration, as are the medical effects that would occur with such exposures.

Aloha World



Photo Log



Photo #1 – Billings Armory

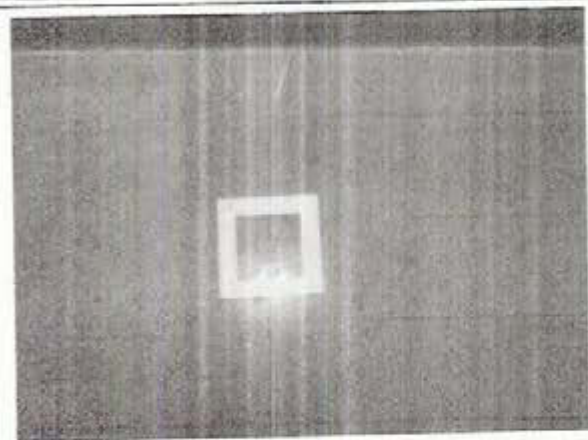


Photo #2- North drill hall wipe

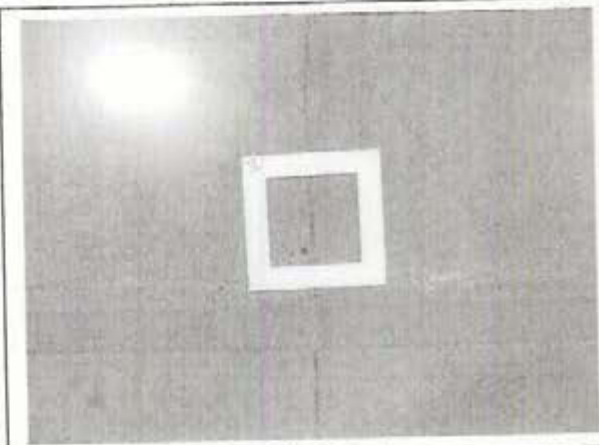


Photo #3- Center drill hall wipe

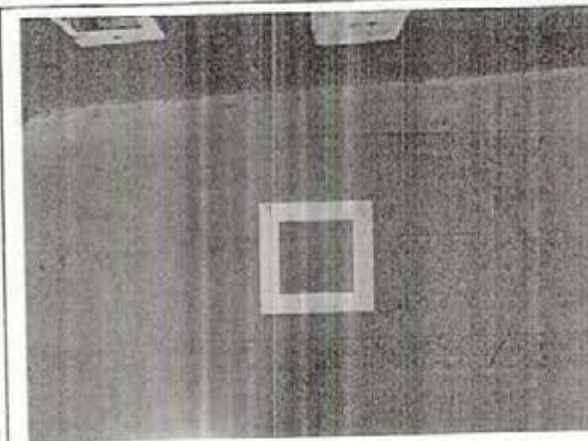


Photo #4- South drill hall wipe

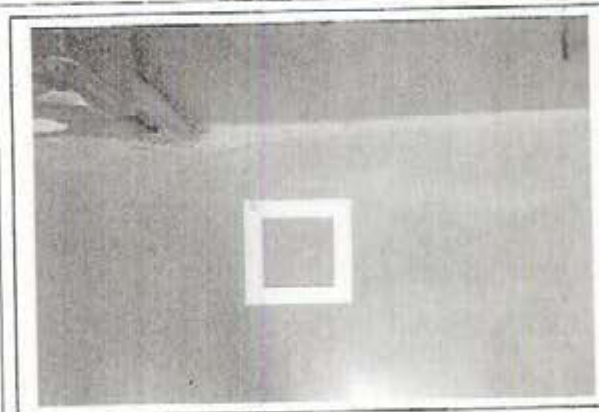


Photo #5 – West drill hall wipe

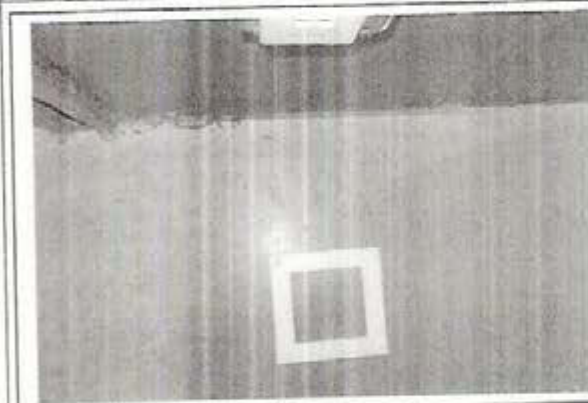


Photo #6 – East drill hall wipe

Photo Log

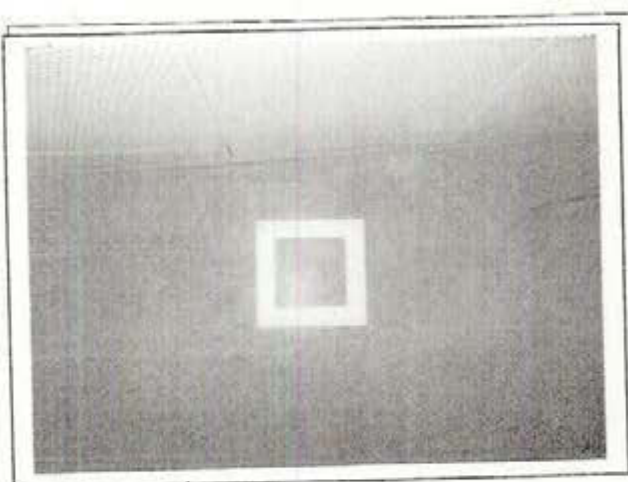


Photo #7 – North IFR wipe

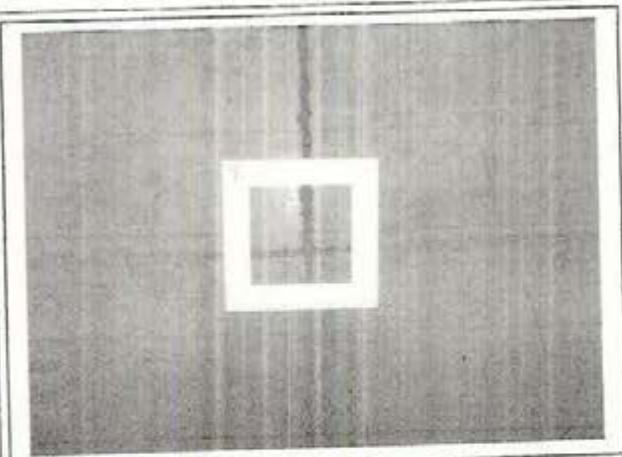


Photo #8- Center IFR wipe

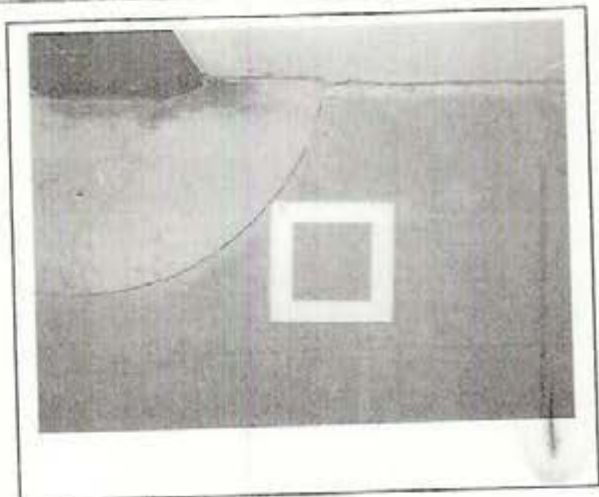


Photo #9 – South IFR wipe

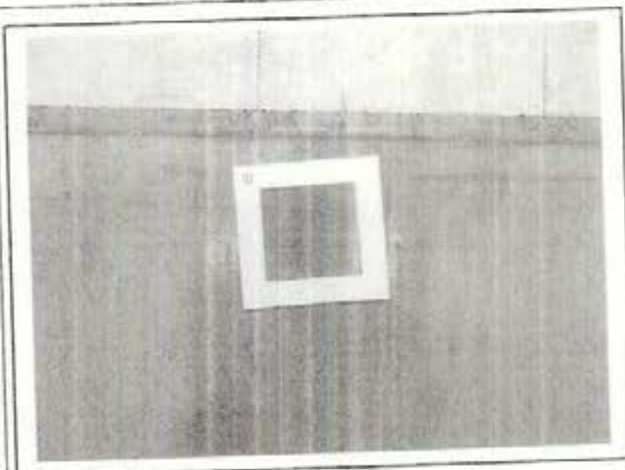


Photo #10 – West IFR wipe

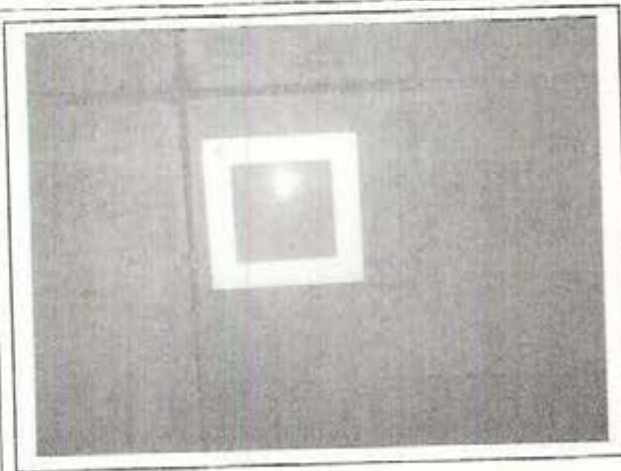


Photo #11 –East IFR wipe



Photo #12 –IFR



Photo Log



Photo #13 – Exterior IFR



Photo #14- Maintenance bay

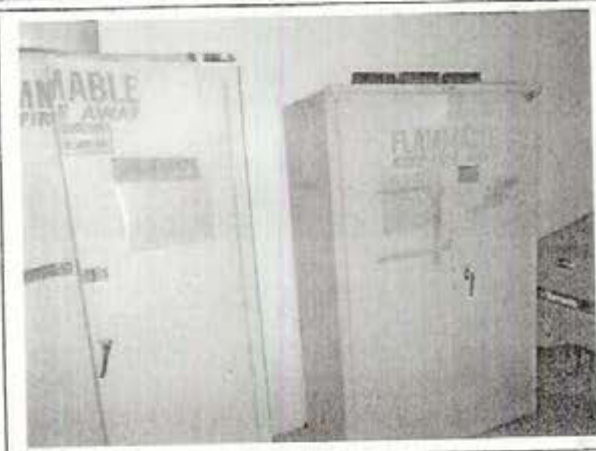


Photo #15- Hazmat storage



Photo #16- Emergency Eye wash

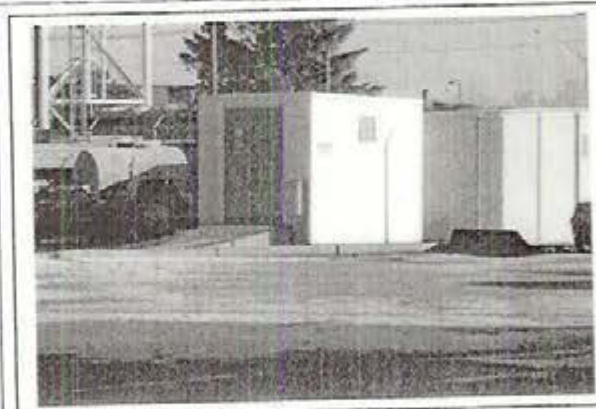


Photo #17 –POL storage

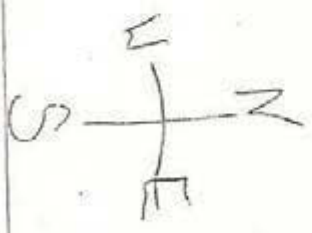


Photo #18 – Janitorial closet

Marine Corp

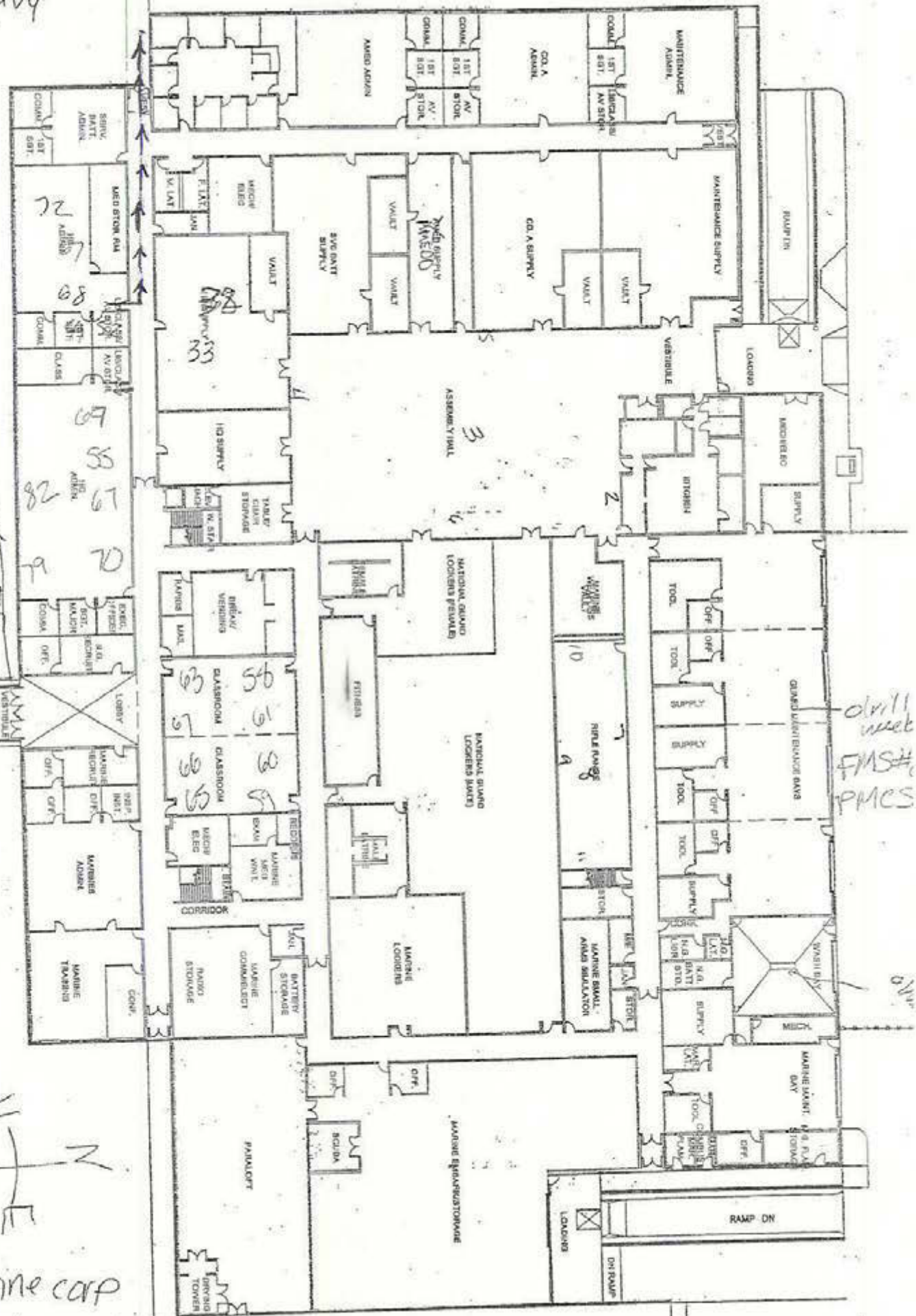
upstairs  
classroom  
62 51  
48 59  
53 5

4235  
38



marine corp

Facility Diagram





# RESERVOIRS ENVIRONMENTAL, INC.

5801 Logan St., Suite 100  
Denver CO 80216

## TABLE ANALYSIS: LEAD BY WIPE SAMPLING

RES Job Number: RES 307683-1  
Client: Aloha World  
Client Project Number / P.O.: 111714  
Client Project Description: Billings Armory  
Date Samples Received: December 12, 2014  
Analysis Type: USEPA SW846 3050B / AA (7420)  
Turnaround: 3-5 Day  
Date Samples Analyzed: December 19, 2014

Client ID Number	Lab ID Number	Sample Area (sq.ft.)	LEAD (µg)	Reporting Limit (µg/ft <sup>2</sup> )	LEAD CONCENTRATION (µg/ft <sup>2</sup> )
111714-1 Bathroom	EM 1313461	0.11	BRL	22.7	BRL
111714-2 North Drill Hall	EM 1313462	0.11	2.5	22.7	22.7
111714-3 Center Drill Hall	EM 1313463	0.11	2.6	22.7	23.6
111714-4 South Drill Hall	EM 1313464	0.11	BRL	22.7	BRL
111714-5 West Drill Hall	EM 1313465	0.11	BRL	22.7	BRL
111714-6 East Drill Hall	EM 1313466	0.11	BRL	22.7	BRL
111714-7 North C1FR	EM 1313467	0.11	1,270	22.7	11,545
111714-8 Center C1FR	EM 1313468	0.11	980	22.7	8,909
111714-9 South C1FR	EM 1313469	0.11	404	22.7	3,673
111714-10 West C1FR	EM 1313470	0.11	187	22.7	1,700
111714-11 East C1FR	EM 1313471	0.11	774	22.7	7,036

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

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

BRL = Below Reporting Limit

P: 303.664-1388  
F: 303.177.1375

5801 Logan Street, Suite 100 Denver, CO 80216

BEST AVAILABLE COPY

Data

Non-Responsive

1-866-RES-ENV  
www.reslab.com

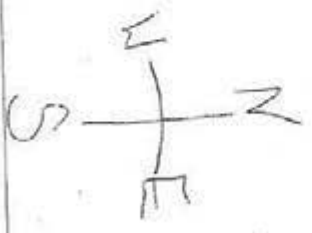
Posted to NGB FOIA Reading Room  
May, 2018

FOIA Requested Record #J-15-0085 (MT)  
Released by National Guard Bureau  
Page 103 of 190

Marine Corps

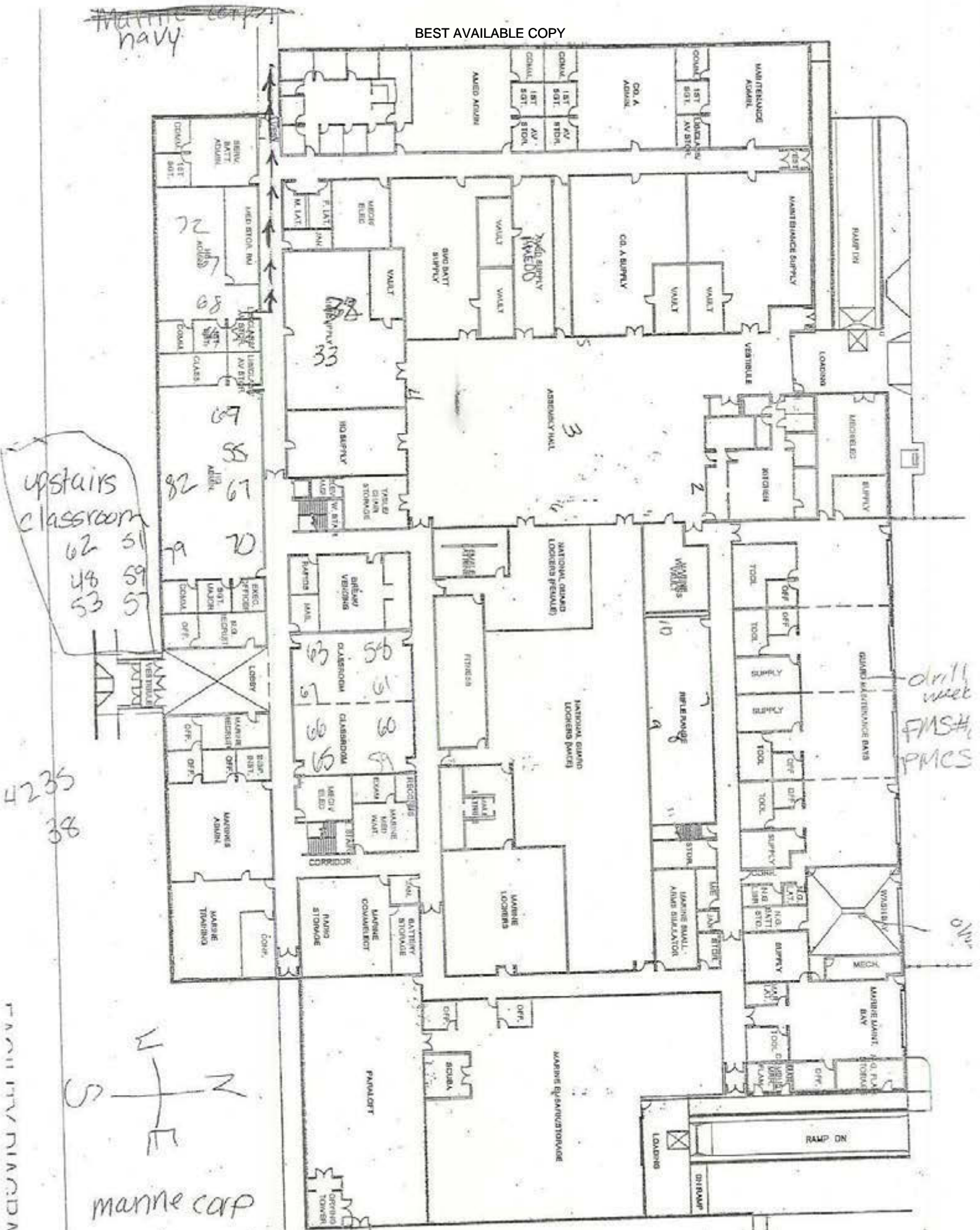
upstairs  
classroom  
62 51  
48 59  
53 57

4235  
38



Marine Corp

Facility Diagram





## PERSONNEL LIST FOR BILLINGS ARMORY

Non-Responsive



Non-Responsive



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

Five <b>lead wipe</b> samples collected from drill floor (take samples from dusty horizontal floor surfaces)	✓
Are any <b>weapons</b> cleaned in the facility, if yes where are they cleaned?	Yes
Additional <b>lead wipe</b> samples taken from 25% of the rest of the building -- (on floor areas only)	CIFR
Is there a <b>converted indoor firing range</b> ? If so collect additional wipe samples IAW the SOW.	Yes
Is there any peeling paint? Take bulk sample if able.	none
Are there any signs of water damage or mold?	07 - broken water main broke
Any suspected ACM? Where and what condition is it in. Bulk sample if able.	no
Quality of housekeeping	good
HVAC maintenance plan in place?	yes - by state
Overall condition of HVAC system	good
Obtained CO2, Temp, RH monitoring	74°
<b>HAZMAT</b> inventory on hand (make copies for the report), MSDS available for all materials.	SDS - needs updated
<b>HAZMAT</b> storage, Condition of lockers, if outside storage building is used is it ventilated and does it meet OSHA standards.	POL storage - not attached to bldg ↳ fire ext attached on other Bldg outs



Fire alarm in working condition - -not usually in place in older armories	yes
Fire extinguishers in place and properly identified and mounted	yes
Evidence of monthly fire extinguisher inspections	no
Annual fire extinguisher inspections tags current	yes
Are eye wash stations available in areas where hazardous materials are used and are they inspected weekly (inspections must be documented)	near battery room - not documented
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 - quarterly safety brief, quarterly safety committee
Any Photo labs	no
Any hazardous noise sources	no
Light levels checked throughout building	good
Breaker panels properly labeled with no exposed wiring	good
Check building occupancy 1. How many military personnel, how many civilian personnel 2. What types of units occupy facility, i.e. Administrative, Maintenance, etc.?	20 full 600+1 - approx on drill
Any civilian activities in armory (cub scouts, classes, day care, parties etc)	yes - school
Obtain two lead air samples	On IHSW Request Only

Evaluate Kitchen Stove Hood Flow if Present LAW NFPA Standard 96.	no switch
Collect Source Noise Measurements of Kitchen Appliances and Document Using DD 2214	n/a
Conduct a safety walkthrough of entire facility document any safety deficiencies found.	✓
Take photos of outside of building, all sample points and any pertinent hazards or concerns.	✓
Name of Armory, POC, phone #, address and organizations in Armory	Non-Responsive
(Add Checklist to Report)	
	(Add Checklist to Report)



BEST AVAILABLE COPY  
Industrial Hygiene Survey  
Billings Armory

**RECOMMENDATIONS**

1. Occupational Safety and Health Administration (OSHA) standard for lead; 1910.1025 (h) (1) require that all surfaces shall be maintained as free as practicable of accumulations of lead. Dry sweeping should be restricted in areas where accumulations of dust are present to prevent toxic metals on surfaces from becoming airborne. The cleaning of loose material from horizontal surfaces should be conducted with HEPA (High Efficiency Particulate Air) vacuums and/or wet mopping. Any area that exceeds 40 ug/ ft<sup>2</sup> should be thoroughly decontaminated
2. Check ceiling for water leakage. Repair all leaks and replace water damaged materials, e.g., ceiling tile, sheet rock, etc. General Duty Clause 5(a)(1)
3. Update all MSDS for the facility with the new SDS format by June 2016 CFR 1910.120.
4. The Fire extinguishers were found to be behind on monthly inspections. Properly inspect all fire extinguishers on an annual and monthly basis. [29 CFR 1910.157(b)(1)].

Aloha World

## Industrial Hygiene Southwest

## Violation Inventory Log

LOG OF SCHEDULE OF CORRECTIVE ACTION - COMPLIANCE WITH SAFETY AND HEALTH STANDARDS  
BILLINGS ARMORY, MONTANA 59102

CONTROL NUMBER	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/NCIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
CLOSED <input checked="" type="checkbox"/> BMT-11172014-3.1	Lead levels exceeded the minimum requirements.	Armory	2	Recommend conducting a Holistic Lead Evaluation of Facility to properly and clearly identify the lead impact. This evaluation will provide the command with a clear assessment of areas that potentially could impact the facility and occupants. During this opportunity Hazard Assessments (HA's) for processes involving facility maintenance and repair activities may be developed.					Occupational Safety and Health Administration (OSHA) standard for lead, 1910.1025 (h)(1)
BMT-11172014-3.1	Although this IHSAs focus was not to evaluate the IFR area, the other area wipe samples collected returned results elow the 40 ug/ft2 threshold but are present. Prevention efforts should continue to ensure the workplace is as free as practical.	Armory	RAC NOT ASSIGNED	Recommend continued cleaning within the administrative offices, kitchen, and communal areas to maintain lead particulate concentrations below the ARNG standard of 40ug/ft2. Utilize the enclosed Clean-Up SOP as a guide to assist with the prevention efforts. Ensure personnel clean-up areas and tables after weapons cleaning activities. Tables used for weapons cleaning should be marked "For Weapons Cleaning ONLY", when utilized as such.					DODI 6055.01 Appendix to Enclosure 4 date 14 OCT 2014. IHSW Lead SOPs, 29CFR 1910.1025, ARNG - CSG All States Memo dated 23 2015





## 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

## Billings Armory Indoor Firing Range (IFR)

2915 Gabel Road  
Billings, MT 59102

07 AUG 2012

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 Montana Army National Guard, Deputy State Surgeon (DSS), PO Box 4789 Fort Harrison, MT 59636-4789

FOR Commander, Billings Armory Indoor Firing Range (IFR), 2915 Gabel Road, Billings, MT 59102

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for the Billings Amory IFR, 2915 Gabel Road, Billings, MT conducted on 7 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 Billings Armory Indoor Firing Range (IFR) at 2915 Gabel Rd., Billings, MT on 07 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.

a. Consider posting signs warning users about laser hazards. (para. 4.5.1) (RAC 4)



**ARNG-CSG-IHSW**

**SUBJECT:** Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for the Billings Amory IFR, 2915 Gabel Road, Billings, MT conducted on 7 August 2012.

b. IFR SOP should be updated to include laser classes, their hazards and proper protective eye wear, as applicable. (para. 4.6.1) (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 and submit for review and obtain approval from the state Industrial Hygiene, Occupational Health and Safety Professions.

**SUBJECT:** Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for the Billings Amory IFR, 2915 Gabel Road, Billings, MT conducted on 7 August 2012.

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 Montana 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**

*FW*  
RON W. FAULL  
NGB, IHSW, CIV  
Industrial Hygiene





**Industrial Hygiene, Southwest  
Hazard Inventory Log  
IFR Billings, MT**

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CONTROL NUMBER	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/NCOIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
CLOSED <input checked="" type="checkbox"/> MTIFR-080712- 4.4.1 <input type="checkbox"/>	Class 1 Laser systems are used for target practice and weapons qualifications.	IFR	4	Consider posting signs warning users about laser hazards.					ANSI Z136.1-2010
MTIFR-080712- 4.5.1 <input type="checkbox"/>	IFR SOP was not available for review.	IFR	4	Update the range SOP to include laser classes, their hazards, and proper protective eye wear as applicable.					ANSI Z136.1-2010

## ***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.**

**INDUSTRIAL HYGIENE SITE ASSISTANCE VISIT  
(IISAV)  
REPORT**

**For**

**MONTANA ARMY NATIONAL GUARD  
Indoor Firing Range  
2915 Gabel Road  
Billings, MT 59102**



**Prepared for:**

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

**Prepared and reviewed by:**

**Non-Responsive**

**Palmer Sciences, Inc.  
3744 Lawrence Drive  
Naperville, IL 60564**

**August 7, 2012**



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## EXECUTIVE SUMMARY

An Industrial Hygiene (IH) Site Assistance Visit (IHS AV) was conducted By **Non-Responsive** CIH of Tammur Sciences, Inc. on August 7, 2012 at the Indoor Firing Range (IFR) located at 2915 Gabel Road Billings, MT 59102. The primary point of contact for information gathered during this survey was the FMS#6 shop supervisor, **Non-Responsive** phone 406-656-0129 ext 5460 e-mail **Non-Responsive**

The IH Assistance Visit was conducted as part of the MTARNG occupational safety and health program and its objectives were to conduct a physical safety inspection of the range, collect lead surface wipe samples, collect area and breathing zone air samples as necessary, measure the volumetric flow of local exhaust ventilation systems, measure illumination levels, warning signs postings, use of personal protective equipment, review the IFR operating procedures, maintenance, and record keeping practices.

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

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





## 1.0 INTRODUCTION

An Industrial Hygiene (IH) Site Assistance Visit (IHSAV) was conducted By [Non-Responsive]  
[Non-Responsive] E. CIH of Tammer Sciences, Inc. on August 7, 2012 at the Indoor Firing Range  
(IFR) located at 2915 Gabel Road Billings, MT 59102. The primary point of contact for  
information gathered during this survey was the FMS#6 shop supervisor [Non-Responsive]  
[Non-Responsive] phone 406-656-0129 ext 5460 e-mail [Non-Responsive]

## 1.1 Objectives

The visit objectives were to evaluate the occupational environment of the indoor firing range to determine the presence of operational health and safety risks and make recommendations for corrective actions or follow-up work to manage those risks. The assistant visit was conducted in the interest of preventing employee illness and in meeting legal obligation where applicable.

## 1.2 Scope of Work

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

- Physical safety inspection of the range;
- Collect lead surface wipe samples;
- Collect area and breathing zone air samples as necessary;
- Measure the volumetric flow of local exhaust ventilation systems;
- Measure illumination levels;
- Warning signs postings;
- Use of personal protective equipment;
- Review the IFR operating procedures, maintenance, and record keeping practices;



## 2.0 PROCESS DESCRIPTION

The Billings indoor firing range is used for weapons firing and qualifications. The range is located in a separate single story structure next to FMS#6 in Billings, Montana and measures approximately 5,600 square feet. The weapons used in this firing range are equipped with a laser simulated target system. The weapons are equipped with a laser type diode that activates a target system once triggered and aimed at the receiving target. The lasers are Class I laser system. This IFR is used by all units in the MTARNG. The range officer is **Non-Responsive** 06-655-6200 ext 5407.

## 3.0 METHODS

Methods used in this assistant visit to collect surface wipe samples, measure local exhaust ventilation air velocity profile, and measure illumination levels are listed below. The data, findings and conditions reported in this survey represent the work conditions existing at the time of the survey. Change in work practices and/or processes may change employee exposure levels.

### 3.1 Lead Wipe Sampling

Metals wipe samples were collected from wall, and floor surfaces in addition to other horizontal surfaces in various locations throughout the range. Unscented and alcohol free baby wipes were used with a 144-square-inch template. 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 H for a laboratory results and chain of custody form.

### 3.2 Ventilation Survey

A TSI Velocicalc Plus hot wire anemometer, Model 8357 S/N 509084, calibrated 09JUL2012, was used to measure air velocities through the range at various locations. Depending on the size of the range, multiple readings are taken across several cross sectional virtual planes along the length of the range to establish air velocity profile across the length of the range. Typically, three or four virtual cross sectional planes are established at the firing line, few feet downstream from the firing line, mid range, and





down range by the bullet trap. Three readings, representing each of the firing positions; standing, kneeling, and prone positions, are taken at each firing lane for each virtual plane. A copy of the annual calibration certificate for this instrument is located in Appendix G.

### 3.3 Illumination Level Monitoring

Illumination measurements were collected using a Minolta light meter (serial 90480719), calibrated 01 May 2012. Measurements were taken at various locations within the range including the firing line and the target area by the bullet trap. Lighting levels as recommended in the American National Standard/ Illuminating Engineering Society (ANSI/IES) Practice for Industrial Lighting Publication ANSI/IES RP-7-1991 were used to compare the results of the illumination survey. A copy of the annual calibration certificate for this instrument is located in Appendix G.

### 3.4 Equipment Used

The following equipment was used for this survey.

Type	Model Number	Serial Number	Calibration Date
TSI VelociCalc™ Meter	8384	02100456	03/2012
Konica/Minolta Luminance Meter	T-10	54136047	05/01/2012

### 3.5 Quality Assurance

Tammer Sciences, Inc. employs, at a minimum, the following methods to help assure quality of field investigations and reports:

- Use of appropriately educated and experienced personnel;
- Documentation of pertinent field and sampling information;
- Continuing education of technical personnel through attendance at training sessions and conferences, and literature review;
- Maintains certification and professional licenses;
- Strict adherence to method requirements, in particular to NIOSH, OSHA, and ANSI standard methods, including strict chain-of-custody protocol;



- Use of accredited laboratories, or, in cases where specific accreditation is not available, choice of laboratories of good reputation, having strong QA/QC programs.
- Calibration of instruments, including field calibration via manufacturers' recommended procedures and routine (typically annual) off-site calibration of equipment via certified third parties.





#### 4.0 OBSERVATIONS AND RECOMMENDATIONS

The indoor firing range is housed within a structure used also for other activities including vehicle roll over simulation. The target practice area is located on an elevated platform within the building and laser type system is used for target practice. The set-up of this range is not typical of the traditional ranges with firing lanes and a bullet trap. No local exhaust ventilation is available. Weapons modified with a laser target system are used to practice and no live ammunition is used. Noise and lead exposures are not an issue with the laser system.

#### 4.1 Lead Surface Wipe Sampling

Lead wipe samples were obtained from select horizontal surfaces, walls, and the range floor. Table 4.1 below lists the location and sampling results:

Table 4.1 Surface Wipe Sampling Results Summary Montana Army National Guard Billings Indoor Firing Range Billings, Montana 07 AUG 2012		
Sample Number	Sample Location	Micrograms of lead (ug) per square foot
IFRW01	Floor northeast quadrant of range	23
IFRW02	Floor northwest quadrant of range	18
IFRW03	Floor southeast quadrant of range	11
IFRW04	Floor southwest quadrant of range	18
IFRW05	West wall midrange	7.3
IFRW06	East wall midrange	39
IFRW07	Top of table in side office	6.1
IFRW08	Top of electrical panel next to roll over simulator	200
IFRW09	Field blank	<2.5



The office of Industrial Hygiene Southwest located in Mather, California, has developed a Standard Operating Procedure (SOP) for lead, which is a blend of OSHA, HUD, and Army regulations. This SOP sets forth a criterion of 40 micrograms per square foot ( $\mu\text{g}/\text{ft}^2$ ) for converted indoor firing ranges, break rooms, floor surfaces, or any area that the public might possibly use for non-military functions. Additionally, a 200- $\mu\text{g}/\text{ft}^2$  criterion has been established for various areas including a firing range where the general public is not normally expected to access.

Analytical results for lead indicate all sampling locations were below the SOP's contamination criterion for lead. The laboratory reports are supplied in Appendix H.

#### **Recommendation**

None

#### **4.2 Exhaust Ventilation System**

No local exhaust ventilation system was available in this range.

#### **4.3 Illumination**

Illumination levels inside the range facilities ranged from 30 to 80 foot candles and consisted of 18 fluorescent light fixtures each containing 3 high efficiency bulbs.

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, 30 FC is the minimum lighting requirements for the range and 100 foot candles at the target. Replacing light bulbs with higher wattage will increase lighting levels. Replacing burnt out light bulbs and cleaning the light fixture should improve the lighting levels.

#### **Recommendations:**

None.





#### **4.4 Range General Condition**

Housekeeping within the range was acceptable.

##### **Recommendation**

None

#### **4.5 Range Warning Signs**

Proper exit signs are posted.

##### **Recommendation**

Since the range is not used with live ammunitions and only with laser equipped weapons, signs warning about laser hazards are recommended.

#### **4.6 Range SOP and documentations**

Range SOP was not available for review.

##### **Recommendation**

Update the range SOP to include laser classes, their hazards, and proper protective eye wear as applicable.



## 5.0 RECURRING OBSERVATIONS

No recurring observations were noted during the visit.

## 6.0 PROJECT LIMITATIONS

This Project was performed using, as a minimum, practices consistent with standards acceptable within the industry at this time, and a level of diligence typically exercised by industrial hygiene and environmental consultants performing similar services. The assistant visit was conducted in the interest of preventing employee illness and in meeting legal obligation where applicable. Based on information provided, reasonable effort was made to conduct a comprehensive survey covering the parameters considered. Results and recommendations are based on information provided, field measurements, and conditions observed during the survey. Changes in work conditions and practices can alter the outcome of the visit.

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

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





## 7.0 PROJECT APPROVAL

This IHSAV was reviewed and approved by:

**Non-Responsive**



October 10, 2012

Sr. Industrial Hygienist

Technical Assistance: For technical assistance regarding information found in this report or the performed survey, please contact **Non-Responsive** 630-369-7956 **Non-Responsive** or **Non-Responsive** of the Southwest Regional Industrial Hygiene Office, 916-854-1491. Contact the State Safety and Occupational Health Office and/or the Regional Industrial Hygienist should any of the operations change, or should the personnel become incapable of following the previous recommendations and subsequent recommendations are needed.

## References

1. American Conference of Governmental Industrial Hygienists (ACGIH), Industrial Ventilation, A Manual of Recommended Practice
2. American Conference of Governmental Industrial Hygienists (ACGIH), Threshold Limit Values for Chemical Substances and Physical Agents and Biological Indices
3. American National Standards Institute (ANSI)/Illuminating Engineering Society (IES), Industrial Lighting.
4. American National Standards Institute, Z358. 1-1998. Emergency Eyewash and Shower Equipment
5. AR 40-5, Preventative Medicine
6. AR 40-10, Appendix B – Health Hazard Assessment Program in Support of Army Material Acquisition Decision Process
7. AR 385-10, The Army Safety Program
8. Corps of Engineers Design Guide DG-415,
9. DA PAM 40-ERG, Ergonomics
10. DA PAM 40-501, Hearing Conservation.
11. National Safety Council, Fundamentals of Industrial Hygiene
12. NOR 385-10, Army National Guard Safety and Occupational Health Program
13. TB MED 503, The Army Industrial Hygiene Program
14. TG022, US Army Environmental Hygiene Agency (USAEHA), Industrial Hygiene Evaluation Guide
15. TG 141, US Army for Health Promotion and Preventive Medicine (USACHPPM) Industrial Hygiene Air Sampling Guide, Nov. 1997
16. Title 29, Code of Federal Regulations (CFR), 2011, revision Part 1910, Occupational Safety and Health Standards.



## Assessment Criteria

### E. 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

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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).

#### **E. Surface Wipe Sampling**

The US Environmental Protection Agency (EPA), under a new standard issued in 2000, considers lead dust as a hazard if levels are greater than 40 micrograms of lead in dust per square foot on floors; 250 micrograms of lead in dust per square foot on interior window sills and 400 parts per million (ppm) of lead in bare soil in children's play areas or 1200 ppm average for bare soil in the rest of the yard. This standard is a major effort by the EPA to identify dangerous levels of lead in paint, dust and soil in order to protect children from lead poisoning. The National Guard Bureau recommends a limit of 200 micrograms per square foot for surface contamination.





Photo #1: Main entrance to the IFR

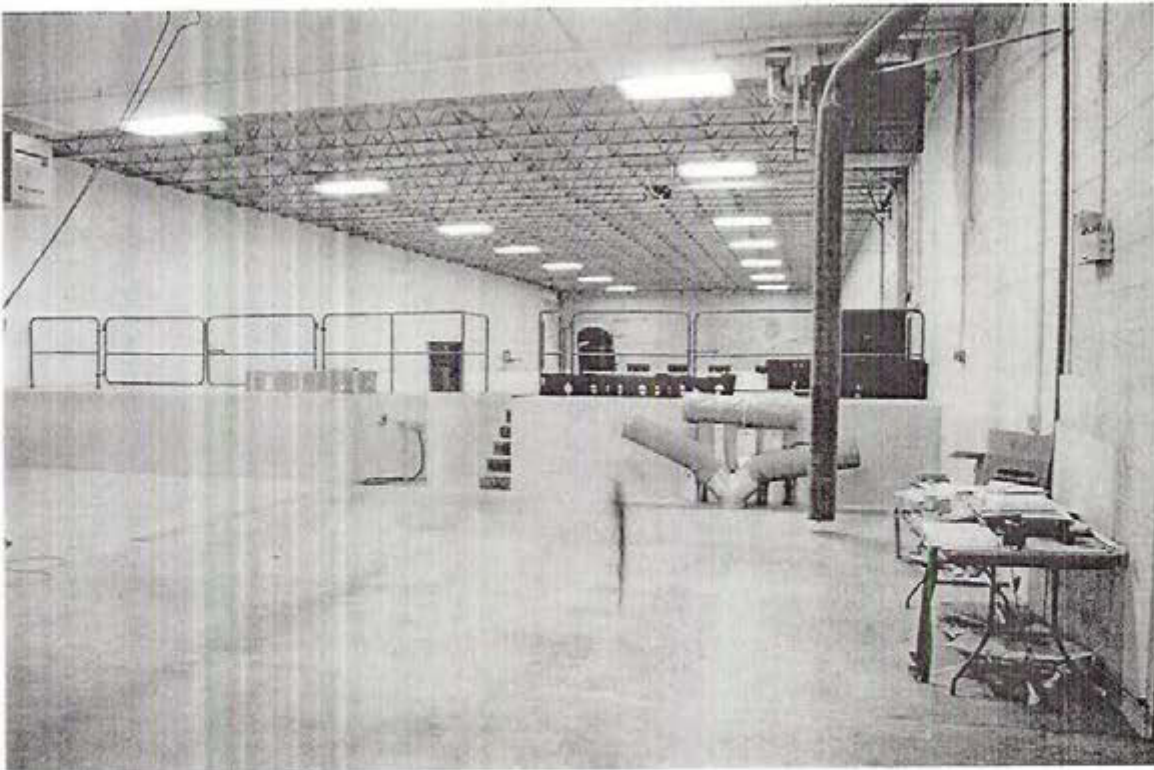


Photo #2: Inside the IFR

C-1



Photo #3: Laser target system setup.



Photo #4: Vehicle rollover simulator.



Table E-1 Local Exhaust Ventilation System Measurements Face Velocities Profile Montana Army National Guard Billings Indoor Firing Range Billings, MT August 7, 2012					
Before the Firing Line Overall Average Velocity for the Plane fpm					
Firing Position	Lane #1	Lane #2	Lane #3	Lane #4	Lane #5
Prone					
Kneeling					
Standing					
Past the Firing Line Overall Average Velocity for the Plane fpm					
Firing Position	Lane #1	Lane #2	Lane #3	Lane #4	Lane #5
Prone					
Kneeling					
Standing					
Mid Range Downstream from the Firing Line Overall Average Velocity for the Plane fpm					
Firing Position	Lane #1	Lane #2	Lane #3	Lane #4	Lane #5
Prone					
Kneeling					
Standing					
@ perforated wall					

No Ventilation Data were collected.

Storage Bldg by JFR  
 4 Incandescent 10-20 ft. cd  
 OxyAcetylene Storage

---

FM56W01 top of Fridge in BR  
 W02 top of overhead cabinet in PC office  
 W03 top of window sill in Chief's office  
 W04 top of Cabinet in Exercise Room  
 W05 top shelves in Supply office  
 W06 Blank

JFR  
 Used by virtual/Laser Guns  
 No live firing is performed there  
 18 F6 Hef only 3 bulbs on  
 30-80  
 Office 50-60 4 F4

IER W01 Floor NE of Range  
 IER W02 Floor NW  
 W03 Floor SE  
 W04 Floor SW  
 W05 Wall West  
 W06 Wall East  
 W07 top of table in office  
 W08 top of Electrical Panel Next to HumV simulator  
 W09 Blank

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**Tektronix**

Service Solutions

**Certificate of Calibration**

6349473

Certificate Page 1 of 2

## Instrument Identification

Company ID: 607228  
 INDUSTRIAL HYGIENE SW  
**Non-Responsive**  
 10510 SUPERFORTRESS AVE SUITE  
 MATHER, CA 95655

PO Number: **Non-Responsive**

Instrument ID: 509084  
 Manufacturer: TSI  
 Description: VELOCICALC

Model Number: 8357  
 Serial Number: 509034

## Certificate Information

Reason For Service: CALIBRATION  
 Type of Cal: NORMAL  
 As Found Condition: IN TOLERANCE  
 As Left Condition: IN TOLERANCE  
 Procedure: 33K5-4-1750-1 AIR VELOCITY, TEMPERATURE, FLOW  
 METERS  
 Remarks:

Technician: **Non-Responsive**  
 Cal Date: 08Jul2012  
 Cal Due Date: 08Jul2013  
 Interval: 12 MONTHS  
 Temperature: 23.0 C  
 Humidity: 62.0 %

Tektronix Service Solutions certifies the performance of this instrument has been verified using equipment of known accuracy which are traceable to National Metrology Institutes (NIST, NPL, PTB) which are traceable to the International System of Units (SI), derived from ratio type measurements, compared to reference materials or recognized consensus standards. The policies and procedures used comply with ANSI/NCSL Z540.1-1994. The quality system is registered to ISO9001.

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

Approved By: **Non-Responsive**  
 Service Representative

## Calibration Standards

NIST Traceable#	Inst ID#	Description	Manufacturer	Model	Cal Date	Date Due
5490403	36-1002142	DEWPOINT MONITOR	GENERAL EASTERN	M-4 RH	07Sep2011	07Sep2012
6236419	36-1004136	AIR VELOCITY SYSTEM	OMEGA	WT4401-S	01Jun2012	01Jun2013
3920030950	36-1005714	DATA ACQUISITION/SWITCH UNIT	ADULENT / HP	84570A	07Jun2011	07Dec2013
3920071396	36-1005980	PITOT TUBE AIRFLOW SYSTEM	SYPRIS	AP12015/60003	20Dec2008	03Dec2013

9638 Intercocean Drive • Cincinnati, OH 45246 • Phone: 513-870-4730 • Fax: 513-874-7752

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## ANALYTICAL REPORT

Report Date: August 20, 2012

**Non-Responsive**

Tanner Sciences, Inc.  
3744 Lawrence Drive  
Naperville, IL 60564

Phone: (630) 369-7956

Fax: (630) 369-7957

**Non-Responsive**

Workorder: 34-1222656

Client Project ID: FMS 081312.4

Purchase Order: FMS

Project Manager: **Non-Responsive**

## Analytical Results

Sample ID: IFR W01	Media: Wipe	Collected: 08/06/2012
Lab ID: 1222656001	Sampling Location: FMS	Received: 08/13/2012
Method: NIOSH 7300 Mod.	Sampling Parameter: Area Not Provided	Prepared: 08/15/2012
		Analyzed: 08/16/2012
Analyte	ug/sample	RL (ug/sample)
Lead	23	2.5

Sample ID: IFR W02	Media: Wipe	Collected: 08/06/2012
Lab ID: 1222656002	Sampling Location: FMS	Received: 08/13/2012
Method: NIOSH 7300 Mod.	Sampling Parameter: Area Not Provided	Prepared: 08/15/2012
		Analyzed: 08/16/2012
Analyte	ug/sample	RL (ug/sample)
Lead	18	2.5

Sample ID: IFR W03	Media: Wipe	Collected: 08/06/2012
Lab ID: 1222656003	Sampling Location: FMS	Received: 08/13/2012
Method: NIOSH 7300 Mod.	Sampling Parameter: Area Not Provided	Prepared: 08/15/2012
		Analyzed: 08/16/2012
Analyte	ug/sample	RL (ug/sample)
Lead	11	2.5

Sample ID: IFR W04	Media: Wipe	Collected: 08/06/2012
Lab ID: 1222656004	Sampling Location: FMS	Received: 08/13/2012
Method: NIOSH 7300 Mod.	Sampling Parameter: Area Not Provided	Prepared: 08/15/2012
		Analyzed: 08/16/2012
Analyte	ug/sample	RL (ug/sample)
Lead	18	2.5

ADDRESS: 550 West LeVoy Drive, Salt Lake City, Utah, USA 84123 PHONE: +1 801 266 7700 FAX: +1 801 268 9992

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www.alsglobal.com

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## ANALYTICAL REPORT

Workorder: **34-1222656**  
 Client Project ID: FMS 081312 4  
 Purchase Order: FMS  
 Project Manager: **Non-Responsive**

## Analytical Results

Sample ID: IFR W05	Media: Wipe	Collected: 08/06/2012
Lab ID: 1222656005	Sampling Location: FMS	Received: 08/13/2012
Method: NIOSH 7300 Mod.	Sampling Parameter: Area Not Provided	Prepared: 08/15/2012
		Analyzed: 08/16/2012
Analyte	ug/sample	RL (ug/sample)
Lead	7.3	2.5

Sample ID: IFR W06	Media: Wipe	Collected: 08/06/2012
Lab ID: 1222656006	Sampling Location: FMS	Received: 08/13/2012
Method: NIOSH 7300 Mod.	Sampling Parameter: Area Not Provided	Prepared: 08/15/2012
		Analyzed: 08/16/2012
Analyte	ug/sample	RL (ug/sample)
Lead	39	2.5

Sample ID: IFR W07	Media: Wipe	Collected: 08/06/2012
Lab ID: 1222656007	Sampling Location: FMS	Received: 08/13/2012
Method: NIOSH 7300 Mod.	Sampling Parameter: Area Not Provided	Prepared: 08/15/2012
		Analyzed: 08/16/2012
Analyte	ug/sample	RL (ug/sample)
Lead	6.1	2.5

Sample ID: IFR W08	Media: Wipe	Collected: 08/06/2012
Lab ID: 1222656008	Sampling Location: FMS	Received: 08/13/2012
Method: NIOSH 7300 Mod.	Sampling Parameter: Area Not Provided	Prepared: 08/15/2012
		Analyzed: 08/16/2012
Analyte	ug/sample	RL (ug/sample)
Lead	200	2.5

Sample ID: IFR W09	Media: Wipe	Collected: 08/06/2012
Lab ID: 1222656009	Sampling Location: FMS	Received: 08/13/2012
Method: NIOSH 7300 Mod.	Sampling Parameter: Area Not Provided	Prepared: 08/15/2012
		Analyzed: 08/16/2012
Analyte	ug/sample	RL (ug/sample)
Lead	<2.5	2.5

## Report Authorization

Method	Analyst	Peer Review
NIOSH 7300 Mod.	<b>Non-Responsive</b>	<b>Non-Responsive</b>





## ANALYTICAL REPORT

Workorder: 34-1222656

Client Project ID: FMS 081312.4

Purchase Order: FMS

Project Manager: 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.alsse.com

## General Lab Comments

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

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

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

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

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

## 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.



1222656



## 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 8/11/2012 Purchase Order No. \_\_\_\_\_3. Company Name Thinner Sciences, Inc.Address 3744 Lawrence DriveMobergville, IL 60564

Person to

Telephone

Fax Tele

E-mail Ad

Billing Ad

4. Quote No.

ALS Project Manager

5. Sample Collection

Sampling Site

Industrial Process

Date of Collection

Time Collected

Date of Shipment

Chain of Custody No.

6. How did you first learn about ALS?

Mathers, CA

## 7. REQUEST FOR ANALYSES

Laboratory Use Only	Client Sample Number	Matrix	Sample Volume	ANALYSES REQUESTED - Use method number if known	Units
	FMS4				
	W01 - W04			Metals: Cd, Cr, Cu, Fe, Pb, Mn, Ni, Zn	
	FMS6				
	W01 - W06			"	
	FMS7				
	W01 - W04			"	
	IFR			Lead Only	cal
	W01 - W09				

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

\*\* 1. µg/sample 2. mg/m<sup>3</sup> 3. ppt 4. % 5. µg/m<sup>3</sup> 6. (other) Please indicate one or more units in the column entitled UnitsComments Please send separate report for each batch Thanks

Possible Contaminants

7. Chain of Custody

Relinquished by

Received by

Relinquished by

Received by

Order Time

Order Time

Order Time

Order 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  
Hazard Inventory Log  
IFR Billings, MT**



CONTROL NUMBER	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/NOIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
CLOSED <input checked="" type="checkbox"/> MTIFR-080712- 4.4.1 <input type="checkbox"/>	Class 1 Laser systems are used for target practice and weapons qualifications.	IFR	4	Consider posting signs warning users about laser hazards					ANSI Z136.1-2010
MTIFR-080712- 4.5.1 <input type="checkbox"/>	IFR SOP was not available for review	IFR	4	Update the range SOP to include laser classes, their hazards, and proper protective eye wear as applicable.					ANSI Z136.1-2010

NGS IHSW

Page 1 of 1

I-1



## **Recommendations**

### **4.5 Range Warning Signs**

Since the range is not used with live ammunitions and only with laser equipped weapons, signs warning about laser hazards are recommended.

### **4.6 Range SOP and documentations**

Update the range SOP to include laser classes, their hazards, and proper protective eye wear as applicable.



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**ARMY NATIONAL GUARD  
INDUSTRIAL HYGIENE – SOUTHWEST**

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

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## **Industrial Hygiene Site Assistance Visit**

**Butte Armory**  
600 Gilman Ave.  
Butte, MT 59701

---

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

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





Industrial Hygiene, Southwest  
Hazard Inventory Log  
Butte Armory - Butte, MT 59701

CONTROL		HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/NCOIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
NUMBER	CLOSED									
MTBA-92612-4.6	<input checked="" type="checkbox"/>	Temperature was below the ASHRAE recommended levels	Armory - Drill Floor	4	Increase the temperature to maintain temperatures throughout the facility between 68-75°F.					ASHRAE Standard 55-1992
MTBA-92612-4.8	<input type="checkbox"/>	Kitchen stove hood flow with insufficient air flow.	Armory - Kitchen	4	Have the kitchen canopy ventilation hood serviced to improve air flow. Have kitchen canopy hood retested for air flow measurements to check compliance before using the stove.					TM 5-810-1
MTBA-92612-4.11.2	<input type="checkbox"/>	Some fire extinguishers were not up to date on annual inspections.	Armory	4	Have annual inspections on all fire extinguishers that are not up to date on annual inspections conducted.					29 CFR 1910.157(c)(1)
MTBA-92612-4.11.2	<input type="checkbox"/>	All fire extinguishers lacked documentation of monthly inspections.	Armory	3	Have personnel at the facility inspect fire extinguishers on a monthly basis and document the inspection on the tags located on the extinguisher.					29 CFR 1910.303(f)
MTBA-92612-4.11.3	<input type="checkbox"/>	No emergency eyewash station at the Butte Armory.	Armory	5	Install an emergency eyewash station in an accessible location within 100ft or 10 seconds traveling distance.					ANSI Z358.1-2004, Section 4.6.1 & Section 7.5.1
MTBA-92612-4.11.6	<input type="checkbox"/>	No labeling on breaker panel "C" in kitchen of the Armory.	Armory - Kitchen	4	Label each breaker with the corresponding function for Panel C.					29 CFR 1926.403(b)(1)(ii)

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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

7 January 2013

MEMORANDUM THRU Montana Army National Guard, ATTN: **Non-Responsive** DSS), Montana  
Medical Det Troop Medical Clinic, Room 1009, 1956 MT MAJO Street, Fort Harrison, MT 59636

FOR Commander, Butte Armory 600 Gilman Avenue, Butte, MT 59701

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for the Butte Armory,  
600 Gilman Avenue, Butte, Montana conducted on 26 September 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 Butte Armory at 600 Gilman Ave, Butte, MT on 26 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 the Butte Armory, 600 Gilman Avenue, Butte, Montana conducted on 26 September 2012.

a. Inspect fire extinguishers that are not up to date on annual and monthly inspection. Inspections should be documented on extinguisher tags. (para. 4.11.2) (RAC 3)

b. Kitchen canopy ventilation hood should be serviced to improve exhaust air flow. (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.

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

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

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

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



ARNG-CSG-IHSW

**SUBJECT:** Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for the Butte Armory, 600 Gilman Avenue, Butte, Montana conducted on 26 September 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 Montana 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

## ***ARMORY***

### **CLEANUP & FOLLOW-UP HOUSEKEEPING RECOMMENDATIONS**

#### **Materials Needed:**

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

#### **Disposal of Waste Water and Cleaning Materials:**

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



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

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

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

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

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

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

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



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

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

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

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

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

**Indoor Firing Range**  
**Decontamination and Cleaning Protocol**  
**( Periodic Cleaning and Conversion)**

1. Ensure that all procedures listed below comply with all federal, state, and local regulation. Consult with the Regional Industrial Hygiene Office and the State Environmental Office for further guidance.
2. **Ventilation System.**
  - i. The range ventilation system must be in operation during all cleaning activities. If no ventilation system is available all doors and windows must be kept sealed to prevent contamination of other areas.
3. **Materials:**
  - i. A High Efficiency Particulate Air (HEPA) filtered vacuum system is the preferred method of cleanup. In a HEPA vacuum cannot be obtained a wet method, detailed below, should be utilized. **A high-pressure water system or dry sweeping may not be used.**
  - ii. A cleaning solution containing detergent and water is recommended. New solutions of detergent and water should be mixed frequently.
  - iii. Two containers should be used; one for wetting the applicator (rags, sponge, mop) and the other for rinsing once the dust has been wiped from the surfaces.
  - iv. Wastewater in containers can be left to evaporate. Any waste left in the buckets and applicators should be disposed of as hazardous waste. **Consult the Environmental Office for appropriate disposal instructions.**
  - v. Personnel responsible for decontamination of the range and stored items should be provided with a full face air purifying respirator with a N100 filter or HEPA filter cartridge providing that all requirements for placing employees in respiratory protection have been met as detailed in 26 CFR 1910.134. Employees should be provided with protective coveralls with hood and shoe covers (i.e. Tyvex full-body



suit). Protective clothing should be hanged daily at the end of the shift and more frequently if the suit becomes grossly contaminated. If cotton coveralls are provided then the employer must provide for maintenance and laundering of protective clothing. Protective clothing should not be taken home and prior to leaving the work area, personnel should thoroughly HEPA vacuum the clothing to prevent lead dust from leaving the area. Work and street clothing should not be stored together.

#### **4. Order of Cleaning:**

- i. A progression of cleaning from top to bottom and from behind the steel backstop to the firing line should be used. All surface areas in the range must be cleaned. Stored items must be decontaminated prior to removal.
- ii. After removing the sand and/or the steel backstop, areas in front of and behind the bullet trap, along with the steel backstop plates should be cleaned.
- iii. The ceiling, lights, baffles, retrieval system, heating system, and ventilation ducts should be cleaned.
- iv. Acoustical material should be vacuumed instead of being painted over. A Toxic Characteristic Leaching Procedure (TCLP) may need to be used for acoustical material and the like, to determine if the material needs to be classified as hazardous and disposed of accordingly. The Environmental Office should be contacted regarding this testing.
- v. The floor should be the last surface cleaned starting at the bullet trap and ending behind the firing line, to include the plenum area. Concrete floors should be sealed with deck enamel, while linoleum, on the tile floor, should be waxed.
- vi. All walls should be painted, preferably with a sealant, which will help prevent any leaching of lead after covering.
- vii. Following the wet cleaning of the area and after all surfaces have been allowed to dry thoroughly, a HEPA vacuum



should be used on all surfaces, until no dust or residue can be seen. A thorough inspection to detect surface dust should be made following cleanup.

- viii. The Regional Industrial Hygiene Office should be contacted for clearance sampling and to approve the range for converted use.

## **5. Decontamination of Stored Items:**

- i. All stored items must be decontaminated before removing from the range. Stored equipment next to the bullet trap and firing line should be decontaminated first.
- ii. A HEPA vacuum or wet cleaning method should be used. Every attempt should be made to clean the item before disposing as hazardous waste to reduce cost and waste.
- iii. Porous items such as canvas tents or other fabrics may be laundered at companies, which specialize in industrial laundry services. Office partitions and carpeting present during firing should be considered grossly contaminated and disposed of as hazardous waste. Consult the Environmental Office before removing and disposing of items.

## **6. Medical Surveillance.**

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

## **7. Air Monitoring.**

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

## **8. Hazard Training.**

- i. A training program must be instituted for all individuals who are subject to exposure to lead at or above the action level, or for whom the possibility of skin or eye irritation exists. This training should be provided for all personnel currently involved in range cleanup operations, at least annually.

INDUSTRIAL HYGIENE SITE ASSISTANCE VISIT (IHS AV)

BUTTE ARMORY  
600 GILMAN AVE  
BUTTE, MONTANA 59701

September 26, 2012

*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.IH1374.71

*Prepared by:*

**Non-Responsive**

*Industrial Hygiene Technician*

**Non-Responsive**

*Principal-In-Charge*

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## EXECUTIVE SUMMARY

On September 26, 2012, **Non-Responsive** an Industrial Hygiene Field Technician of NES, Inc. (NES) conducted an Industrial Hygiene Site Assistance Visit (IHSAB) at the Butte Armory located at 600 Gilman Ave in Butte, Montana 59701. The primary point of contact for information gathered during this survey was **Non-Responsive** phone: (406) 324-5210, email:

**Non-Responsive**

The objectives of this IHSAB were to perform the following activities:

- Evaluate configuration of battery storage and charging facilities;
- Review hazardous material storage and use procedures;
- Review the Respiratory Protection Program and respirator use/storage;
- Collect area and breathing zone air samples;
- Collect metal surface wipe samples;
- Measure the volumetric flow of local exhaust ventilation systems;
- Monitor employee noise exposures through noise dosimetry and source measurements;
- Measure illumination levels;
- Collect indoor air quality data;
- Evaluate any existing safety hazards; and,
- Review safety policies/programs, training, and record keeping.

Significant findings for this IHSAB can be found in the Industrial Hygiene Southwest – 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 task descriptions, work space locations, regulatory requirements, and additional recommendations.

Appendices may be left blank where information has been requested from the facility and not yet received.

Commendables: Brian Cuchine and Sgt. Retan went above and beyond expectations to help NES complete the IHSAB.

## 1.0 INTRODUCTION

During September 26, 2012, **Non-Responsive** an Industrial Hygiene Field Technician of NES, Inc. (NES) conducted an Industrial Hygiene Site Assistance Visit (IHS AV) at the Butte Armory located at 600 Gilman Ave in Butte, Montana 59701. The primary point of contact for information gathered during this survey was **Non-Responsive** phone: (406) 324-5210, email:

**Non-Responsive**

## 1.1 IHS AV Objectives

The objectives of the IHS AV are to evaluate the occupational environment of the administrative areas in the Armory, to determine the presence of operational health and safety risks, and to make recommendations for corrective actions or follow-up work to assist the Army National Guard in managing 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.



### **3.0 METHODS**

#### **3.1 Lead Wipe Sampling**

Metals wipe samples were collected on horizontal work and floor surfaces in various locations throughout the Butte Armory. Ghost Wipe™ brand wipes were used by wiping a one square foot template. The collected wipe samples were placed in clean and labeled centrifuge tubes. Samples were submitted to ALS Environmental Laboratories located in Salt Lake City, Utah for analysis, using 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, table 1 for lead wipe sampling analytical results. See Appendix J for laboratory reports.

#### **3.2 Painted Surface Evaluation**

A paint surface evaluation was conducted during the IHSAV, peeling paint was not observed on the exterior or the interior of the building. Therefore, no samples were obtained.

#### **3.3 Water Damage and Limited Visual Fungal Growth Evaluation**

The interior of the Armory was visually inspected for water damage and subsequent fungal growth resulting from moisture. Any water impacted areas noted were documented on a drawing for a follow-up evaluation.

#### **3.4 Asbestos Documentation**

An evaluation of the Butte Armory's asbestos documentation was performed. This evaluation consisted of determining if an asbestos survey and assessment were done at this facility.

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

An evaluation of the heating, ventilation, and air-conditioning systems that serve the Armory was accomplished. This evaluation consisted of determining if a maintenance plan was in place and a visual inspection of the system was performed to note any obvious operational problems.

Carbon dioxide (CO<sub>2</sub>), temperature, relative humidity and Carbon monoxide (CO) were measured using a TSI IAQ-Calc™ model 8551. The unit was calibrated before use with certified zero gas and 1,000-ppm CO<sub>2</sub> span gas. Carbon dioxide 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 CO<sub>2</sub>, water vapor, and other bio effluents. The American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE), in their Standard 62.1-2010, *Ventilation for Acceptable Air Quality*, recommend maintaining CO<sub>2</sub> below a concentration that is 700 parts per million (700 ppm) above outdoor levels. Outside CO<sub>2</sub> concentrations are typically about 350 ppm. Providing sufficient ventilation to maintain steady-state CO<sub>2</sub> 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). ASHRAE also recommends an outside air supply rate of 20 cubic feet per minute (20 cfm) per building occupant in office spaces, and, at that ventilation rate, CO<sub>2</sub> concentrations should not increase over time. Outside air supply rates were not measured during this IHS AV since CO<sub>2</sub> concentrations were within an acceptable range. A copy of the annual calibration certificate for this instrument is located in Appendix H.

### 3.6 Illumination Level Monitoring

Illumination measurements were taken throughout the Butte Armory. The instrument used for the illumination survey was a Konica Minolta Light Meter, Model TL-1. Measurements taken were obtained at typical working locations such as desks, computers, workstations and general working areas. See Appendix E for illumination data.

### 3.7 Hazardous Material Storage and Use Procedures

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 as part of this IHS AV.

### 3.8 Safety Training and Record Keeping

An inspection of the Armory's training programs and training documentation was performed to determine if the site specific training programs and annual documentation is current.



### 3.9 Ventilation Survey

Air velocity and flow measurements were measured on the kitchen hood over the gas range using a TSI VelociCalc, Plus Meter model 8386A. Results will be evaluated for compliance with TM 5-810-1, prepared by Headquarters, Department of the Army, June 1991 which sets a criteria of 50 feet per minute (fpm) for open hood sections and 75 (fpm) for grease filter sections, measured at the horizontal hood opening. See Appendix F for data tables.

### 3.10 Sound-Level Measurements

Sound-level measurements were not taken on kitchen appliances in this Armory because no high noise or hazardous noise areas were identified.

### 3.11 Safety Walk-Through

A safety walk-through evaluation of the Armory was performed to document the presence of a fire alarm, to determine if fire extinguishers are properly mounted and are current on their monthly and annual inspections, ground fault circuit interrupter (GFCI) measurements and inspection, if eyewash stations inspections are current, and to document any fire or safety hazards in the Armory.

### 3.12 Equipment Used

The following equipment was used for this survey.

Type	Model Number	Serial Number	Calibration Date
TSI VelociCalc™ Plus Meter	8386A	84110581	11/2013
TSI IAQ-Calc™ Meter	8551	51380	11/2013
Konica Minolta Level Meter	TL-1	279029	5/2012

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

### 3.13 Quality Assurance

NES, 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; and,
- 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

Wipe samples for lead dust, were collected from horizontal surfaces in selected representative areas of the Butte Armory to determine if housekeeping efforts are successful. The US Department of Housing and Urban Development (HUD), recommends a 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. This criterion is applied to any areas of a facility that may be used by the public for nonmilitary functions. These areas include: converted indoor firing ranges; drill halls; locker rooms; class rooms; and fitness areas. Areas of a facility which are not specifically listed are expected to be, "maintained as free as practicable of accumulations of lead," as specified by the Occupational Safety & Health Administration (OSHA) in 29 CFR 1910.1025 (h)(1). The Army National Guard has determined lead concentrations less than 200  $\mu\text{g}/\text{ft}^2$  is practicable for maintenance type facilities. This criterion is applied to areas such as maintenance bays, and tool rooms, which are not routinely accessible to the general public.

A total of 8 Ghost Wipe™ lead samples were taken during the time of the IHSAV. The first five samples were collected from the center and the four corners of the drill floor.

Additional lead wipe sampling was taken from approximately 25% of the rest of the building. The 3 additional areas samples were collected from the following areas: two samples were taken from the converted indoor firing range and one sample was taken from the kitchen.

The analytical results for each of the aforementioned areas were below the Army National Guard criterion.

The analytical results are provided in the table below.

Sample Number	Sample Area	Sample Location	Results ( $\mu\text{g}/\text{ft}^2$ )	ARNG Standard
92612-Butte-01	Drill Floor	Southeast corner, floor area sample	9.3	< 40 $\mu\text{g}/\text{ft}^2$
92612-Butte-02	Drill Floor	Southwest corner, floor area sample	2.7	< 40 $\mu\text{g}/\text{ft}^2$
92612-Butte-03	Drill Floor	Center, floor area sample	3.1	< 40 $\mu\text{g}/\text{ft}^2$
92612-Butte-04	Drill Floor	Northeast corner, floor area sample	4.8	< 40 $\mu\text{g}/\text{ft}^2$
92612-Butte-05	Drill Floor	Northwest corner, floor area sample	6.4	< 40 $\mu\text{g}/\text{ft}^2$
92612-Butte-06	Converted Indoor Firing Range	North area, floor sample	48	< 200 $\mu\text{g}/\text{ft}^2$
92612-Butte-07	Converted Indoor Firing Range	South area, floor sample	58	< 200 $\mu\text{g}/\text{ft}^2$
92612-Butte-08	Kitchen	West entrance, floor sample	6.5	< 40 $\mu\text{g}/\text{ft}^2$

#### **4.2 Painted Surface Evaluation**

No peeling paint was observed on the exterior or the interior of the building. Therefore no bulk paint samples were taken during the time of the site assistance visit.

#### **4.3 Water Damage and Limited Visual Fungal Growth Evaluation**

The building was inspected for any areas where water damage was evident. There were no signs of water damage throughout the building observed during the time of the site assistance visit.

#### **4.4 Asbestos Documentation**

No documentation on whether or not the building contained asbestos was available during the visit.

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

The HVAC systems were all functioning and up to date on maintenance and inspections during the time of the IHS AV.

The average outdoor carbon dioxide concentration at the time of the survey was approximately 380 ppm; therefore, the maximum indoor CO<sub>2</sub> level recommended by the ASHRAE Standard would be 1,080 ppm. Carbon dioxide concentrations throughout the facility were lower than 1,080 ppm; the highest CO<sub>2</sub> concentration measured was 456 ppm in the center of the Drill Floor.

Building air temperatures ranged from 66 to 72°F and relative humidity was between 33 and 41% during the testing period. ASHRAE recommends maintaining temperatures between 68 and 75°F. Relative humidity should be maintained between 30% and 60% to minimize the growth of allergenic or pathogenic organisms.

The CO<sub>2</sub>, RH, were below the recommended levels during the time of the IHS AV. The building air temperatures on the drill floor were too low during the IHS AV.

#### **4.6 Illumination Level Monitoring**

Illumination levels were measured throughout the facility. The numbers represent the illumination level 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.

Based on the above criterion, the lighting throughout the Butte Armory was sufficient. See Appendix E for illumination levels.

#### **4.7 Hazardous Material Storage and Use Procedures**

##### **4.7.1 Hazardous Materials Inventory & Material Safety Data Sheets (MSDS)**

Inventories of all hazardous materials used by the Armory along with their associated Material Safety Data Sheets (MSDSs) are maintained in a master binder. Inventories and MSDSs were also maintained in a separate binder at the flammable storage locker. The master chemical inventory and MSDS binder is arranged by a Federal Stock Class and National Stock Number (NSN). The inventories and MSDSs are arranged by product location on the shelf, using alphanumeric designations. Copies of chemical inventories are provided in Appendix D.

##### **4.7.2 Flammable Storage Cabinets**

There is one HAZMAT storage locker located at the Armory. The locker was located in the interior of the building in a well-ventilated area. This flammable locker was inspected and no storage incompatibilities or leaking materials were found. The lockers were in good condition and all doors were noted to close properly.

##### **4.7.3 Flammable and POL Storage**

Not applicable to the facility as stated by Brian Cuchine.

#### **4.8 Safety Training and Record Keeping**

The following training documentation was found at the site:

- Hazard Communication Training

#### 4.9 Ventilation Survey

Tests on the kitchen hoods indicated velocity measurements at the canopy hood opening were less than 50 feet per minute (fpm). Results are not in compliance with TM 5-810-1, prepared by Headquarters, Department of the Army, June 1991 which sets criterion of 50 fpm for open hood sections and 75 fpm for grease filter sections, measured at the horizontal hood opening. Velocity measurements taken from the hood indicated insufficient air flow. See Appendix F for data tables.

#### 4.10 Sound-Level Measurements

Sound-level measurements were not taken on kitchen appliances in this Armory because no high noise or hazardous noise areas were identified.

#### 4.11 Safety Walk-Through

1. Housekeeping throughout the facility was good.
2. Fire extinguishers are strategically located throughout the shop. Some extinguishers were out of date for annual inspections as of August 2011. There was no evidence of a log of monthly fire extinguisher inspections.
3. No eyewash station was on the site.
4. Fire Evacuation Plans were properly mounted throughout the facility with egress routes marked.
5. The ground fault circuit interrupter (GFCI) outlets that were tested functioned properly.
6. Breaker Panel "C" located in the kitchen of the Armory did not have proper labeling.

## 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, Company professional opinions are based in part on the interpretation of data from discrete sampling locations that may not represent conditions at non-sampled locations. Company assumes no responsibility for omissions or errors resulting from inaccurate information or data provided by sources outside of Company, 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 Company 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 Site Assistance Visit was reviewed and approved by:

**Non-Responsive**

January 28, 2013

Date

Technical Assistance: For technical assistance regarding information found in this report or the performed survey, please contact Mr. David Durst or Mr. Luke Bucklin at 916-353-2360, or **Non-Responsive** of the Southwest Regional Industrial Hygiene Office, 916-804-1707. Contact the State Safety and Occupational Health Office and/or the Regional Industrial Hygienist 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 I, 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  
BUTTE ARMORY  
BUTTE, MONTANA  
SEPTEMBER 26, 2012**



**Photo 1: Butte Armory, Butte, Montana.**



**Photo 2: Butte Armory, signage in front of building.**

**PHOTO LOG  
BUTTE ARMORY  
BUTTE, MONTANA  
SEPTEMBER 26, 2012**



**Photo 3:** Lead wipe sample 92612-Butte-01 from Drill Floor, southeast corner.



**Photo 4:** Lead wipe sample 92612-Butte-02 from Drill Floor, southwest corner.



**PHOTO LOG  
BUTTE ARMORY  
BUTTE, MONTANA  
SEPTEMBER 26, 2012**



**Photo 5:** Lead wipe sample 92612-Butte-03 from center of Drill Floor.



**Photo 6:** Lead wipe sample 92612-Butte-04 from Drill Floor, northeast corner.

**PHOTO LOG  
BUTTE ARMORY  
BUTTE, MONTANA  
SEPTEMBER 26, 2012**



**Photo 7: Lead wipe sample 92612-Butte-05 from Drill Floor, northwest corner.**



**Photo 8: Lead wipe floor sample 92612-Butte-06 from converted Indoor Firing Range, north end.**

**PHOTO LOG  
BUTTE ARMORY  
BUTTE, MONTANA  
SEPTEMBER 26, 2012**



**Photo 9:** Lead wipe floor sample 92612-Butte-07 from converted Indoor Firing Range, south end.



**Photo 10:** Lead wipe floor sample 92612-Butte-08 from kitchen floor, in front of hood.



BEST AVAILABLE COPY

## Print Inventory

Print Inventory

Cancel

Unit: CO D 1st BN 163rd IN

Storage: FL03

Month: 9/1/2012

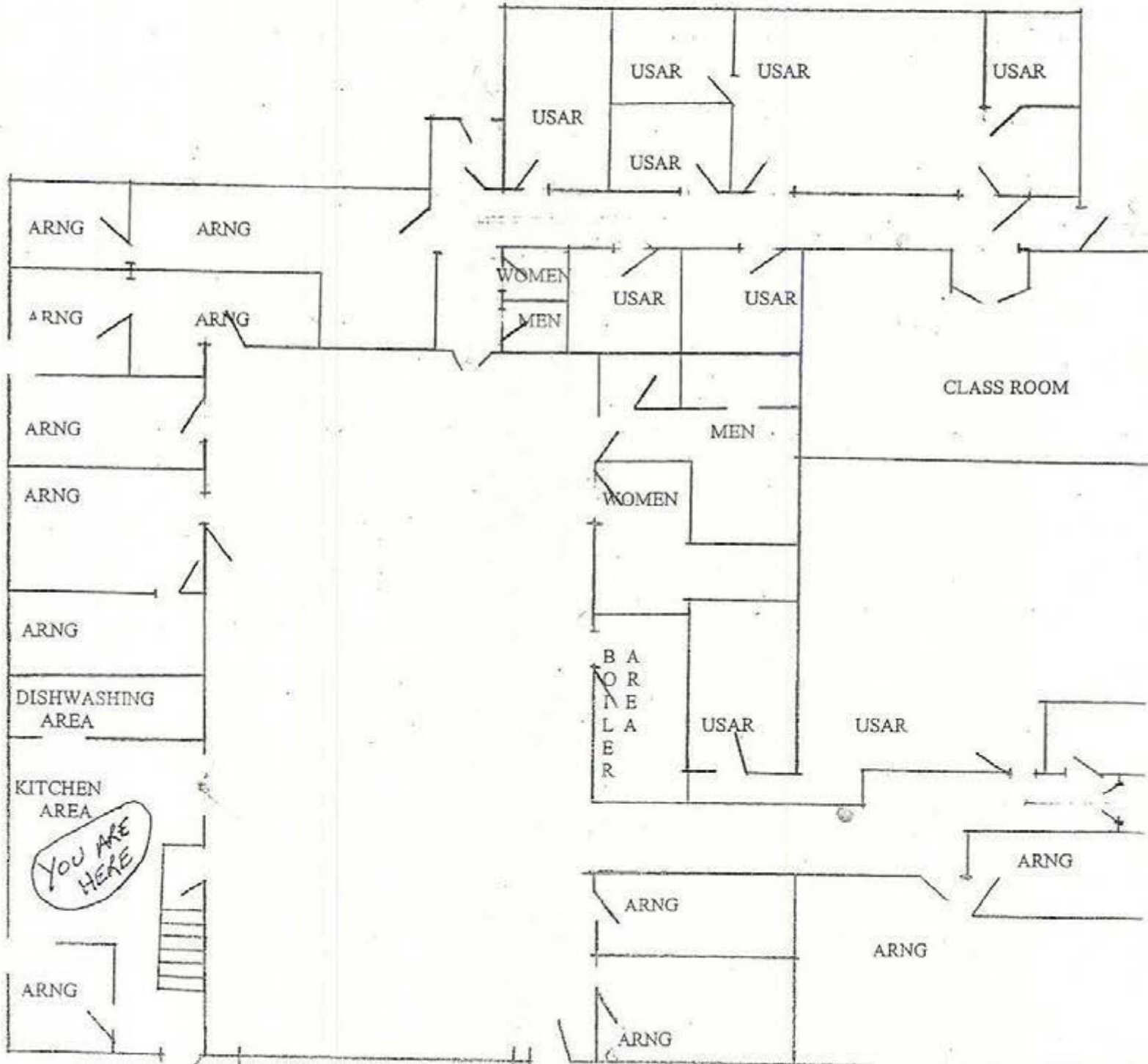
SLN	Item	NSN	Manufacturer	MSDSID	Quantity	Unit of Issue	Shelf Life	HCC
	N-AMYL ACETATE	6810	CONTINENTAL CHEM CORP	BPMP	0	PINT		
A01	PENTRON AEROSOL	9150	MANTEK		1	ea		
A02	Spray Trim Adhesive Clear	8040-00-995-7080	3M	CQJTG	4	EA	12	V3
A03	SO-SURE White	8010-00-290-6983	LHB Industries	CMYGY	2	ea	24	V3
A04	SO-SURE QUICK FRYING LUSTERLESS BLACK	8010-00-910-8154	LHB Industries	CQBRC	1	ea	24	V3
A05	SO SURE Flat White Enamel	8010-00-584-3150	LHB Industries	BFGNQ	1	EA	24	V3
A06	SO-SURE Gloss Black Spray	8010-00-290-6984	LHB Industries	CQBNS	0	ea	24	V3
A07	SO-SURE Yellow	8010-00-721-9744	LHB Industries	CGXMQ	1	ea	24	V3
A08	Brakleen Brake Parts Cleaner	6850-01-167-0678	CRC Industries		0	ea		
C01	Sunbonnet Lemon Wax	7930-00-N04-6699	Butcher CO	BSHGM	9	ea	NA	
C02	Good Sense Tuf Odors	6840-00-150-0778	Johnson Diversey	BXQCR	2	ea	NA	V3
C03	PLEDGE	7930-01-024-3931	JOHNSON	BQSJC	0	EA	NA	

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P01	Direct-to-Metal Alkyd Enamel, Pure White	B55W101	The Sherwin-Williams Company	B55W101	4	GAL
P02	Industrial Enamel, Pure White	B54W101	The Sherwin-Williams Company	B54W101	1	GAL
P03	Promar, 200 Zero VOC Interior Latex Eg-Shel, Extra White	B20W2651	The Sherwin-Williams Company	B20W2651	2	GAL
P04	SherScrub, Supreme Interior Latex Eg-Shel, Extra White	B20WF3051	The Sherwin-Williams Company	B20WF3051	2	GAL

# NATIONAL GUARD ARMORY EVACUATION PLAN

⊙ = FIRE EXTINGUISHER





**ILLUMINANCE SURVEY  
BUTTE ARMORY  
BUTTE, MONTANA  
SEPTEMBER 26, 2012**

Building	Location	Light – FC	Minimum lighting requirements – FC
Drill Floor	Center	33	30
Drill Floor	North	36	30
Drill Floor	South	35	30
Kitchen	Center	31.9	10
Locker Room	Center	32.4	10
Lobby	Center	42.3	10
Office	Desk Top	73.9	50

\*FC= foot candle measurement

**IAQ MEASUREMENTS**  
**BUTTE ARMORY**  
**BUTTE, MONTANA**  
**SEPTEMBER 26, 2012**

Location	CO <sub>2</sub> max permissible level 1,080 ppm	Temperature permissible range 68 - 75°F	RH% permissible range 30-60%	CO max permissible range 200 ppm. STEL
Drill Floor (center)	456	66	40.7	0
Drill Floor (south)	410	66	38	0
Lobby	386	68	37.2	0
Kitchen	375	68	33.3	0
Office	397	72	37.5	0
Classroom	346	68	35.4	0
Converted IFR / Locker Room	400	69	34.8	1

CO<sub>2</sub> = Carbon Dioxide

°F = Fahrenheit

RH = Relative Humidity

CO = Carbon Monoxide

STEL = Short Term Exposure Limit

**LOCAL EXHAUST VENTILATION SYSTEM MEASUREMENTS**

**BUTTE ARMORY**

**BUTTE, MONTANA**

**SEPTEMBER 26, 2012**

**Hood over Gas Range – 72 inches long by 54 inches wide**

Monitoring Location	Linear Feet per Minute	Army National Guard Criteria
Face of ventilation hood	19-32 fpm	50 fpm



Lead Wire Samples Butte Arming - 013.141574.71

Sample #

Location

92612 Butte-01

Drill Floor, SE

-02

, SW

-03

, Center

-04

, NE

-05

, NW

-06

Converted IFR - North Area

-07

Converted IFR - South Area

-08

Kitchen in front of Flood

## Photo Log

## Description

10

Front Sign

11

Front of Building - Facing West

12

Sample 92612-Butte-01

13

Sample - 11 02

14

Sample 03

15

Sample 04

16

Sample 05

17

Sample 06

18

Sample 07

19

Sample 08

Non-Responsive

Date:

9/26/12

Batt Armory  
013.1HR34.71

## Light Survey

Building	Location	Light - ft/c
Armory	Drill Floor (Center)	33 f/c
	Drill Floor (North)	36 f/c
	Drill Floor (South)	35 f/c
	Kitchen	31.9 f/c
	Locker Room	32.4 f/c
	Lobby Entrance	42.3 f/c
	Office @ Desk	73.9
	Office @ Desk	95.1 f/c
	Hallway	54.0 f/c
↓	Classroom @ Desk	54.5 f/c

Name: LB

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NES Job Number:

013.1 H1374.71

Butte Army

IAQ Data

Building	Location	CO <sub>2</sub>	Temp	RH %	CO
Armory	Drill Floor (Center)	456	66°F	46.7	0
	Drill Floor (South)	410	66°F	38	0
	Lobby	386	68°F	37.2	0
	Kitchen	375	68°F	33.3	0
	Office	397	72°F	37.5	0
	Classroom	346	68°F	35.4	0
	Converted FRP/Locker Room	400	69°F	34.8	1

OUTDOOR CO<sub>2</sub> = 380



Name:

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NES Job Number:

Ventilation Data

Measurements: 72' x 54'

FPM:

CFM:

Face of vent

19	20	20	24
22	21	21	24
25	22	26	22
32	31	22	20

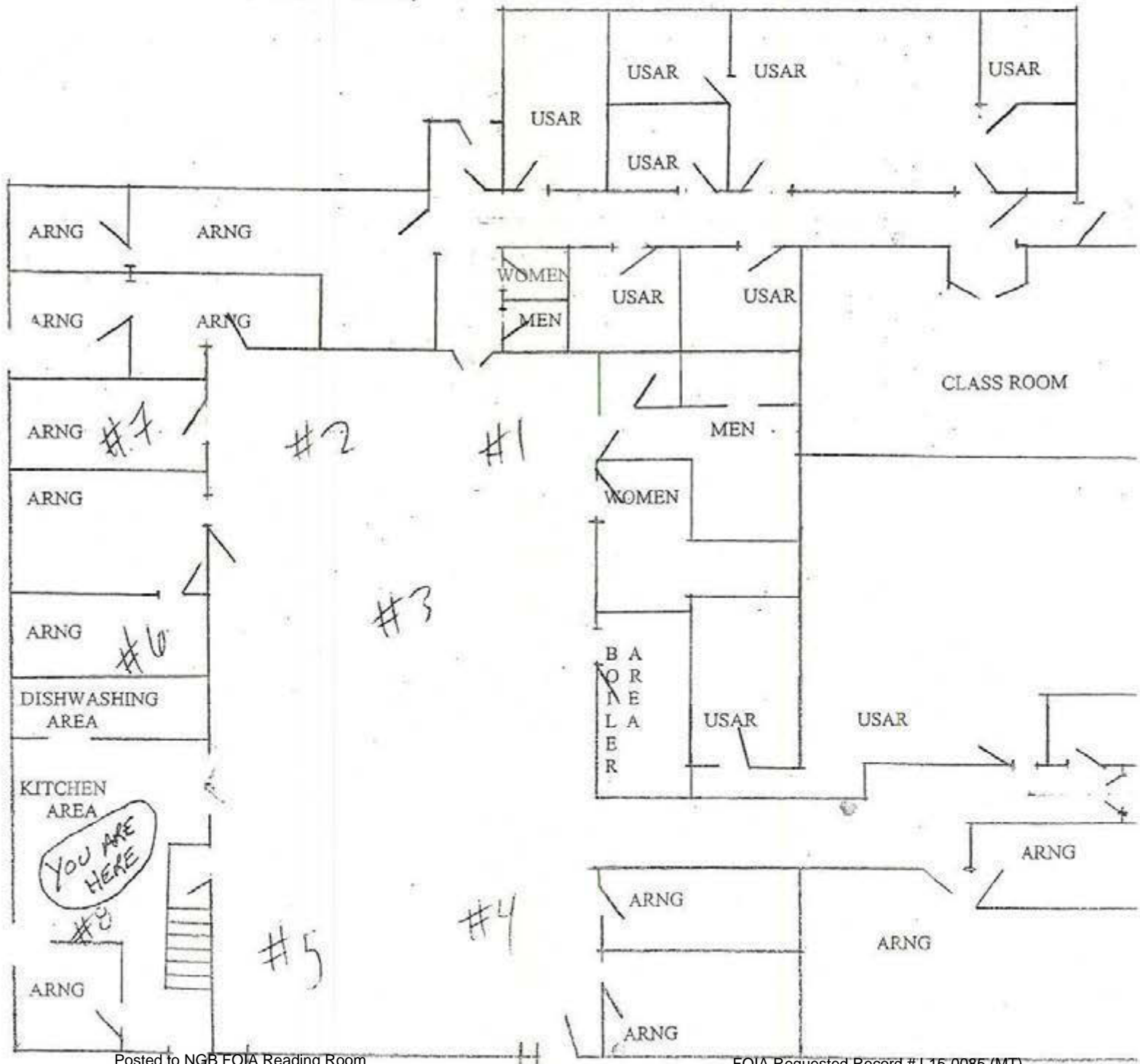
Measurements:

FPM:

CFM:


# NATIONAL GUARD ARMORY EVACUATION PLAN

○ = FIRE EXTINGUISHER



# **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)	✓ 01-Through 05
Are any weapons cleaned in the facility, if yes where are they cleaned?	Yes, Drill Floor / Supply Room
Additional lead wipe samples taken from 25% of the rest of the building -- (on floor areas only)	✓ 06-07 - IER 08 - Kitchen
Is there a converted indoor firing range? If so collect additional wipe samples IAW the SOW.	Yes - Samples 06-07
Is there any peeling paint? Take bulk sample if able.	No
Are there any signs of water damage or mold?	No
Any suspected ACM? Where and what condition is it in. Bulk sample if able.	Flooring - Documentation on-way from State environmental
Quality of housekeeping	Good
HVAC maintenance plan in place?	Boiler / heating only
Overall condition of HVAC system	Working (condition heating only)
Obtained CO2, Temp, RH monitoring	✓ Attached
HAZMAT inventory on hand (make copies for the report), MSDS available for all materials.	✓ Attached
HAZMAT storage, Condition of lockers, if outside storage building is used is it ventilated and does it meet OSHA standards.	one inside of Drill Floor -



Fire alarm in working condition - -not usually in place in older armories	N/A
Fire extinguishers in place and properly identified and mounted <i>Yes - mounted</i>	<del>Not all</del> current out of date as of Aug 2012
Evidence of monthly fire extinguisher inspections	NO
Annual fire extinguisher inspections tags current	Not all current - Aug 2011
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)	Hazcom only
Any Photo labs	N/A
Any hazardous noise sources	N/A
Light levels checked throughout building	✓ Attached
Breaker panels properly labeled with no exposed wiring	1 Panel NO Labeling in Kitchen - Panel C
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 64, 1 Jr outreach Senior ② Armor - tanks Admin
Any civilian activities in armory (cub scouts, classes, day care, parties etc)	Once a week rented out to Pilot Training
Obtain two lead air samples	On IHSW Request Only

Evaluate Kitchen Stove Hood Flow if Present IAW NFPA Standard 96.	Non Sufficient Air Flow - Service
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.	
<u>Take photos</u> of outside of building, all sample points and any pertinent hazards or concerns.	
Name of Armory, POC, phone #, address and organizations in Armory	Butte Armory <b>Non-Responsive</b>
(Add Checklist to Report)	(Add Checklist to Report)

600 Carlman Ave  
Butte, MT 59701

VLL

- Kitchen Hood - Inefficient Air flow (Not used)
- Fire extinguishers - Some need Annual inspections
  - All need Monthly inspections
- Panel



# TSI - Customer Service report

Thank you for the opportunity to service your instrument.

**RMA Number: 800235189**

<b>Ship-to party</b> 5180406  IHSW NGB ARMY NATL GUARD 10510 SUPERFORTRESS AVE S MATHER CA USA	<b>Sold-to party</b> 5180406  IHSW NGB ARMY NATL GUARD 10510 SUPERFORTRESS AVE S MATHER CA USA
---	---

**Service Information:**

Purchase Order CC- **Non-Responsive**  
Purchase Order Date 03/26/2012

**Description** Calibration of VelociCalc Plus 8386A

Equipment 57602 VELOCICALC Plus Air Velocity Meter  
Serial Number 54110581  
Material 8386A

**Service Description:**

**Return Reason:**  
CALIBRATION OVERDUE

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

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





# 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	8386A
TEMPERATURE	68.4 (20.2)	°F (°C)	SERIAL NUMBER	54110581
RELATIVE HUMIDITY	36	%RH		
BAROMETRIC PRESSURE	28.61 (968.8)	inHg (hPa)		

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

## - CALIBRATION VERIFICATION RESULTS -

VELOCITY VERIFICATION				SYSTEM V-106			Unit: ft/min (m/s)
#	STANDARD	MEASURED	ALLOWABLE RANGE	#	STANDARD	MEASURED	ALLOWABLE RANGE
1	0 (0.00)	0 (0.00)	-3-3 (-0.02-0.02)	7	643 (3.26)	640 (3.25)	623-662 (3.17-3.36)
2	34 (0.17)	35 (0.18)	31-37 (0.16-0.19)	8	993 (5.06)	991 (5.03)	965-1025 (4.90-5.21)
3	64 (0.32)	64 (0.32)	61-67 (0.31-0.34)	9	1468 (7.43)	1476 (7.50)	1423-1512 (7.23-7.68)
4	99 (0.50)	99 (0.50)	96-102 (0.49-0.52)	10	2481 (12.60)	2463 (12.51)	2406-2555 (12.22-12.98)
5	160 (0.81)	159 (0.81)	155-164 (0.79-0.84)	11	4501 (22.87)	4440 (22.55)	4366-4636 (22.18-23.55)
6	328 (1.67)	325 (1.65)	318-338 (1.62-1.72)	12	8000 (40.64)	7943 (40.35)	7760-8240 (39.42-41.86)

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)	139.8 (59.9)	139.5-140.5 (59.7-60.3)

PRESSURE VERIFICATION				SYSTEM V-106			Unit: inH <sub>2</sub> O (Pa)
#	STANDARD	MEASURED	ALLOWABLE RANGE	#	STANDARD	MEASURED	ALLOWABLE RANGE
1	4.073 (-1014.2)	-4.084 (-1016.9)	-4.119-4.027 (-1025.6-1002.8)	3	8.027 (1998.7)	8.074 (2010.4)	7.942-8.112 (1977.5-2020.0)
2	2.032 (506.0)	2.041 (508.2)	2.007-2.057 (499.7-512.3)	4	14.052 (3498.9)	14.114 (3514.4)	13.906-14.198 (3462.7-3535.2)

HUMIDITY AS FOUND				SYSTEM H-102			Unit: %RH
#	STANDARD	MEASURED	ALLOWABLE RANGE	#	STANDARD	MEASURED	ALLOWABLE RANGE
1	10.0	11.8	7.0-13.0	4	70.0	69.1	67.0-73.0
2	30.0	30.6	27.0-33.0	5	90.0	89.4	87.0-93.0
3	50.0	49.9	47.0-53.0				

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	12-13-11	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	04-08-11	04-08-12
Temperature	E001800	01-19-12	07-19-12	Temperature	E001799	01-19-12	07-19-12
Humidity	E003539	02-28-12	08-28-12				

Non-Responsive

March 27, 2012

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	8386A
TEMPERATURE	69.1 (20.6)	°F (°C)	SERIAL NUMBER	54110581
RELATIVE HUMIDITY	37	%RH		
BAROMETRIC PRESSURE	28.61 (968.8)	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 -

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)	139.8 (59.9)	139.5-140.5 (59.7-60.3)
PRESSURE VERIFICATION				SYSTEM V-106			Unit: inH <sub>2</sub> O (Pa)
#	STANDARD	MEASURED	ALLOWABLE RANGE	#	STANDARD	MEASURED	ALLOWABLE RANGE
1	-4.073 (-1014.2)	-4.084 (-1016.9)	-4.119-4.027 (-1025.6-1002.8)	3	8.027 (1998.7)	8.074 (2010.4)	7.942-8.112 (1977.5-2020.0)
2	2.032 (506.0)	2.041 (508.2)	2.007-2.057 (499.7-512.3)	4	14.052 (3498.9)	14.114 (3514.4)	13.906-14.198 (3462.7-3535.2)
HUMIDITY VERIFICATION				SYSTEM H-102			Unit: %RH
#	STANDARD	MEASURED	ALLOWABLE RANGE	#	STANDARD	MEASURED	ALLOWABLE RANGE
1	10.0	11.8	7.0-13.0	4	70.0	69.1	67.0-73.0
2	30.0	30.6	27.0-33.0	5	90.0	89.4	87.0-93.0
3	50.0	49.9	47.0-53.0				
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)	646 (3.28)	629-667 (3.19-3.39)
2	35 (0.18)	34 (0.17)	32-38 (0.16-0.19)	8	996 (5.06)	997 (5.06)	966-1025 (4.91-5.21)
3	64 (0.33)	64 (0.32)	61-67 (0.31-0.34)	9	1476 (7.50)	1476 (7.50)	1432-1521 (7.27-7.72)
4	99 (0.50)	99 (0.50)	96-102 (0.49-0.52)	10	2476 (12.58)	2472 (12.56)	2401-2550 (12.20-12.95)
5	160 (0.81)	159 (0.81)	155-165 (0.79-0.84)	11	4498 (22.85)	4548 (23.10)	4363-4633 (22.17-23.54)
6	346 (1.76)	346 (1.76)	335-356 (1.70-1.81)	12	7988 (40.58)	8013 (40.71)	7748-8227 (39.36-41.80)

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	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	04-08-11	04-08-12
Humidity	E003339	02-28-12	08-28-12	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	04-08-11	04-08-12
Velocity	E003327	09-19-07	09-19-12				

**Non-Responsive**

March 27, 2012

DATE

Doc ID: CERT\_DEFAULT



# Tektronix

Service Solutions

## Certificate of Calibration



6209119

Certificate Page 1 of 1

### Instrument Identification

Company ID: 607229

INDUSTRIAL HYGIENE SW

Non-Responsive

10510 SUPERFORTRESS AVE SUITE  
MATHER, CA 95655

PO Number

Non-Responsive

Instrument ID: H225438

Manufacturer: KONICA MINOLTA

Description: ILLUMINANCE METER

Model Number: TL-1

Serial Number: 00279029

### Certificate Information

Reason For Service: CALIBRATION

Type of Cal: NORMAL

As Found Condition: IN TOLERANCE

As Left Condition: IN TOLERANCE

Procedure: MINOLTA T-1M ILLUMINANCE METER

Remarks:

Technician: Non-Responsive

Cal Date: 22May2012

Cal Due Date: 22May2013

Interval: 12 MONTHS

Temperature: 24.0 C

Humidity: 43.0 %

Tektronix Service Solutions certifies the performance of this instrument has been verified using equipment of known accuracy which are traceable to National Metrology Institutes (NIST, NPL, PTB) which are traceable to the International System of Units (SI), derived from ratio type measurements, compared to reference materials or recognized consensus standards. The policies and procedures used comply with ANSI/NCCL Z540.1-1994. The quality system is registered to ISO9001.

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

Approved By: Non-Responsive  
Service Representative

### Calibration Standards

NIST Traceable#	Inst. ID#	Description	Manufacturer	Model	Cal Date	Date Due
1700230826	17-1001076	6 STEEL RULE	STARETT	C416R-72	10Jun2010	10Jun2012
1700276206	17-2007214	1000W LIGHT BULB	OPTRONIC LABS	OL FEL-P-K	17Feb2012	17Feb2017
1700201473	4083RC	MULTIMETER	FLUKE	8842A	25Jul2011	25Jul2012
1700201472	461952	CURRENT SHUNT	LEEDS & NORTHROP	4360	09Aug2011	09Aug2012

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



## DATASHEET

Manufacturer: Minolta

Workorder #: 602492

Model: TL-1

Procedure: Manufacture

Description: Illuminance Meter

Date: 22-May-12

ILLUMINANCE							
Range	Nominal Value	As Found	Result	As Left	Result	Min	Max
30fc (resolution: .1 fc)	10.00	10.1	P	10.1	P	9.7	10.3
300 fc (resolution: 1 fc)	100.0	100.1	P	100	P	97	103
3000 fc (resolution: 10 fc)	1000.0	1000.0	P	999	P	970	1030

Note: Measurement Uncertainty = +/- 2.4% of Indication.



MICRO PRECISION CALIBRATION  
22935 INDUSTRIAL PLACE  
GRASS VALLEY CA 95949  
(530) 288-1880

## Certificate of Calibration

Date: Nov 20, 2012

Cert No. 2008120221675

Customer:  
NETWORK ENVIRONMENTAL  
1141 SIBLEY STREET  
FOLSOM CA 95630

MPC Control #: CD3921  
Asset ID: 1245  
Gage Type: IAQ METER  
Manufacturer: TSI  
Model Number: 8551  
Size: N/A  
Temp/RH: 68.9°F / 35.6 %

Work Order #: SAC-7004499  
Purchase Order #: 013.IH1374.00  
Serial Number: 51380  
Department: N/A  
Performed By: **Non Responsive**  
Received Condition: IN TOLERANCE  
Returned Condition: IN TOLERANCE  
Cal. Date: November 19, 2012  
Cal. Interval: 12 MONTHS  
Cal. Due Date: November 19, 2013

### Calibration Notes:

### Standards Used to Calibrate Equipment

I.D.	Description	Model	Serial	Manufacturer	Cal. Due Date	Traceability #
CC8185	MULTIFUNCTION PROCESS CALIBRATOR	726	1355148	FLUKE	Nov 5, 2013	2008120211043
12270	LASER PARTICLE COUNTER	200L-1-115-1	90058701A	MET ONE	Apr 30, 2013	2008120175502

### Procedures Used In this Event

Procedure Name	Description
PARTICLE COUNTER	PARTICLE COUNTERS
971 TEMP/HUMIDITY METER	TEMP/HUMIDITY METER (FLUKE) 971

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/ISO 2540-1, 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.

**TABLE 1**  
**LEAD WIPE SAMPLE RESULTS**  
**BUTTE ARMORY**  
**SEPTEMBER 26, 2012**

Sample Number	Sample Area	Sample Location	Results ( $\mu\text{g}/\text{ft}^2$ )	ARNG Standard
92612-Butte-01	Drill Floor	Southeast corner, floor area sample	9.3	< 40 $\mu\text{g}/\text{ft}^2$
92612-Butte-02	Drill Floor	Southwest corner, floor area sample	2.7	< 40 $\mu\text{g}/\text{ft}^2$
92612-Butte-03	Drill Floor	Center, floor area sample	3.1	< 40 $\mu\text{g}/\text{ft}^2$
92612-Butte-04	Drill Floor	Northeast corner, floor area sample	4.8	< 40 $\mu\text{g}/\text{ft}^2$
92612-Butte-05	Drill Floor	Northwest corner, floor area sample	6.4	< 40 $\mu\text{g}/\text{ft}^2$
92612-Butte-06	Converted Indoor Firing Range	North area, floor sample	48	< 200 $\mu\text{g}/\text{ft}^2$
92612-Butte-07	Converted Indoor Firing Range	South area, floor sample	58	< 200 $\mu\text{g}/\text{ft}^2$
92612-Butte-08	Kitchen	West entrance, floor sample	6.5	< 40 $\mu\text{g}/\text{ft}^2$

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

ARNG = Army National Guard





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ANALYTICAL REPORT

Report Date: October 15, 2012

**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: **34-1228528**

Client Project ID: 013.IH1374.74/Butte, MT  
101112

Purchase Order: 013.IH1374.74  
Project Manager: **Non-Responsive**

**Analytical Results**

Sample ID: <b>92612-Butte-01</b>		Media: Ghost Wipe		Collected: 09/26/2012
Lab ID: 1228528001		Sampling Location: Butte, MT		Received: 10/11/2012
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 1 ft <sup>2</sup>		Prepared: 10/12/2012
				Analyzed: 10/15/2012
Analyte	ug/sample	ug/ft <sup>2</sup>	RL (ug/sample)	
Lead	9.3	9.3	2.5	

Sample ID: <b>92612-Butte-02</b>		Media: Ghost Wipe		Collected: 09/26/2012
Lab ID: 1228528002		Sampling Location: Butte, MT		Received: 10/11/2012
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 1 ft <sup>2</sup>		Prepared: 10/12/2012
				Analyzed: 10/15/2012
Analyte	ug/sample	ug/ft <sup>2</sup>	RL (ug/sample)	
Lead	2.7	2.7	2.5	

Sample ID: <b>92612-Butte-03</b>		Media: Ghost Wipe		Collected: 09/26/2012
Lab ID: 1228528003		Sampling Location: Butte, MT		Received: 10/11/2012
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 1 ft <sup>2</sup>		Prepared: 10/12/2012
				Analyzed: 10/15/2012
Analyte	ug/sample	ug/ft <sup>2</sup>	RL (ug/sample)	
Lead	3.1	3.1	2.5	

Sample ID: <b>92612-Butte-04</b>		Media: Ghost Wipe		Collected: 09/26/2012
Lab ID: 1228528004		Sampling Location: Butte, MT		Received: 10/11/2012
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 1 ft <sup>2</sup>		Prepared: 10/12/2012
				Analyzed: 10/15/2012
Analyte	ug/sample	ug/ft <sup>2</sup>	RL (ug/sample)	
Lead	4.8	4.8	2.5	

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

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ANALYTICAL REPORT

Workorder: 34-1228528  
Client Project ID: 013.IH1374.74/Butte, MT  
101112  
Purchase Order: 013.IH1374.74  
Project Manager: Non-Responsive

Analytical Results

Sample ID: 92612-Butte-05	Media: Ghost Wipe	Collected: 09/26/2012
Lab ID: 1228528005	Sampling Location: Butte, MT	Received: 10/11/2012
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 1 ft <sup>2</sup>	Prepared: 10/12/2012
		Analyzed: 10/15/2012
Analyte	ug/sample	ug/ft <sup>2</sup> RL (ug/sample)
Lead	6.4	6.4 2.5

Sample ID: 92612-Butte-06	Media: Ghost Wipe	Collected: 09/26/2012
Lab ID: 1228528006	Sampling Location: Butte, MT	Received: 10/11/2012
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 1 ft <sup>2</sup>	Prepared: 10/12/2012
		Analyzed: 10/15/2012
Analyte	ug/sample	ug/ft <sup>2</sup> RL (ug/sample)
Lead	48	48 2.5

Sample ID: 92612-Butte-07	Media: Ghost Wipe	Collected: 09/26/2012
Lab ID: 1228528007	Sampling Location: Butte, MT	Received: 10/11/2012
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 1 ft <sup>2</sup>	Prepared: 10/12/2012
		Analyzed: 10/15/2012
Analyte	ug/sample	ug/ft <sup>2</sup> RL (ug/sample)
Lead	58	58 2.5

Sample ID: 92612-Butte-08	Media: Ghost Wipe	Collected: 09/26/2012
Lab ID: 1228528008	Sampling Location: Butte, MT	Received: 10/11/2012
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 1 ft <sup>2</sup>	Prepared: 10/12/2012
		Analyzed: 10/15/2012
Analyte	ug/sample	ug/ft <sup>2</sup> RL (ug/sample)
Lead	6.5	6.5 2.5

Report Authorization

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

Laboratory Contact Information

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

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





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ANALYTICAL REPORT

Workorder: 34-1228528  
Client Project ID: 013.IH1374.74/Butte, MT  
101112  
Purchase Order: 013.IH1374.74  
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	<a href="http://www.aiclasscorp.com">http://www.aiclasscorp.com</a>
	Utah (NELAC)	DATA1	<a href="http://health.utah.gov/lab/labimpl/">http://health.utah.gov/lab/labimpl/</a>
	Nevada	UT00009	<a href="http://ndep.nv.gov/bsdwlabservice.htm">http://ndep.nv.gov/bsdwlabservice.htm</a>
	Oklahoma	UT00009	<a href="http://www.deq.state.ok.us/CSDnew/">http://www.deq.state.ok.us/CSDnew/</a>
	Iowa	IA# 376	<a href="http://www.iowadnr.gov/InsideDNR/RegulatoryWater.aspx">http://www.iowadnr.gov/InsideDNR/RegulatoryWater.aspx</a>
	Florida (TNI)	E871067	<a href="http://www.dep.state.fl.us/labs/bars/sas/qa/">http://www.dep.state.fl.us/labs/bars/sas/qa/</a>
	Texas (TNI)	T104704456-11-1	<a href="http://www.tceq.texas.gov/field/qa/lab_accred_certif.html">http://www.tceq.texas.gov/field/qa/lab_accred_certif.html</a>
Industrial Hygiene	AIHA (ISO 17025 & AIHA IHLAP/ELLAP)	101574	<a href="http://www.aihaaccreditedlabs.org">http://www.aihaaccreditedlabs.org</a>
Lead Testing:			
CPSC	ACCLASS (ISO 17025, CPSC)	ADE-1420	<a href="http://www.aiclasscorp.com">http://www.aiclasscorp.com</a>
Soil, Dust, Paint, Air	AIHA (ISO 17025, AIHA ELLAP and NLLAP)	101574	<a href="http://www.aihaaccreditedlabs.org">http://www.aihaaccreditedlabs.org</a>
Dietary Supplements	ACCLASS (ISO 17025)	ADE-1420	<a href="http://www.aiclasscorp.com">http://www.aiclasscorp.com</a>

#### 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.





Employee List

Facility: W-4th Avenue  
Location: 600 California Avenue, Suite Room 7 E9701  
Date: 9/26/12

[illegible]



Industrial Hygiene, Southwest  
Hazard Inventory Log  
Butte Armory - Butte, MT 59701

CONTROL NUMBER	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/COIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
MTBA-92612-4.5 <input checked="" type="checkbox"/>	Temperature was below the ASHRAE recommended levels	Armory - Drill Floor	4	Increase the temperature to maintain temperatures throughout the facility between 68-75°F.					ASHRAE Standard 55-1992
MTBA-92612-4.8 <input type="checkbox"/>	Kitchen stove hood flow with insufficient air flow.	Armory - Kitchen	4	Have the kitchen canopy ventilation hood serviced to improve air flow. Have kitchen canopy hood retested for air flow measurements to check compliance before using the stove.					TM 5-810-1
MTBA-92612-4.11.2 <input type="checkbox"/>	Some fire extinguishers were not up to date on annual inspections.	Armory	4	Have annual inspections on all fire extinguishers that are not up to date on annual inspections conducted.					29 CFR 1910.157(g)(1)
MTBA-92612-4.11.2 <input type="checkbox"/>	All fire extinguishers locked documentation of monthly inspections.	Armory	3	Have personnel at the facility inspect fire extinguishers on a monthly basis and document the inspection on the tags located on the extinguisher.					29 CFR 1910.302(f)
MTBA-92612-4.11.3 <input type="checkbox"/>	No emergency eyewash station at the Butte Armory.	Armory	5	Install an emergency eyewash station in an accessible location within 100ft or 10 seconds traveling distance.					ANSI Z358.1-2004, Section 4.6.1 & Section 7.5.1
MTBA-92612-4.11.6 <input type="checkbox"/>	No labeling on breaker panel "C" in kitchen of the Armory.	Armory - Kitchen	4	Label each breaker with the corresponding function for Panel C.					29 CFR 1926.403(b)(1)(ii)



## 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 Butte Armory. The paragraphs are numbered to correspond to the sections where first noted. (i.e., N.4.2 describes the following: the N is Conclusions & Recommendations and the 4.2 corresponds back to Section 4 – Findings and Recommendations; Item 2 – Painted Surface Evaluation).
- N4.5 Heating, Ventilation, and Air-Conditioning Systems and Indoor Air Quality** – Increase the temperature throughout the Butte Armory to maintain temperature between 68–75°F, in accordance with ASHRAE standards.
- N4.8 Ventilation Survey** – Have the kitchen canopy ventilation hood serviced to improve air flow. The kitchen canopy hood should be retested for air flow measurements prior to stove use, in order to check compliance with TM 5-810-1, prepared by Headquarters, Department of the Army, June 1991 ventilation survey criteria.
- N4.11 Safety Walk-Through** –
2. The fire extinguishers that are not up to date on annual inspections must have an annual inspection conducted ASAP. Fire extinguishers must be inspected on a monthly basis and documented accordingly. Have personnel at the facility inspect fire extinguishers on a monthly basis and document the inspection on the tags located on the extinguisher.
  3. Install an emergency eyewash station in an accessible location within 100ft or 10 seconds traveling distance.
  6. There was no labeling on breaker panel “C” in kitchen of the Armory. Label each breaker with the corresponding function for breaker panel “C”.

## *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.



- 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.



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

Five <b>lead wipe</b> samples collected from drill floor (take samples from dusty horizontal floor surfaces)	Samples 01 through 05 were collected from the drill floor.
Are any <b>weapons cleaned</b> in the facility, if yes where are they cleaned?	Yes, on the drill floor and in the supply room.
Additional <b>lead wipe</b> samples taken from 25% of the rest of the building - <b>-(on floor areas only)</b>	Samples 06, 07 and 08 were collected from 25% of the rest of the building.
Is there a <b>converted indoor firing range</b> ? If so collect additional wipe samples IAW the SOW.	Yes there is a converted IFR which is now a storage area.
Is there any <b>peeling paint</b> ? Take bulk sample if able.	No.
Are there any signs of water damage or <b>mold</b> ?	No.
Any suspected <b>ACM</b> ? Where and what condition is it in. Bulk sample if able.	Possible ACM in flooring. Documentation is at state. In route to the facility.
Quality of housekeeping	Good.
HVAC maintenance plan in place?	Boiler/ heating only.
<b>Overall condition</b> of HVAC system	Heating only, working condition.
Obtained <b>CO2, Temp, RH</b> monitoring	Attached to report.
<b>HAZMAT inventory</b> on hand (make copies for the report), MSDS available for all materials.	Attached to report.
<b>HAZMAT storage</b> , Condition of lockers, if outside storage building is used is it ventilated and does it meet OSHA standards.	One Flammable locker on the drill floor. No deficiencies noted during the IHSAV.

<b>Fire alarm</b> in working condition - -not usually in place in older armories	N/A.
<b>Fire extinguishers</b> in place and properly identified and mounted	Yes.
Evidence of <b>monthly fire extinguisher inspections</b>	No evidence of monthly fire extinguisher inspections.
<b>Annual</b> fire extinguisher inspections tags current	Not current as of August 2012.
Are <b>eye wash stations</b> available in areas where hazardous materials are used and are they inspected weekly (inspections must be documented)	N/A.
<b>Egress</b> routes accessible and properly marked - -noted on <u>Fire Evacuation Plan</u>	Yes, posted throughout the facility.
<b>Training programs</b> in place; Hazcom, Respiratory Protection, Confined Spaces, Hearing conservation, PPE (if applicable)	Hazcom Training in place.
Any Photo labs	N/A.
Any hazardous <b>noise</b> sources	No hazardous noise sources identified.
<b>Light levels</b> checked throughout building	Attached to report.
<b>Breaker panels</b> properly labeled with no exposed wiring	Panel "C" has no labeling in the kitchen.
Check <b>building occupancy</b>  1. How many military personnel, how many civilian personnel 2. What types of units occupy facility, i.e. Administrative, Maintenance, etc.?	1. 6 military personnel, 1 civilian. 2. Administrative, Armor tanks
Any <b>civilian activities</b> in armory (cub scouts, classes, day care, parties etc)	Once a week a portion of the Armory is rented out to the CAP (civilian air patrol) for pilot training.
Obtain two <b>lead air samples</b>	On IHSW Request Only

Evaluate Kitchen Stove Hood Flow if Present IAW NFPA Standard 96.	Not sufficient air flow. Not compliant with regulations.
Collect Source Noise Measurements of Kitchen Appliances and Document Using DD 2214	No hazardous noise areas in the kitchen and armory.
Conduct a safety walkthrough of entire facility document any safety deficiencies found.	
<b>Take photos</b> of outside of building, all <b>sample points</b> and any <b>pertinent hazards</b> or concerns.	
Name of Armory, POC, phone #, address and organizations in Armory  (Add Checklist to Report)	Butte Armory <b>Non-Responsive</b> 406-524-5210 600 Gilman Ave Butte, MT 59701  (Add Checklist to Report)



FY 11 Insta	on Status Report (ISR) Services Documentation	Intellcode	Q1	Q2	Q3	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 DOEHS-IH shops coded as Priority 1 which have at least one task performed in the past 12 months		953-02-10	IHT			
Total number of DOEHS-IH shops coded as Priority 1		953-02-10	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			
Number of buildings requiring a basic industrial hygiene characterization within the last 12 months		953-02-11	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			
Number of buildings requiring an industrial hygiene exposure assessment within the last 12 months		953-02-12	IHT			
Number of processes that were assessed for potential inhalation exposure to employees during this IH Visit		953-02-13	IHT			
Number of processes that require an assessment for potential inhalation exposure to employees during this IH Visit		953-02-13	IHT			

Number of processes that were assessed for potential inhalation exposure to employees within the last 12 months.	953-02-14	IHT			
Number of processes that require an assessment for potential inhalation exposure to employees within the last 12 months.	953-02-14	IHT			
Number of personnel who were reassessed by industrial hygiene within the last 12 months.	953-02-15	IHT			
Number of personnel who required reassessment by industrial hygiene within the last 12 months.	953-02-15	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			
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			
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			
Number of personnel who require work shift dosimetry to quantify their daily noise exposures within the last 12 months.	953-02-17	IHT			
Number of ventilation systems (e.g., spray paint booths, tailpipe exhausts, etc.) which were inspected and measured for airflow rates	953-02-18				1
Number of ventilation systems (e.g., spray paint booths, tailpipe exhausts, etc.) which require inspection and measurement of airflow rates	953-02-18				1
Number of ventilation systems which require corrective action based on deficiencies identified during an IH survey	953-02-19				1
Number of ventilation systems which were evaluated by an IH	953-02-19				1
Number of design review packages evaluated and addressed by an IH with recommendations applicable to occupational health concerns	953-02-20	IHT			1
Number of design review packages which required IH evaluation and recommendations applicable to occupational health concerns	953-02-20	IHT			1





# ARMY NATIONAL GUARD INDUSTRIAL HYGIENE - SOUTHWEST

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

## Industrial Hygiene Site Assistance Visit

### Culbertson Armory

819 6<sup>th</sup> Ave E  
Culbertson, MT 59218

02 Oct 2013 *12*

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

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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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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

29 May 2013

MEMORANDUM THRU Montana Army National Guard, ATTN: **Non-Responsive** (DSS), Montana Medical Det Room 1009, 1956 MT Majo Street, Fort Harrison, MT 59636-4789

FOR Commander Culbertson Armory, 819 6<sup>th</sup> Ave E, Culbertson, MT 59218

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for the Culbertson Armory, 819 6<sup>th</sup> Ave, Culbertson, Montana conducted on 02 October 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 Culbertson Armory at 819 6<sup>th</sup> Ave E, Culbertson, MT on 02 OCT 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. Inspect fire extinguishers that are not up to date on annual and monthly inspection. Inspections should be documented on extinguisher tags. (para. 4.11.2) (RAC 3)

**SUBJECT:** Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for the Culbertson Armory, 819 6<sup>th</sup> Ave, Culbertson, Montana conducted on 02 October 2013.

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

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

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

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

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

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

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

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

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

**ARNG-CSG-P**



ARNG-CSG-P

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHS AV) for the AASF #2  
Fairchild AFB, 1100 Taxiway J Road, Hangar 1029, Spokane, WA conducted on 03 December 2012.


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

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


**Non-Responsive**



**Non-Responsive**



NGB, IHSW, CIV  
Industrial Hygiene

<div>  <div> <b>Industrial Hygiene Southwest</b>  <b>Violation Inventory Log</b>  <b>LOG OF SCHEDULE OF CORRECTIVE ACTION - COMPLIANCE WITH SAFETY AND HEALTH STANDARDS</b>  <b>Culbertson Armory - Montana</b> </div> </div>									
CONTROL NUMBER	HAZARD DESCRIPTION	SITE	RAC	HAZARD COUNTERMEASURE	SUSPENSE DATE	ACTION OIC/NCOIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
MTCA-100212-4.1 <input type="checkbox"/> CLOSED	Lead concentrations exceed established criteria	Drill Hall, Kitchen, Classroom, Utility Room	2	Housekeeping practices need to be improved as evident by the migration of lead dust. The armory should be thoroughly cleaned, utilizing the SOP for Armory Clean-up to prevent further migration of these contaminants. Re-sampling should be accomplished after thorough cleaning.					29 CFR 1910.1025 (h)(1) & NG PAM 420-15
MTCA-100212-4.8	The HazCom Program is out of date.	Armory	4	Review the HazCom Program annually and revise as necessary.					AR 385-10 16-4c
MTCA-100212-4.11.1	There was no fire alarm installed at the facility	Armory	5	Install a means of alerting employees of a fire.					29 CFR 1910.165
MTCA-100212-4.11.2	Monthly and yearly fire extinguisher inspections were out of date.	Armory	3	Perform monthly and yearly inspections of fire extinguishers as required.					29 CFR 1910.157(e)

## Indoor Firing Range

### Decontamination and Cleaning Protocol

#### (Periodic Cleaning and Conversion)

1. Ensuring that all procedures listed below comply with all federal, state, and local regulation. Consult with the Regional Industrial Hygiene Office and the States Environmental Office for future guidance.

#### **2. Ventilation System**

The range ventilation system must be in operation during all cleaning activities. If no ventilation system is available all doors and windows must keep sealed to prevent contamination of other areas.

#### **3. Materials**

- I. A High Efficiency Particulate Air (HEPA) filtered vacuum system is the preferred method of cleanup. If a HEPA vacuum cannot be obtained a wet method, detailed below, should be utilized. **A high-pressured water system or dry sweeping may not be used.**
- II. A cleaning solution containing detergent and water is recommended. New solutions of detergent and water should be mixed frequently.
- III. Two containers should be used; one for wetting the applicator (rags, sponge, mop) and the other for rinsing once the dust has been wiped from the surfaces.



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

#### 4. Order of Cleaning

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

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

## **5. Decontamination of Stored Items**

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



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

#### **6. Medical Surveillance**

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

#### **7. Air Monitoring**

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

#### **8. Hazard Training**

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



## ***ARMORY***

### **CLEANUP & FOLLOW-UP HOUSEKEEPING 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.**

**Industrial Hygiene Site Assistance Visit  
Culbertson Armory  
Culbertson, Montana  
2 October, 2012**



**INDUSTRIAL HYGIENE SITE ASSISTANCE VISIT (IHS AV)**

**CULBERTSON ARMORY  
819 6<sup>TH</sup> AVENUE EAST  
CULBERTSON, MONTANA 59218**

**October 2, 2012**

*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.IH1374.66**

*Prepared by:*

**Non-Responsive**

*Industrial Hygiene Technician*

*Prepared by:*

**Non-Responsive**

*Principal-In-Charge*



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**EXECUTIVE SUMMARY**

On October 2, 2012, **Non-Responsive** Industrial Hygiene Technician for NES, Inc. (NES) conducted an Industrial Hygiene Site Assistance Visit (IHS AV) at the Culbertson Armory located at 819 6<sup>th</sup> Avenue in Culbertson, Montana. The primary point of contact for information gathered during this survey was **Non-Responsive** **Non-Responsive** may be reached by phone at (406) 324-5500 or by email at **Non-Responsive**.

The objectives of this IHS AV were to perform the following activities:

- Evaluate configuration of battery storage and charging facilities;
- Review hazardous material storage and use procedures;
- Review the Respiratory Protection Program and respirator use/storage;
- Collect area and breathing zone air samples;
- Collect metal surface wipe samples;
- Measure the volumetric flow of local exhaust ventilation systems;
- Monitor employee noise exposures through noise dosimetry and source measurements;
- Measure illumination levels;
- Collect indoor air quality data;
- Evaluate any existing safety hazards; and,
- Review safety policies/programs, training, and record keeping.

Significant findings for this IHS AV can be found in the Industrial Hygiene Southwest – 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 task descriptions, work space locations, regulatory requirements, and additional recommendations.

Appendices may be left blank where information has been requested from the facility and not yet received.

Commendables: **Non-Responsive** went above and beyond expectations to assist NES staff with completing the IHS AV.



## 1.0 INTRODUCTION

On October 2, 2012, **Non-Responsive** Industrial Hygiene Technician for NES, Inc. (NES) conducted an Industrial Hygiene Site Assistance Visit (IHSAB) at the Culbertson Armory located at 819 6<sup>th</sup> Avenue in Culbertson, Montana. The primary point of contact for information gathered during this survey was **Non-Responsive** may be reached by phone at (406) 324-5500 or by email at **Non-Responsive**

### 1.1 IHSAB Objectives

The objective of the IHSAB is to evaluate the occupational environment of the administrative areas in the Armory, to determine the presence of operational health and safety risks, and to make recommendations for any corrective actions or follow-up work and to assist the Army National Guard in managing 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 Culbertson Armory has one guard member who is assigned to the facility. The ARNG personnel assigned to this facility were deployed at the time of the IHS AV. The Armory has offices for administrative purposes and also contains a drill floor, a gym, supply and storage rooms, a weight room and a kitchen. This facility includes a converted indoor firing range (IFR). The converted IFR was undergoing renovations (painting) during the time of the IHS AV. There are no civilian employees employed at the Culbertson Armory. Civilian functions are not carried out at this facility.

### **3.0 METHODS**

#### **3.1 Lead Wipe Sampling**

Lead wipe samples were collected on horizontal work and floor surfaces in various locations throughout the facility. Ghost Wipe™ brand wipes were used by wiping a one square foot template. The collected wipe samples were placed in clean and labeled centrifuge tubes. Samples were submitted to ALS Environmental Laboratories located in Salt Lake City, Utah for analysis, using 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.

#### **3.2 Painted Surface Evaluation**

The interior and exterior of the Armory was visually inspected for peeling paint on the walls and ceilings. No paint chip samples were collected because no peeling paint was encountered.

#### **3.3 Water Damage and Limited Visual Fungal Growth Evaluation**

The interior of the Armory was visually inspected for water damage and subsequent fungal growth resulting from moisture. No areas of water damage or fungal growth were identified.

#### **3.4 Asbestos**

An evaluation of the facility was performed to determine if there was suspected asbestos containing material.

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

An evaluation of the heating, ventilation, and air-conditioning (HVAC) systems that serve the Culbertson Armory was accomplished. This evaluation consisted of determining if a maintenance plan is in place and a visual inspection of the system was performed to note any obvious operational problems.

Carbon dioxide (CO<sub>2</sub>), temperature, and relative humidity were measured throughout the Armory using a Gray Wolf IAQ Meter. The unit was calibrated before use with certified zero gas and 1,000-ppm CO<sub>2</sub> span gas. Carbon dioxide 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.



### **3.6 Illumination Level Monitoring**

Illumination measurements were taken throughout the Culbertson Armory. The instrument used for the illumination survey was a Konica Minolta Illuminance Meter, Model TL-1. Measurements taken were obtained at typical working locations such as desks, computers, workstations and general working areas.

### **3.7 Hazardous Material Storage and Use Procedures**

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 as part of this IHS AV.

### **3.8 Safety Training and Record Keeping**

An inspection of the Armory's training programs and training documentation was performed to determine if the site specific training programs and annual documentation were current.

### **3.9 Exhaust Ventilation Survey**

Air velocity and flow measurements were obtained on the kitchen hood using a TSI VelociCalc, Model 8357 to determine compliance with TM 5-810-1, prepared by Headquarters, Department of the Army, June 1991 which sets a criteria of 50 feet per minute (FPM) for open hood sections and 75 FPM for grease filter sections, measured at the horizontal hood opening.

### **3.10 Sound-Level Measurements**

There were no appliances identified as producing elevated sound-levels at this facility. Therefore, sound-level measurements were not collected.

### **3.11 Safety Walk-Through**

A safety walk-through evaluation of the Culbertson Armory was performed to document the presence of a fire alarm, to determine if fire extinguishers are properly mounted and are current on their monthly and annual inspections, to inspect ground fault circuit interrupter (GFCI) electrical outlets, if eyewash station inspections are current, and to document any fire or safety hazards in the Armory.

### **3.12 Equipment Used**

The following equipment was used for this survey.

Type	Model Number	Serial Number	Calibration Date
Konica Minolta Illuminance Meter	TL-1	679404	May 2012
Gray Wolf IAQ Meter	IQ-410	4G2BDW3381NWP	May 2012
TSI VelociCalc	8357	509084	July 2012

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

### 3.13 Quality Assurance

NES 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; and,
- 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

Wipe samples for lead dust, were collected from horizontal surfaces in selected representative areas of the Culbertson Armory to determine if housekeeping efforts are successful. The US Department of Housing and Urban Development (HUD), recommends a 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. This criterion is applied to any areas of a facility that may be used by the public for nonmilitary functions. These areas include: converted indoor firing ranges; drill halls; locker rooms; class rooms; and fitness areas. Areas of a facility which are not specifically listed are expected to be, "maintained as free as practicable of accumulations of lead," as specified by the Occupational Safety & Health Administration (OSHA) in 29 CFR 1910.1025 (h)(1). The Army National Guard has determined lead concentrations less than 200  $\mu\text{g}/\text{ft}^2$  is practicable for maintenance type facilities. This criterion is applied to areas such as maintenance bays, and tool rooms, which are not routinely accessible to the general public.

A total of ten Ghost Wipe™ lead samples were taken during the time of the IHSAV. The first five samples were collected from center and the four corners of the drill hall floor. The analytical results for the samples listed above, ranged from 5.6 to 4200  $\mu\text{g}/\text{ft}^2$ . Some of the samples exceed the 40  $\mu\text{g}/\text{ft}^2$  criterion.

Additional lead wipe sampling was taken from approximately 25% of the rest of the building. The five additional samples were collected from the following areas: the kitchen floor; the classroom floor; the utility room floor; the supply room floor; and the desktop in the main office. The analytical results for these wipe samples collected in the kitchen, classroom, and utility room exceed the established criteria. The analytical results are provided in the table below.



Sample Number	Sample Area	Sample Location	Results ( $\mu\text{g}/\text{ft}^2$ )	ARNG Standard ( $\mu\text{g}/\text{ft}^2$ )
100212-Culbertson -01	Drill Hall	Southeast corner, floor sample	4200	$\leq 40$
100212- Culbertson -02	Drill Hall	Southwest corner, floor sample	300	$\leq 40$
100212- Culbertson -03	Drill Hall	Center of drill floor, floor sample	510	$\leq 40$
100212- Culbertson -04	Drill Hall	Northwest corner, floor sample	5.6	$\leq 40$
100212- Culbertson -05	Drill Hall	Northeast corner, floor sample	140	$\leq 40$
100212- Culbertson -06	Kitchen	Adjacent to sink, floor	150	$\leq 40$
100212- Culbertson -07	Classroom	Floor	240	$\leq 40$
100212- Culbertson -08	Utility Room	Adjacent to flame cabinet, floor	240	$\leq 200$
100212- Culbertson -09	Supply Room	Floor	7.2	$\leq 200$
100212- Culbertson -10	Main Office	Table top	< 2.5	$\leq 40$
100212- Culbertson - Blank	—	—	< 2.5	NA

See Appendix I, Table 1 for a table of analytical results. Analytical laboratory reports are provided in Appendix J.

#### 4.2 Painted Surface Evaluation

No paint chip samples were collected because no peeling paint was identified.

#### 4.3 Water Damage and Limited Visual Fungal Growth Evaluation

During the IHS AV, no water intrusion or fungal growth issues were observed.

#### 4.4 Asbestos Documentation

No suspect asbestos containing materials were observed in the Culbertson Armory.

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

The HVAC systems were all functioning and up to date on maintenance and inspections during the time of the IHS AV. The central HVAC system provides AC and heating. All heating and cooling air is direct-ducted to the offices and the drill floor. Field Operations provides HVAC maintenance. The temperature is controlled from Helena.

Carbon dioxide 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 CO<sub>2</sub>, water vapor, and other bio-effluents. The American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE), in their Standard 62.1-2010, *Ventilation for Acceptable Air Quality*, recommend maintaining CO<sub>2</sub> below a concentration that is 700 parts per million (700 ppm) above outdoor levels. Outside CO<sub>2</sub> concentrations are typically about 350 ppm. Carbon dioxide concentrations throughout the facility were below 1050 ppm. The highest CO<sub>2</sub> concentration measured was 439 ppm in the utility room.

ASHRAE recommends maintaining temperatures between 68 and 75°F. Relative humidity should be maintained between 30% and 60% to minimize the growth of allergenic or pathogenic organisms. Building air temperatures ranged from 70.3 to 72.7°F and relative humidity was between 31.2 and 37.7% during the testing period.

#### 4.6 Illumination Level Monitoring

Illumination levels were measured throughout the facility. The numbers represent the illumination level 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.

Based on the above criteria the lighting in the facility is adequate for tasks being performed. Please see Appendix E for a table of illumination results.



#### **4.7 Hazardous Material Storage and Use Procedures**

##### **4.7.1 Hazardous Materials Inventory & Material Safety Data Sheets (MSDS)**

Inventories of all hazardous materials used by the Armory along with their associated Material Safety Data Sheets (MSDSs) are maintained in a master binder within the facility. A copy of the Armory's chemical inventory is provided in Appendix D.

##### **4.7.2 Flammable Storage Cabinets**

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

##### **4.7.3 Flammable and POL Storage**

Not applicable to this facility.

#### **4.8 Safety Training and Record Keeping**

The following training documentation was found at the site:

- HAZCOM (April 2010)

Personnel assigned to this facility were deployed at the time of the IHS AV.

#### **4.9 Exhaust Ventilation Survey**

Airflow velocity measurements collected from the kitchen hood. Velocities ranged from 65 to 163 FPM measurements at the canopy hood opening. Results are in compliance with TM 5-810-1, criteria of 50 FPM for open hood sections and 75 FPM for grease filter sections, measured at the horizontal hood opening. See Appendix F for data tables.

#### **4.10 Sound-Level Measurements**

Since there were no appliances producing elevated sound-levels at this facility, no sound-level measurements were taken on kitchen appliances during the IHS AV.

#### **4.11 Safety Walk-Through**

1. There is no fire alarm present in the facility.
2. Fire extinguishers are strategically located in the hallway, offices and throughout the drill floor. Monthly and annual fire extinguisher inspections were out of date. The last documented monthly inspection was February 2012.



3. GFCI outlets functioned properly when tested.
4. Fire evacuation plan is prominently posted throughout the building. Egress routes are marked of the fire evacuation plan.
5. Housekeeping throughout the facility was good.

## 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, *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.

**6.0 PROJECT APPROVAL**

This IHS AV report was reviewed and approved by:

**Non-Responsive**

June 4, 2013

Date

Principle-In-Charge

Technical Assistance: For technical assistance regarding information found in this report or the performed survey, please contact **Non-Responsive** at 916-353-2360, or **Non-Responsive** of the Southwest Regional Industrial Hygiene Office, 916-804-1707. Contact the State Safety and Occupational Health Office and/or the Regional Industrial Hygienist should any of the operations change, or should the personnel become incapable of following the previous recommendations and subsequent recommendations are needed.



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## APPENDIX A

### REFERENCES

- American Conference of Governmental Industrial Hygienists (ACGIH), Industrial Ventilation, A Manual of Recommended Practice
- 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

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## APPENDIX B

### ASSESSMENT CRITERIA

## 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).

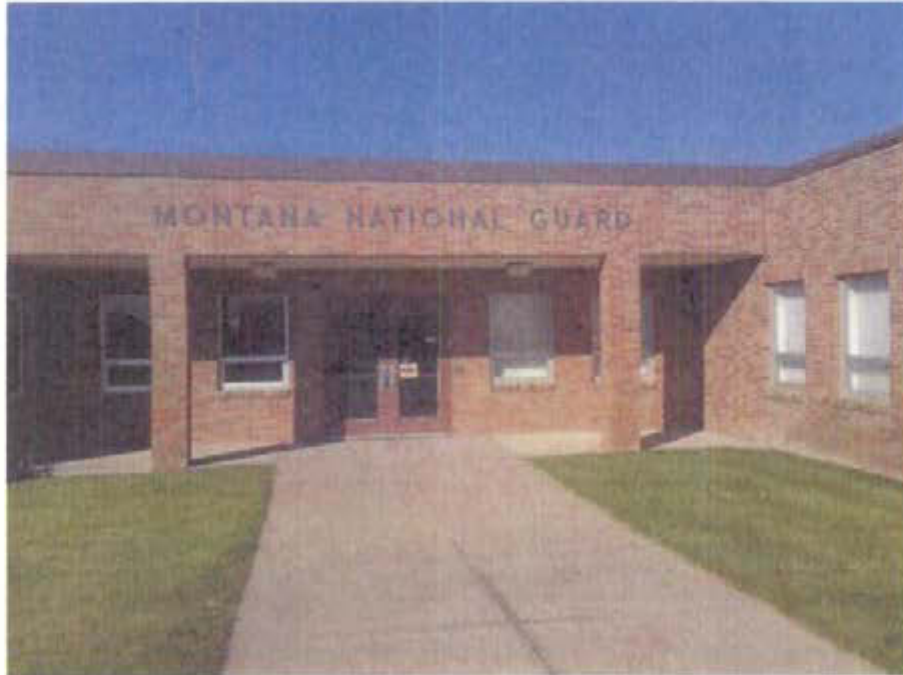


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APPENDIX C

PHOTO LOG

**PHOTO LOG  
CULBERTSON ARMORY  
CULBERTSON, MT  
OCTOBER 02, 2012**



**Photo 1:** Culbertson Armory located in Culbertson, Montana.



**Photo 2:** Culbertson, MT National Guard front sign.



**PHOTO LOG  
CULBERTSON ARMORY  
CULBERTSON, MT  
OCTOBER 02, 2012**



**Photo 3: Safety bulletin board and table providing information.**



**Photo 4: Kitchen grill and food preparation area.**

**PHOTO LOG  
CULBERTSON ARMORY  
CULBERTSON, MT  
OCTOBER 02, 2012**



**Photo 5: Kitchen and food preparation exhaust hood.**



**Photo 6: East view of kitchen food storage area.**

**PHOTO LOG  
CULBERTSON ARMORY  
CULBERTSON, MT  
OCTOBER 02, 2012**



**Photo 7: West view of kitchen area.**



**Photo 8: Lead wipe floor sample 100212-Culbertson-06 taken from kitchen floor adjacent to the sink.**



**PHOTO LOG  
CULBERTSON ARMORY  
CULBERTSON, MT  
OCTOBER 02, 2012**



**Photo 9: East view of classroom area.**



**Photo 10: Lead wipe floor sample 100212-Culbertson-07 taken from east side of classroom.**

**PHOTO LOG  
CULBERTSON ARMORY  
CULBERTSON, MT  
OCTOBER 02, 2012**



**Photo 11:** South view of main office.



**Photo 12:** Lead wipe sample 100212-Culbertson-10 taken from main office table top.

**PHOTO LOG  
CULBERTSON ARMORY  
CULBERTSON, MT  
OCTOBER 02, 2012**



**Photo 13: East view of drill floor.**



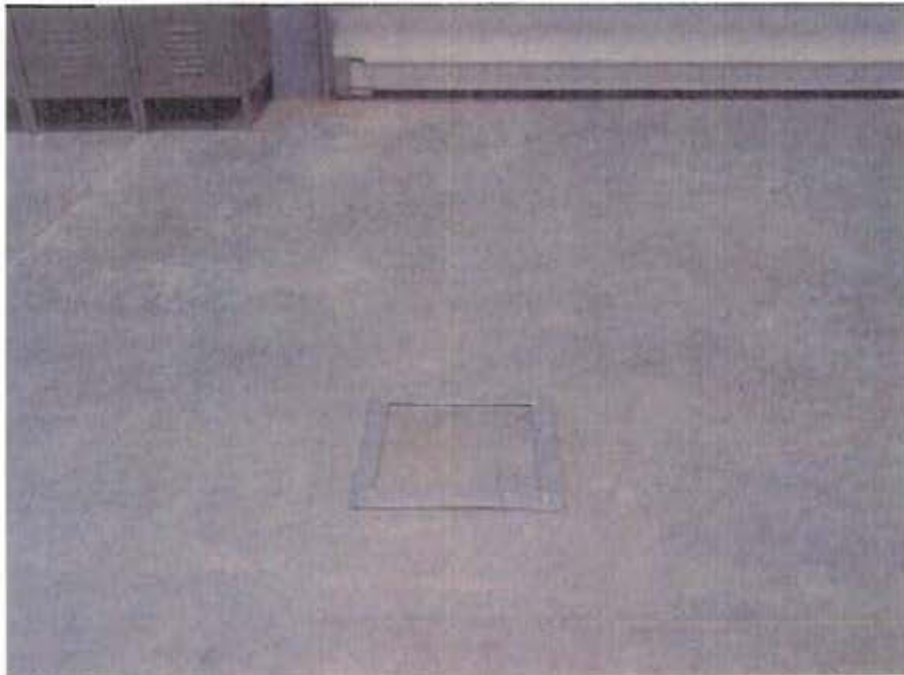
**Photo 14: Lead wipe floor sample 100212-Culbertson-03 taken from center of drill floor.**



**PHOTO LOG  
CULBERTSON ARMORY  
CULBERTSON, MT  
OCTOBER 02, 2012**



**Photo 15: South view of drill floor.**



**Photo 16: Lead wipe floor sample 100212-Culbertson-01 taken from southeast side of drill floor.**

**PHOTO LOG  
CULBERTSON ARMORY  
CULBERTSON, MT  
OCTOBER 02, 2012**



**Photo 17: North view of drill floor.**



**Photo 18: Lead wipe floor sample 100212-Culbertson-05 taken from northeast side of drill floor.**

**PHOTO LOG**  
**CULBERTSON ARMORY**  
**CULBERTSON, MT**  
**OCTOBER 02, 2012**



**Photo 19:** Lead wipe floor sample 100212-Culbertson-04 taken from the northwest side of drill floor.



**Photo 20:** Lead wipe floor sample 100212-Culbertson-02 taken from southwest corner of drill floor.



**PHOTO LOG  
CULBERTSON ARMORY  
CULBERTSON, MT  
OCTOBER 02, 2012**



**Photo 21: Lead wipe floor sample 100212-Culbertson-08 taken from utility room.**



**Photo 22: Indoor firing range being converted.**

**PHOTO LOG  
CULBERTSON ARMORY  
CULBERTSON, MT  
OCTOBER 02, 2012**



**Photo 23: West view of supply room.**



**Photo 24: Lead wipe floor sample 100212-Culbertson-09 taken from supply room.**

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**APPENDIX D**

**CHEMICAL INVENTORY**

## Print Inventory

Print Inventory

Cancel

Unit: DET 2 260th HORIZ  
ENG COStorage: Drill Floor  
FL 02Month:  
10/1/2012

SLN	Item	NSN	Manufacturer	MSDSID	Quantity	Unit of Issue	Shelf Life	HCC
	Anti-freeze, Multi Engine		Leader Automotive		0	gal		
	Grease Molybdenum Disulfide		CSD Inc.		1	can		
	Lacquer Red		LHB		1	can		
	Lubricating Oil, Engine 15W40		Gard Corporation		0	qt		
	Spray Paint		So Sure		0	can		
	Spray Paint Fluorescent Orange		ACE		1	oz		
	<b>Description:</b> Fluorescent Orange Spray Paint (15 oz)							
	Standyne Performance Formula		Standyne		1	oz		
	<b>Description:</b> Diesel Fuel Additive 64 fl oz.							
1C	Lighter Fluid	LP	Home Best		1	qt		
B05	Sealing Compound Syntane 5944	8030-01-350-4984	Canadian Chemical Coating	CDCLR	1	can	1211	
B06	Seam Sealer	8030-01-350-4984	K-Kote Kenyon Consumer Pro	BSFMN	1	gl	1212	V3

C02	Spray Paint Olive Green	8010-00-584-3149	LHB So-Sure	BHLSY	0	can	1211	V3
C06	Spray Paint Flat Black	8010-00-582-5382	LHB So-Sure	CGXLR	2	can	1211	V3
C07	Spray Paint Semigloss Beige	8010-01-350-5252	LHB Eco-Sure	CPYMJ	0	can	1211	V3
C08	Spray Paint Anti Rust Black	LP	Coast to Coast		2	can	1212	V3
C10	Spray Paint Acrylic Enamel Antique Gold	LP	Coast to Coast		1	can	1211	V3
C12	Paint Flourescent Red Orange	8010-00-181-7859	Steven Industries	BKHGP	1	pt		
C13	Spray Paint Alkyd Enamel Lusterless Black	8010-00-616-9143	Skilcraft So-Sure LHB	CQNPR	0	can	1212	



## Print Inventory

Print Inventory

Cancel

Unit: DET 2 260th HORIZ  
ENG COStorage: JANITORIAL  
CLOSETMonth:  
10/1/2012

SLN	Item	NSN	Manufacturer	MSDSID	Quantity	Unit of Issue	Shelf Life	HCC
	A-125 Dry Detergent		B Co. Labs		1	Container		
	A-33 Dry Detergent		B Co. Labs		2	Container		
	AJAX Chlorine Cleanser		AJAX		2	cn		
	Axit Plus		Betco		2	gal		
	Betco Express One Step		Betco		5	gl		
	Betco One Step		Betco		3	gal		
	Bowl & Shower Cleaner		Power Time		9	gal		
	Bowl Blocks		Krystal		12	tablets		
	Dif Waterless Hand Cleaner		Makoor Products		2	can		
	Floor Cleaner		Renown		9	gal		
	Floor Sealer		Betco		3	Gal		
	Glass Cleaner		Skill Craft		7	pt		
	Grease Off		Spray Nine		1	qt		

Micrell Anti Bacterial Soap		Skillcraft	1	box
Multi Purpose Cleaner & Disinfectant		Spray Nine	10	25 oz
Multi Purpose Cleaner & Disinfectant		Spray Nine	11	24 oz
Natural Orange Cleaning Towelletes		GOJO	1	bucket
Natural Orange Pomice Hard Cleaner		GOJO	2	gal
OFF: DEEP WOODS		S.C. Johnson & Sons	0	Cans
OFF: Skintastic		Johnson Wax Co.	0	Bottle
Oxy Bleach Cleaner		Ajax	2	21 oz bottles
Pine Oil	6840-00-584-3129	LHB	1	gl
Sealer		Betco	1	5gl
Soft Cleaner		Ajax	5	21 oz bottles
Special Glass Cleaner		Renown	1	gal
Toilet Cleaner		Betco	LP	0 qt
Weed Killer		Necessary Organic Inc.	1	32 oz bottles
Windex		Dracket	0	Bottle

A01	Glass Cleaner	7930-00-664-6910	Skilcraft LHB	1	1/2 pt	0609	
A02	Corrosion Preventive Compound	8030-00-938-1947	LHB BNTNC	0	can	0609	V2
A12	Corrosion Preventive Compound	8030-01-134-6513	Scharpf Group, Inc BQWGV	0	can	0908	V3
B01	Urinal Blocks	LP	Krystal	64	tablet		
B02	Polish Plastic	7930-00-935-3794	Stemar Inc.	8	pt	0308	
B03	Good Sense Air Freshner	LP	SC Johnson and Son	25	can		
B05	Award Furniture Polish	LP	Airkem Professional Products	1	can		
B06	Toilet Soap	8250-00-228-0598	LHB	2	gal		
C01	Dishwashing Detergent	7930-00-880-4454	LHB	0	gal	1008	
C02	Glass Cleaner	LP	SC Johnson and Son	0	gal		
C03	Steel Wool	LP	SOS Miles Laboratories	43	pads		
C04	Gold Label Mist Odor Control	LP	Airkem Professional Products	0	can		
C05	Liquid Bacteria/Digester/Spotter	LP	Betco Corp	2	qt		
C06	Ajax Quik-Solv Spray Cleaner	LP	Colgate Palmolive Co.	15	qt		
D01	Bleach	LP	Hi-Iex	4	gal		

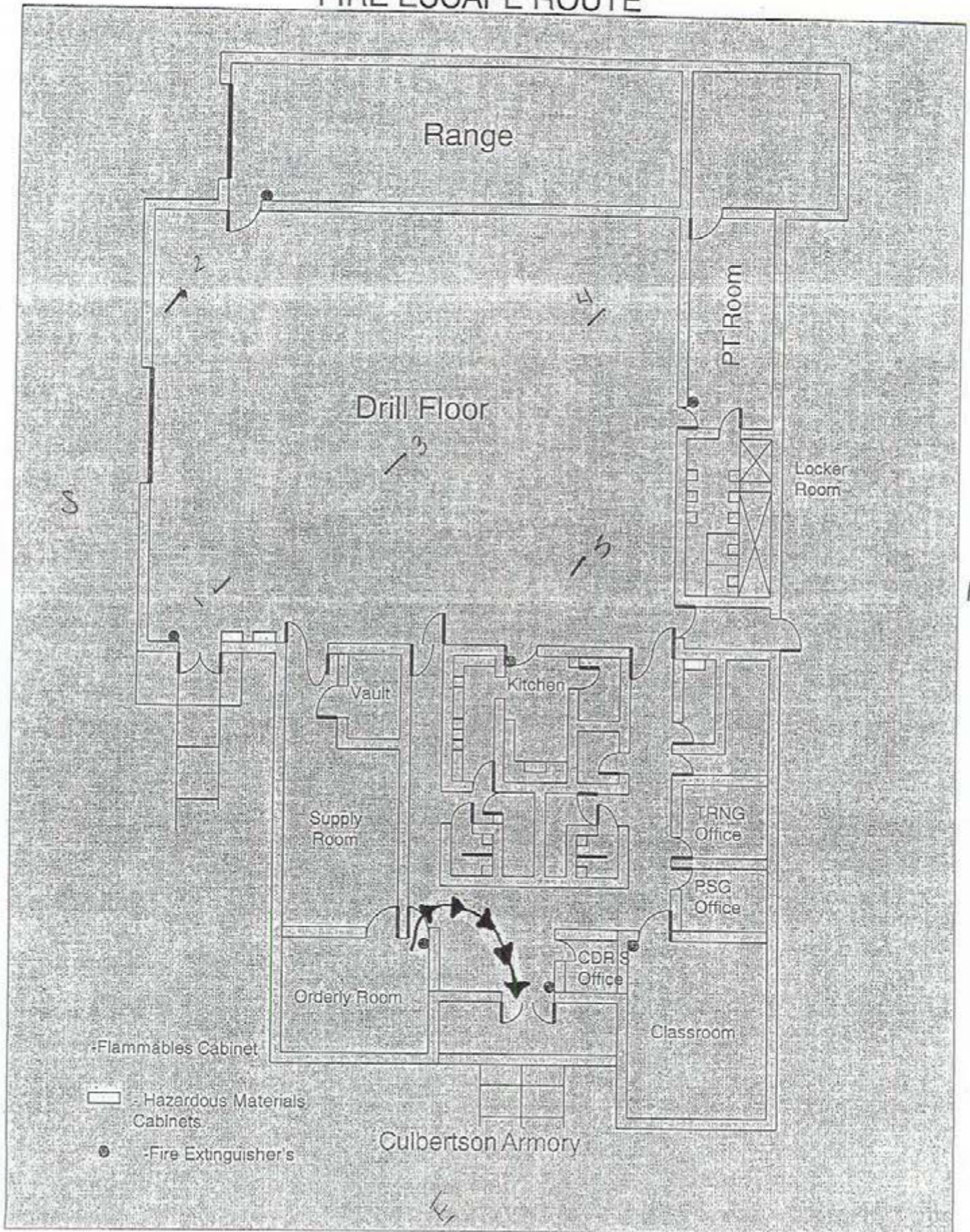


E01	Power Time Extra Strength Cleaner	LP	RMC	3	gal
E03	Hi-Tech Floor Finish	LP	Betco Corp	7	gal

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# FIRE ESCAPE ROUTE





**IAQ MEASUREMENTS**  
**CULBERTSON ARMORY**  
**CULBERTSON, MT**  
**OCTOBER 02, 2012**

<b>Location</b>	<b>CO<sub>2</sub> max permissible level 1,035 ppm</b>	<b>Temperature permissible range 68 - 75°F</b>	<b>RH% permissible range 30-60%</b>	<b>CO max permissible range 200 ppm STEL</b>
Weight room	364	70.3	31.2	0.7
Men's latrine	401	71.7	34.2	0.5
Utility room	439	71.5	32.4	0.6
Mechanical room	405	71.1	32.5	0.6
Women's latrine	396	71.0	32.7	0.6
PSG Office	368	71.6	32.2	0.5
Classroom	366	72.1	32.0	0.6
CDRS Office	370	72.2	33.3	0.4
Storage room	373	71.7	32.2	0.6
Orderly room/office	380	72.7	35.4	0.4
Supply room	364	72.5	34.1	0.4
Vault room	294	71.7	37.7	0.5
Main kitchen	360	71.2	31.5	0.5
South kitchen area	366	71.9	31.2	0.4
Drill floor	352	71.5	31.3	0.4

CO<sub>2</sub> = Carbon Dioxide

°F = Fahrenheit

RH = Relative Humidity

CO = Carbon Monoxide

STEL = Short Term Exposure Limit

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APPENDIX F

VENTILATION DATA



**LOCAL EXHAUST VENTILATION SYSTEM MEASUREMENTS**  
**CULBERTSON ARMORY**  
**CULBERTSON, MONTANA**  
**OCTOBER 02, 2012**

Monitoring Location	Linear Feet per Minute (LFM)
Kitchen Stove Exhaust Hood	65 to 163 LFM

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APPENDIX G

FIELD NOTES



Cullerton Army

10/2/12

IHSAV

**Non-Responsive** - supply and sale**Non-Responsive**

(406) 324-5500 (dial line)

- Unit is entirely deployed  
only **Non-Responsive** is @ facility, she is also in charge  
of Sidney Army.

- lead → check pipe sampling form. ✓
- IAB ✓
- light ✓
- facility map ✓
- MSD's chemical inventory log ✓
- employee list ✓
- ventilation
- photo log
- fire extinguishers ✓
- breather panels ✓

013.1H1374.66

## Photo Log

- 01-10 - lead samples (see lead form)
- 11. sign in front
- 12. Armory building, W view
- 13. entry way, west view
- 14. ~~the~~ classroom, E view
- 15. drill floor, NW view
- 16. drill floor, S view
- 17. drill floor, SW view
- 18. drill floor, E view (kitchen)
- 19. drill floor, N view
- 20. IFR → being cleaned out
- 21. kitchen (sink area), W view
- 22. kitchen, E view
- 23. supply room, W view
- 24. main office, S view
- ventilation
- training programs
- 25. kitchen stove / hood
- 26. hood
- 27. hood

10/2/12

013-1H1374.66

Ventilation Hood - Kitchen

72	145	163	<del>112</del>
113	<del>87</del>		150
65	74		91



**Sampling**Welding: N/A

MIG: \_\_\_\_\_

TIG: \_\_\_\_\_

Stick: \_\_\_\_\_

Plasma Cutting: \_\_\_\_\_

Stainless: \_\_\_\_\_

Galvanized: \_\_\_\_\_

Painting: N/A

CARC: \_\_\_\_\_

Chromates: \_\_\_\_\_

Solvents: \_\_\_\_\_

✓ Lead: →

Wipes: 10

Soldering: \_\_\_\_\_

~~Paint Removal:~~ N/A

Particulates:

~~Wood Working:~~ N/A

Solvents:

~~Lubrication:~~ \_\_\_\_\_**Documentation**Fire Prevention and Evacuation Plan: mapRespiratory Protection: Spirometry: N/A Fit tests: N/AHazard Communication: hazard materials and waste Management Plan  
transporting, training, inspection, record keeping, spill preventionHearing Protection: N/AProtective Eyewear: N/AJob Safety Analysis / Hazard Assessments: N/A

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FOIA Requested Record #J-15-0085 (MT)  
Released by National Guard Bureau  
Page 290 of 1990

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## APPENDIX H

### CALIBRATION CERTIFICATES\*

*\*Included are the calibration certificates for any of the equipment that may have been used during the IHSAY.*



# GrayWolf Sensing Solutions Calibration Certificate

Model Number of UUT#: IQ-410  
 Display Model Number: N/A  
 Probe Software Version: 1.3.0.38  
 Display Software Version: N/A  
 Serial Number: 01-624  
 Display Serial Number: N/A

Company Name: Industrial Hygiene  
 Calibration Date: 5/2/2012  
 Calibration Due Date: 5/2/2013

Ambient Conditions:  
 Temperature: 23.9°C  
 Relative Humidity: 33.7%RH  
 Barometric Pressure: 1010.4mbar

Temperature Check:  
 Actual: 18.7°C  
 Measured: 18.7°C

Relative Humidity Check:  
 Actual: 0.0%RH  
 Measured: 0.0%RH

43.2°C  
 43.2°C

75.3%RH  
 75.3%RH

Carbon Dioxide: s/n 012149  
 Actual: 379ppm  
 Measured: 379ppm

1250ppm  
 1250ppm

Carbon Monoxide: s/n 11031536110  
 Actual: 0ppm  
 Measured: 0ppm

97.3ppm  
 97.3ppm

**GrayWolf Sensing Solutions**

GrayWolf Calibration Information: [www.wolfense.com/calibration.html](http://www.wolfense.com/calibration.html)

Phone: (203) 402-0477

GrayWolf on the web: [www.graywolfsensing.com](http://www.graywolfsensing.com)

**Tektronix**

Service Solutions

**Certificate of Calibration**

6209107

Certificate Page 1 of 1

**Instrument Identification**

PO Number

**Non-Responsive**

Company ID: 607229

INDUSTRIAL HYGIENE SW

**Non-Responsive**

10510 SUPERFORTRESS AVE SUITE

MATHER, CA 95655

Instrument ID: H225437

Manufacturer: KONICA MINOLTA

Description: ILLUMINANCE METER

Model Number: TL-1

Serial Number: 00679404

**Certificate Information**

Reason For Service: CALIBRATION

Type of Cal: NORMAL

As Found Condition: IN TOLERANCE

As Left Condition: IN TOLERANCE

Procedure: MINOLTA T-1M ILLUMINANCE METER

Remarks:

Technician:

Cal Date 22May2012

Cal Due Date: 22May2013

Interval: 12 MONTHS

Temperature: 24.0 C

Humidity: 43.0 %

Tektronix Service Solutions certifies the performance of this instrument has been verified using equipment of known accuracy which are traceable to National Metrology Institutes (NIST, NPL, PTB) which are traceable to the International System of Units (SI), derived from ratio type measurements, compared to reference materials or recognized consensus standards. The policies and procedures used comply with ANSI/NCCL Z540.1-1994. The quality system is registered to ISO9001.

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

Approved By  
Service Representative

**Non-Responsive****Calibration Standards**

NIST Traceable#	Inst. ID#	Description	Manufacturer	Model	Cal Date	Date Due
1700230826	17-1001076	6 STEEL RULE	STARETT	C416R-72	10Jun2010	10Jun2012
1700276206	17-2007214	1000W LIGHT BULB	OPTRONIC LABS	OL FEL-P-K	17Feb2012	17Feb2017
1700201473	4063RC	MULTIMETER	FLUKE	8842A	25Jul2011	25Jul2012
1700201472	461952	CURRENT SHUNT	LEEDS & NORTHROP	4360	09Aug2011	09Aug2012

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



**Tektronix**

Service Solutions

**Certificate of Calibration**

6349473

Certificate Page 1 of 2

Company ID: 607229

INDUSTRIAL HYGIENE SW

Non-Responsive

10510 SUPERFORTRESS AVE SUITE  
MATHER, CA 95655

Instrument Identification

PO Number

Non-Responsive

Instrument ID: 509084

Manufacturer: TSI

Description: VELOCICALC

Model Number: 8357

Serial Number: 509084

**Certificate Information**

Reason For Service: CALIBRATION

Type of Cal: NORMAL

As Found Condition: IN TOLERANCE

As Left Condition: IN TOLERANCE

Procedure: 33K6-4-1769-1 AIR VELOCITY, TEMPERATURE, FLOW  
METERS

Remarks:

Technician:

Cal Date: 09Jul2012

Cal Due Date: 09Jul2013

Interval: 12 MONTHS

Temperature: 23.0 C

Humidity: 62.0 %

Non-Responsive

Tektronix Service Solutions certifies the performance of this instrument has been verified using equipment of known accuracy which are traceable to National Metrology Institutes (NIST, NPL, PTB) which are traceable to the International System of Units (SI), derived from ratio type measurements, compared to reference materials or recognized consensus standards. The policies and procedures used comply with ANSI/NCSL Z540.1-1994. The quality system is registered to ISO9001.

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

Approved By  
Service Representative

Non-Responsive

NIST Traceable#	Inst. ID#	Description	Manufacturer	Model	Cal Date	Date Due
5460483	38-1002142	DEWPOINT MONITOR	GENERAL EASTERN	M-4 RH	07Sep2011	07Sep2012
6236419	38-1004139	AIR VELOCITY SYSTEM	OMEGA	WT4401-S	01Jun2012	01Jun2015
3800090663	38-1005714	DATA ACQUISITION/SWITCH UNIT	AGILENT / HP	34970A	07Jun2011	07Dec2012
3800071396	38-1005980	PITOT TUBE AIRFLOW SYSTEM	SYPRIS	AF12319PX653	02Dec2008	02Dec2013

9539 InterOcean Drive • Cincinnati, OH 45246 • Phone: 513-870-4730 • Fax: 513-874-7752



## Certificate of Calibration



6349473

Certificate Page 2 of 2

## Calibration Standards

NIST Traceable#	Inst. ID#	Description	Manufacturer	Model	Cal Date	Date Due
3800093454	38-1013576	ULTRASONIC ANEMOMETER	AIRFLOW TECHNIC/	UA30	27Jan2012	27Jan2013
3800091857	38-1018828	TEMP/HUMIDITY PROBE	VAISALA	HMP45A	04Oct2011	04Oct2012
3800091564	38-1037024	BAROMETRIC TRANSDUCER	OMEGA	PX02K1-28A5T	26Aug2011	26Aug2012
5886145	H058567	DIGITAL PRESSURE GAGE	MENSOR	2101	09Feb2012	09Feb2013

9639 InterOcean Drive • Cincinnati, OH 45246 • Phone: 513-870-4730 • Fax: 513-874-7752

Manufacturer: TSIWO#: 602540Model: 8357Date: 7/9/2012Description: Thermal AnemometerProcedure #: 33K6-4-1769-1ID. #: 509084

	Actual	UUT	Result	Error		Min	Max
ft/m							
	300	292	P	8		291	310
	500	488	P	12		478	523
	2000	1921	P	79		1900	2100
	4000	3934	P	66		3850	4150
	6000	5990	P	10		5750	6250
	8000	8016	P	-16		7700	8300
°F							
	111.5	111.7	P	-0.2		111.0	112.0
	76.3	76.7	P	-0.4		75.8	76.8
	50.9	50.7	P	0.2		50.4	51.4



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**TABLE 1**  
**LEAD WIPE SAMPLE RESULTS**  
**CULBERTSON ARMORY**  
**CULBERTSON, MT**  
**OCTOBER 02, 2012**

Sample Number	Sample Area	Sample Location	Results (µg/ft <sup>2</sup> )	ARNG Standard (µg/ft <sup>2</sup> )
100212-Culbertson-01	Drill floor	Southeast corner, floor sample	4200	≤ 40
100212-Culbertson-02	Drill Floor	Southwest corner, floor sample	300	≤ 40
100212-Culbertson-03	Drill Floor	Center of drill floor, floor sample	510	≤ 40
100212-Culbertson-04	Drill Floor	Northwest corner, floor sample	5.6	≤ 40
100212-Culbertson-05	Drill Floor	Northeast corner, floor sample	140	≤ 40
100212-Culbertson-06	Kitchen	Adjacent to sink, floor sample	150	≤ 40
100212-Culbertson-07	Classroom	Floor	240	≤ 40
100212-Culbertson-08	Utility room	Adjacent to flame cabinet, floor sample	240	≤ 200
100212-Culbertson-09	Supply room	Floor	7.2	≤ 200
100212-Culbertson-10	Main Office	Table top	<2.5	≤ 40
100212-Culbertson-Blank	NA	NA	<2.5	NA

µg/ft<sup>2</sup> = micrograms per square foot

ARNG = Army National Guard

ND = none detected at or above the analytical detection limit

NA = not applicable

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APPENDIX J

LABORATORY REPORTS



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ANALYTICAL REPORT

Report Date: October 10, 2012

Non-Responsive

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

Phone: (916) 353-2370 x 20

Fax: (916) 353-2375

E-mail: Non-Responsive

Workorder: 34-1228245

Client Project ID: Culbertson Armory

Purchase Order: 013.IH1374.66

Project Manager: Non-Responsive

Analytical Results

Sample ID: 100212-Culbertson-01 Armory		Media: Ghost Wipe		Collected: 10/02/2012
Lab ID: 1228245001		Sampling Location: Culbertson Armory		Received: 10/08/2012
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 1 ft <sup>2</sup>		Prepared: 10/09/2012
				Analyzed: 10/10/2012
Analyte	ug/sample	ug/ft <sup>2</sup>	RL (ug/sample)	
Lead	4200	4200	7.5	

Sample ID: 100212-Culbertson-02 Armory		Media: Ghost Wipe		Collected: 10/02/2012
Lab ID: 1228245002		Sampling Location: Culbertson Armory		Received: 10/08/2012
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 1 ft <sup>2</sup>		Prepared: 10/09/2012
				Analyzed: 10/09/2012
Analyte	ug/sample	ug/ft <sup>2</sup>	RL (ug/sample)	
Lead	300	300	2.5	

Sample ID: 100212-Culbertson-03 Armory		Media: Ghost Wipe		Collected: 10/02/2012
Lab ID: 1228245003		Sampling Location: Culbertson Armory		Received: 10/08/2012
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 1 ft <sup>2</sup>		Prepared: 10/09/2012
				Analyzed: 10/09/2012
Analyte	ug/sample	ug/ft <sup>2</sup>	RL (ug/sample)	
Lead	510	510	2.5	

Sample ID: 100212-Culbertson-04 Armory		Media: Ghost Wipe		Collected: 10/02/2012
Lab ID: 1228245004		Sampling Location: Culbertson Armory		Received: 10/08/2012
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 1 ft <sup>2</sup>		Prepared: 10/09/2012
				Analyzed: 10/09/2012
Analyte	ug/sample	ug/ft <sup>2</sup>	RL (ug/sample)	
Lead	5.6	5.6	2.5	

Address: 960 West LeVoy Drive, Salt Lake City, Utah, USA 84123 Phone: +1 801 266 7700 Fax: +1 801 268 9992  
Part of the ALS Laboratory Group A Campbell Brothers Limited Company

www.alsglobal.com

RIGHT SOLUTIONS RIGHT REPORTS



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ANALYTICAL REPORT

Workorder: **34-1228245**  
Client Project ID: Culbertson Armory  
Purchase Order: 013.IH1374.66  
Project Manager: **Non-Responsive**

Analytical Results

Sample ID: <u>100212-Culbertson-05 Armory</u>		Media: Ghost Wipe	Collected: 10/02/2012
Lab ID: 1228245005		Sampling Location: Culbertson Armory	Received: 10/08/2012
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 1 ft <sup>2</sup>	Prepared: 10/09/2012 Analyzed: 10/09/2012
Analyte	ug/sample	ug/ft <sup>2</sup>	RL (ug/sample)
Lead	140	140	2.5

Sample ID: <u>100212-Culbertson-06 Armory</u>		Media: Ghost Wipe	Collected: 10/02/2012
Lab ID: 1228245006		Sampling Location: Culbertson Armory	Received: 10/08/2012
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 1 ft <sup>2</sup>	Prepared: 10/09/2012 Analyzed: 10/09/2012
Analyte	ug/sample	ug/ft <sup>2</sup>	RL (ug/sample)
Lead	150	150	2.5

Sample ID: <u>100212-Culbertson-07 Armory</u>		Media: Ghost Wipe	Collected: 10/02/2012
Lab ID: 1228245007		Sampling Location: Culbertson Armory	Received: 10/08/2012
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 1 ft <sup>2</sup>	Prepared: 10/09/2012 Analyzed: 10/09/2012
Analyte	ug/sample	ug/ft <sup>2</sup>	RL (ug/sample)
Lead	240	240	2.5

Sample ID: <u>100212-Culbertson-08 Armory</u>		Media: Ghost Wipe	Collected: 10/02/2012
Lab ID: 1228245008		Sampling Location: Culbertson Armory	Received: 10/08/2012
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 1 ft <sup>2</sup>	Prepared: 10/09/2012 Analyzed: 10/09/2012
Analyte	ug/sample	ug/ft <sup>2</sup>	RL (ug/sample)
Lead	240	240	2.5

Sample ID: <u>100212-Culbertson-09 Armory</u>		Media: Ghost Wipe	Collected: 10/02/2012
Lab ID: 1228245009		Sampling Location: Culbertson Armory	Received: 10/08/2012
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 1 ft <sup>2</sup>	Prepared: 10/09/2012 Analyzed: 10/09/2012
Analyte	ug/sample	ug/ft <sup>2</sup>	RL (ug/sample)
Lead	7.2	7.2	2.5





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ANALYTICAL REPORT

Workorder: **34-1228245**  
Client Project ID: Culbertson Armory  
Purchase Order: 013.IH1374.66  
Project Manager: **Non-Responsive**

Analytical Results

Sample ID: <b>100212-Culbertson-10 Armory</b>		Media: Ghost Wipe	Collected: 10/02/2012
Lab ID: 1228245010		Sampling Location: Culbertson Armory	Received: 10/08/2012
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 1 ft <sup>2</sup>	Prepared: 10/09/2012
			Analyzed: 10/09/2012
Analyte	ug/sample	ug/ft <sup>2</sup>	RL (ug/sample)
Lead	<2.5	<2.5	2.5

Sample ID: <b>100212-Culbertson-Blank</b>		Media: Ghost Wipe	Collected: 10/02/2012
Lab ID: 1228245011		Sampling Location: Culbertson Armory	Received: 10/08/2012
Method: NIOSH 7300 Mod.		Sampling Parameter: Area Not Applicable	Prepared: 10/09/2012
			Analyzed: 10/09/2012
Analyte	ug/sample	ug/ft <sup>2</sup>	RL (ug/sample)
Lead	<2.5	NA	2.5

Comments

Sample: 1228245001

This sample was reported from 3X dilution data in order to obtain a response within the linear range for lead. The reporting limit was raised proportionately to the reported dilution level.

Report Authorization

Method	Analyst	Peer Review
NIOSH 7300 Mod.	<b>Non-Responsive</b>	

Laboratory Contact Information

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

Phone: (801) 266-7700  
Email: [alslt.lab@ALSGlobal.com](mailto:alslt.lab@ALSGlobal.com)  
Web: [www.alslc.com](http://www.alslc.com)



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ANALYTICAL REPORT

Workorder: 34-1228245  
Client Project ID: Culbertson Armor  
Purchase Order: 013.IH1374.66  
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	<a href="http://www.aiclasscorp.com">http://www.aiclasscorp.com</a>
	Utah (NELAC)	DATA1	<a href="http://health.utah.gov/lab/labimp/">http://health.utah.gov/lab/labimp/</a>
	Nevada	UT00009	<a href="http://ndep.nv.gov/bsdwlabservice.htm">http://ndep.nv.gov/bsdwlabservice.htm</a>
	Oklahoma	UT00009	<a href="http://www.deq.state.ok.us/CSDnew/">http://www.deq.state.ok.us/CSDnew/</a>
	Iowa	IA# 376	<a href="http://www.iowadnr.gov/InsideDNR/RegulatoryWater.aspx">http://www.iowadnr.gov/InsideDNR/RegulatoryWater.aspx</a>
	Florida (TNI)	E871067	<a href="http://www.dep.state.fl.us/abs/bars/sas/qa/">http://www.dep.state.fl.us/abs/bars/sas/qa/</a>
	Texas (TNI)	T104704456-11-1	<a href="http://www.tceq.texas.gov/field/qa/lab_accred_certif.html">http://www.tceq.texas.gov/field/qa/lab_accred_certif.html</a>
Industrial Hygiene	AIHA (ISO 17025 & AIHA IHLAP/ELLAP)	101574	<a href="http://www.aihaaccreditedlabs.org">http://www.aihaaccreditedlabs.org</a>
Lead Testing:			
CPSC	ACCLASS (ISO 17025, CPSC)	ADE-1420	<a href="http://www.aiclasscorp.com">http://www.aiclasscorp.com</a>
Soil, Dust, Paint, Air	AIHA (ISO 17025, AIHA ELLAP and NLLAP)	101574	<a href="http://www.aihaaccreditedlabs.org">http://www.aihaaccreditedlabs.org</a>
Dietary Supplements	ACCLASS (ISO 17025)	ADE-1420	<a href="http://www.aiclasscorp.com">http://www.aiclasscorp.com</a>

### 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.





1228245



## 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 10/5/12 Purchase Order No. 013-111374-663. Company Name NESAddress 114 Sibley St.  
Folsom, CA 95630Person to Contact Non-ResponsiveTelephone (716) Non-ResponsiveFax Telephone ( ) Non-ResponsiveE-mail Address Non-Responsive

Billing Address (if different from above)

4. Quote No. Non-ResponsiveALS Project Manager Non-Responsive

5. Sample Collection

Sampling Site Culbertson Army

Industrial Process

Date of Collection 10/02/12

Time Collected

Date of Shipment 10/05/12

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**
	100212-Culbertson-01	- Ghost Ware	15g ft.	Lead MASH 7300	ug/15g ft.
	Army				
	100212-Culbertson-02				
	100212-Culbertson-03				
	100212-Culbertson-04				
	100212-Culbertson-05				
	100212-Culbertson-06				
	100212-Culbertson-07				
	100212-Culbertson-08				
	100212-Culbertson-09				
	100212-Culbertson-10				
	100212-Culbertson-11				
	100212-Culbertson-12				

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

\*\* 1. µg/sample 2. mg/m<sup>3</sup> 3. ppm 4. % 5. µg/m<sup>3</sup> 6. \_\_\_\_\_ (other) Please indicate one or more units in the column entitled Units\*\*

Comments

Possible Contamination and/or Chemical Hazards

## 7. Chain of Custody (Optional)

Relinquished by

Non-Responsive

Date/Time

Received by

Date/Time 10-08-12 9:44

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 Laboratory Group



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**Industrial Hygiene Southwest**  
***Violation Inventory Log***  
**LOG OF SCHEDULE OF CORRECTIVE ACTION - COMPLIANCE WITH SAFETY AND HEALTH STANDARDS**  
**Culbertson Armory - Montana**

CONTROL NUMBER <input type="checkbox"/> CLOSED	HAZARD DESCRIPTION	SITE	RAC	HAZARD COUNTERMEASURE	SUSPENSE DATE	ACTION OIC/NCIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
MTCA-100212-4.1	Lead concentrations exceed established criteria	Drill Hall, Kitchen, Classroom, Utility Room	2	Housekeeping practices need to be improved as evident by the migration of lead dust. The armory should be thoroughly cleaned, utilizing the SOP for Armory Clean-up to prevent further migration of these contaminants. Re-sampling should be accomplished after thorough cleaning.					29 CFR 1910.1025 (h)(1) & NG PAM 420-15
MTCA-100212-4.8	The HazCom Program is out of date.	Armory	4	Review the HazCom Program annually and revise as necessary.					AR 385-10 16-4c
MTCA-100212-4.11.1	There was no fire alarm installed at the facility	Armory	5	Install a means of alerting employees of a fire.					29 CFR 1910.165
MTCA-100212-4.11.2	Monthly and yearly fire extinguisher inspections were out of date.	Armory	3	Perform monthly and yearly inspections of fire extinguishers as required.					29 CFR 1910.157(e)



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**THIS TASK DOES NOT APPLY TO THIS FACILITY**

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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 Culbertson Armory. The paragraphs are numbered to correspond to the sections where first noted. (i.e., N.4.2 describes the following: the N is Conclusions & Recommendations and the 4.2 corresponds back to Section 4 – Findings and Recommendations; Item 2 – Painted Surface Evaluation).

### **N4.1 Lead Wipe Sampling**

Housekeeping practices need to improve. Review the Armory SOP for lead cleanup and follow-up housekeeping recommendations. Follow the guidelines for cleaning. Have follow-up testing conducted to ensure lead levels have dropped to acceptable concentrations.

### **N4.8 Safety Training and Record Keeping**

Review the HazCom Program annually and revise as necessary.

### **N4.11 Safety Walk-Through**

1. Install a means of alerting employees of a fire.
2. Perform monthly and yearly inspections of fire extinguishers as required.

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**APPENDIX O**

**DD FORMS 2214**



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**THIS TASK DOES NOT APPLY TO THIS FACILITY**

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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.



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## FACILITY INFORMATION WORKSHEET

<b>Fire alarm</b> in working condition - -not usually in place in older armories	Not applicable
<b>Fire extinguishers</b> in place and properly identified and mounted	Yes
Evidence of <b>monthly fire extinguisher inspections</b>	Yes, but out of date. Last inspection February 2012.
<b>Annual</b> fire extinguisher inspections tags current	No, Due in February 2013.
Are <b>eye wash stations</b> available in areas where hazardous materials are used and are they inspected weekly (inspections must be documented)	N/A
<b>Egress</b> routes accessible and properly marked - -noted on <u>Fire Evacuation Plan</u>	Yes
<b>Training programs</b> in place; Hazcom, Respiratory Protection, Confined Spaces, Hearing conservation, PPE (if applicable)	All staff deployed. Record of Hazcom training dated April 2010.
Any Photo labs	No
Any hazardous <b>noise</b> sources	Not applicable
<b>Light levels</b> checked throughout building	Yes
<b>Breaker panels</b> properly labeled with no exposed wiring	Yes
<b>Check building occupancy</b>  1. How many military personnel, how many civilian personnel 2. What types of units occupy facility, i.e. Administrative, Maintenance, etc.?	1. 1 full-time military / 0 civilian personnel 2. Administrative
Any <b>civilian activities</b> in armory (cub scouts, classes, day care, parties etc)	No
Obtain two <b>lead air samples</b>	On IHSW Request Only



Evaluate Kitchen Stove Hood Flow if Present IAW NFPA Standard 96.	Done
Collect Source Noise Measurements of Kitchen Appliances and Document Using DD 2214	Not applicable
Conduct a safety walkthrough of entire facility document any safety deficiencies found.	Done
<b>Take photos</b> of outside of building, all <b>sample points</b> and any <b>pertinent hazards</b> or concerns.	Done
Name of Armory, POC, phone #, address and organizations in Armory  (Add Checklist to Report)	Culbertson Armory <b>Non-Responsive</b> 819 6 <sup>th</sup> Avenue East Culbertson, Montana 59218 406-324-5500  (Add Checklist to Report)

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**APPENDIX R**

**INSTALLATION STATUS REPORT**



## FY 11 Installation Status Report (ISK) Services Documentation

Breathing Zone samples collected above Occupational Exposure Limit (OEL), with no controls					Intellcode	Q1	Q2	Q3	Q4 Annual
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					953-01-04	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	0			
Total number of DOEHRs-IH shops coded as Priority 1					953-02-10	0			
Number of buildings for which all processes requiring a basic industrial hygiene characterization have received one within the last 12 months					953-02-11	0			
Number of buildings requiring a basic industrial hygiene characterization within the last 12 months					953-02-11	0			
Number of buildings for which all processes requiring a basic industrial hygiene characterization have received one within the last 12 months					953-02-12	0			
Number of buildings requiring an industrial hygiene exposure assessment within the last 12 months					953-02-12	0			
Number of processes that were assessed for potential inhalation exposure to employees during this IH Visit					953-02-13	0			
Number of processes that require an assessment for potential inhalation exposure to employees during this IH Visit					953-02-13	0			
Number of processes that were assessed for potential inhalation exposure to employees within the last 12 months.					953-02-14	0			

FY 11 Installation Status Report (ISR) Services Documentation		Intellicode	Q1	Q2	Q3	Q4 Annual
Number of processes that require an assessment for potential inhalation exposure to employees within the last 12 months.		953-02-14	0			
Number of personnel who were reassessed by industrial hygiene within the last 12 months.		953-02-15	0			
Number of personnel who required reassessment by industrial hygiene within the last 12 months.		953-02-15	0			
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	0			
Number of processes which require measurement for potential hazardous noise levels using a sound level meter within the last 12 months.		953-02-16	0			
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	0			
Number of personnel who require work shift dosimetry to quantify their daily noise exposures within the last 12 months.		953-02-17	0			
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	0			
Number of design review packages which required IH evaluation and recommendations applicable to occupational health concerns		953-02-20	0			

*Outstanding  
2013*





## 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

**Dillon Armory**  
**1070 Highway 41 North**  
**Dillon, MT 59725**

*25 Sept 2012*

20,000 Army Aviation Drive, Reno, NV 89506 (775) 771-3956 - 10515 Georgetown Drive, Rancho Cordova, CA 95870 (916) 804-1707



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

ARNG-CSG-P

24 June 2013

MEMORANDUM THRU **Non-Responsive** DSS, 1956 Mt. Majo St. Fort Harrison, MT

FOR Commander Dillon Armory 1070 Hwy 41 North, Dillon, MT 59725

**SUBJECT:** Executive Summary for Industrial Hygiene Site Assistance Visit (SAV) for the Dillon Armory 1070 Hwy 41 North, Dillon, MT conducted on 25 September 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 Dillon Armory at 1070 Hwy 41 North, Dillon, MT on 25 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.

- a. A building inspection of the armory, for asbestos, should be provided and a management plan in place for personnel working at and on the facility should be written from that inspection. (para. 4.4) (RAC 3)

**SUBJECT:** Executive Summary for Industrial Hygiene Site Assistance Visit (SAV) for the Dillon Armory 1070 Hwy 41 North, Dillon, MT conducted on 25 September 2012

- b. Record fire extinguishers inspections which should be done monthly and annually with documentation on extinguisher. (para. 4.10) (RAC 4)
- c. Add more task lighting or brighter light bulbs to the existing light fixtures to increase the illumination level on all areas of the drill floor to at least 30 foot candles (FC). (para. 4.5) (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 and submit for review and obtain approval from the state Industrial Hygiene, Occupational Health and Safety Professions.



**SUBJECT:** Executive Summary for Industrial Hygiene Site Assistance Visit (SAV) for the Dillon Armory 1070 Hwy 41 North, Dillon, MT conducted on 25 September 2012

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 Montana 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**

*For*  
**Non-Responsive**  
[Redacted Signature]  
NGB, IHSW, CIV  
Industrial Hygiene

**Industrial Hygiene, Southwest  
Hazard Inventory Log  
Dillon Armory, MT 59725**



CONTROL NUMBER	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/NCOIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
CLOSED									
MTDA-092512-4.4	No Asbestos Management Plan at facility.	Armory	3	Acquire the most recent Asbestos Management Plan for the Armory and make it accessible to all personnel who work there.					Best Management Practices
MTDA-092512-4.5	Insufficient illumination on the Drill Floor.	Armory Drill Floor	4	Add Additional task lighting or brighter light bulbs to the existing light fixtures to increase the illumination level on all areas of the Drill Floor to at least 30 FC.					ANSI RP7-1991
MTDA-092512-4.9	Vehicle exhaust system	Maintenance Bay	4	Evaluate maintenance or repair needs to drops, or redesign system to meet minimum standards of 300 CFM/diesel engines and 1400 CFM/turbo charged engines.					ACGIH Ventilation Manual figure VS-03 & General Duty Clause 5(a)(1) & Prudent Industrial Hygiene Practice
MTDA-092512-4.10	Fire extinguishers located in the building were not up to date on annual inspections.	Armory	4	Have all out of date fire extinguishers inspected and maintain current annual inspection tags.					29 CFR 1910.157(e)(3)

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## ***ARMORY***

### **CLEANUP & FOLLOW-UP HOUSEKEEPING RECOMMENDATIONS**

#### **Materials Needed:**

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

#### **Disposal of Waste Water and Cleaning Materials:**

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



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

### **Post-Cleanup Precautionary Measures:**

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

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

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

### **Initial Armory Cleanup:**

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

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

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

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

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

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

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

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



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

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

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

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

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



INDUSTRIAL HYGIENE SITE ASSISTANCE VISIT (IHS AV)

DILLON ARMORY  
1070 HIGHWAY 41 NORTH  
DILLON, MT 59725

September 25, 2012

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

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

NES Job Number: 013.IH1374.72

*Prepared by:*

**Non-Responsive**

**Non-Responsive**

*Principal-in-Charge*

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**EXECUTIVE SUMMARY**

During September 25, 2012, [Non-Responsive] Industrial Hygiene Field Technician of NES, Inc. (NES) conducted an Industrial Hygiene Site Assistance Visit (IHSAV) at the Dillon Armory located at 1070 Highway 41 North in Dillon, Montana 59725. The primary point of contact for information gathered during this survey was [Non-Responsive] phone: (406) 683-8773.

The objectives of this IHSAV were to perform the following activities:

- Evaluate configuration of battery storage and charging facilities;
- Review hazardous material storage and use procedures;
- Review the Respiratory Protection Program and respirator use/storage;
- Collect area and breathing zone air samples;
- Collect metal surface wipe samples;
- Measure the volumetric flow of local exhaust ventilation systems;
- Monitor employee noise exposures through noise dosimetry and source measurements;
- Measure illumination levels;
- Collect indoor air quality data;
- Evaluate any existing safety hazards; and
- Review safety policies/programs, training, and record keeping.

Significant findings for this IHSAV can be found in the Industrial Hygiene Southwest – 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 task descriptions, work space locations, regulatory requirements, and additional recommendations.

Appendices may be left blank where information has been requested from the facility and not yet received.

Commendables: [Non-Responsive] went above and beyond expectations to help NES complete the IHSAV.

## 1.0 INTRODUCTION

During September 25, 2012, [Non-Responsive] Industrial Hygiene Field Technician of NES, Inc. (NES) conducted an Industrial Hygiene Site Assistance Visit (IHSAV) at the Dillon Armory located at 1070 Highway 41 North in Dillon, Montana 59725. The primary point of contact for information gathered during this survey was [Non-Responsive] phone: (406) 683-8773.

## 1.1 IHSAV Objectives

The objective of the IHSAV is to 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 assist the Army National Guard in managing 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 Dillon Armory has three full time guard members. Two of the members were not in the office at the time of the survey. The Armory has offices used for administrative and recruiting purposes. The armory contains a drill floor, multiple classrooms, a maintenance bay, a break room, storage rooms, and a kitchen for Army National Guard member training functions. There are no civilian employees at this Armory. Civilian functions carried out in this Armory including temporary leases for functions such as birthday parties. The drill floor is occasionally used by Army National Guard members as a staging area to clean weapons.



### **3.0 METHODS**

#### **3.1 Lead Wipe Sampling**

Metals wipe samples were collected on horizontal work and floor surfaces in various locations throughout the facility. Ghost Wipe™ brand wipes were used by wiping a one square foot template. The collected wipe samples were placed in clean and labeled centrifuge tubes. Samples were submitted to ALS Environmental Laboratories located in Salt Lake City, Utah for analysis, using 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 E for a drawing of sample locations. See Appendix I, table 1 for lead wipe sampling analytical results. See Appendix J for laboratory reports.

#### **3.2 Painted Surface Evaluation**

The interior and exterior of the Armory was visually inspected for peeling paint on the walls and ceilings. All samples, if collected, were submitted to ALS Laboratory Group (ALS) in Salt Lake City, Utah. ALS analyzed the samples for lead using NIOSH 7300 modified method.

#### **3.3 Water Damage and Limited Visual Fungal Growth Evaluation**

The interior of the Armory was visually inspected for water damage and subsequent fungal growth resulting from moisture. Any water impacted areas noted was documented on a drawing for a follow-up evaluation.

#### **3.4 Asbestos Documentation**

An evaluation asbestos documentation was performed. This evaluation consisted of determining if an asbestos survey and assessment have been done. If any suspected asbestos containing material (ACM) is suspected, bulk sampling is performed.

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

An evaluation of the heating, ventilation, and air-conditioning systems that serve the Armory was accomplished. This evaluation consisted of determining if a maintenance plan is in place and a visual inspection of the system was performed to note any obvious operational problems.

Carbon dioxide (CO<sub>2</sub>), temperature, relative humidity and Carbon monoxide (CO) were measured using a TSI Model 855 IAQ-Calc™ Monitor. The unit was calibrated before use with certified zero gas and 1,000-ppm CO<sub>2</sub> span gas. Carbon dioxide 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 CO<sub>2</sub>, water vapor, and other bio effluents. The American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE), in their Standard 62.1-2010, *Ventilation for Acceptable Air Quality*, recommend maintaining CO<sub>2</sub> below a concentration that is 700 parts per million (700 ppm) above outdoor levels. Outside CO<sub>2</sub> concentrations are typically about 350 ppm. Providing sufficient ventilation to maintain steady-state CO<sub>2</sub> 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). ASHRAE also recommends an outside air supply rate of 20 cubic feet per minute (20 cfm) per building occupant in office spaces, and, at that ventilation rate, CO<sub>2</sub> concentrations should not increase over time. Outside air supply rates were not measured during this IHSAV since CO<sub>2</sub> concentrations were within an acceptable range. A copy of the annual calibration certificate for this instrument is located in Appendix H.

### **3.6 Illumination Level Monitoring**

Illumination measurements were taken throughout the Dillon Armory. The instrument used for the illumination survey was an Konica Minolta Light Meter, Model TL-1. Measurements taken were obtained at typical working locations such as desks, computers, workstations and general working areas. See Appendix E for illumination data.

### **3.7 Hazardous Material Storage and Use Procedures**

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 as part of this IH Site Assistance Visit.

### **3.8 Safety Training and Record Keeping**

An inspection of the Armory's training programs and training documentation was performed to determine if the site specific training programs and annual documentation is current.



### 3.9 Ventilation Survey

Air velocity and flow measurements were measured on the kitchen hood over the gas range using a TSI VelociCalc™ Plus, Model 8386A. Results will be evaluated for compliance with TM 5-810-1, prepared by Headquarters, Department of the Army, June 1991 which sets a criteria of 50 feet per minute (fpm) for open hood sections and 75 (fpm) for grease filter sections, measured at the horizontal hood opening.

Air flow measurements were taken from two overhead vehicle exhaust drops located inside of the maintenance bay by using a TSI VelociCalc™ Plus, Model 8386A. The results will be evaluated for compliance with the US Army Corps of Engineers specifications for minimum exhaust rates by engine horsepower (HP). See Appendix F for data tables.

### 3.10 Sound-Level Measurements

Sound-level measurements were not conducted on kitchen appliances because no hazardous noise sources were identified during the IHS AV.

### 3.11 Safety Walk-Through

A safety walk-through evaluation of the Armory was performed to document the presence of a fire alarm, to determine if fire extinguishers are properly mounted and are current on their monthly and annual inspections, ground fault circuit interrupter (GFCI) measurements and inspection, if eyewash stations inspections are current, and to document any fire or safety hazards in the Armory.

### 3.12 Equipment Used

The following equipment was used for this survey.

Equipment Type	Model Number	Serial Number	Calibration Date
Konica Minolta Light Meter	TL-1	279029	05/2012
TSI IAQ-Calc™ Meter	8551	51380	11/2012
TSI VelociCalc™ Plus Meter	8386A	84110581	03/2012

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

### 3.13 Quality Assurance

NES, 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 and;
- 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

Wipe samples for lead dust, were collected from horizontal surfaces in selected representative areas of the Dillon Armory to determine if housekeeping efforts are successful. The US Department of Housing and Urban Development (HUD), recommends a 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. This criterion is applied to any areas of a facility that may be used by the public for nonmilitary functions. These areas include: converted indoor firing ranges; drill halls; locker rooms; class rooms; and fitness areas. Areas of a facility which are not specifically listed are expected to be, "maintained as free as practicable of accumulations of lead," as specified by the Occupational Safety & Health Administration (OSHA) in 29 CFR 1910.1025 (h)(1). The Army National Guard has determined lead concentrations less than 200  $\mu\text{g}/\text{ft}^2$  is practicable for maintenance type facilities. This criterion is applied to areas such as maintenance bays, and tool rooms, which are not routinely accessible to the general public.

A total of 7 Ghost Wipe™ lead samples were taken during the time of the IHSAV. The first five samples were collected from the drill floor surface areas. The analytical results for each of the drill floor samples were below the 40  $\mu\text{g}/\text{ft}^2$  for lead dust.

Additional lead wipe sampling was taken from approximately 25% of the rest of the building. The 2 additional areas samples were collected from the following areas: the kitchen and the break room. The analytical results for the kitchen was below the  $\leq 40 \mu\text{g}/\text{ft}^2$  criterion; the sample from the break room was below the  $\leq 200 \mu\text{g}/\text{ft}^2$  criterion.

The analytical results are provided in the table below.

Sample Number	Sample Area	Sample Location	Results ( $\mu\text{g}/\text{ft}^2$ )	ARNG Standard
92512-Dillon-01	Drill Floor	Northwest corner of drill floor, floor area sample	7.7	$\leq 40 \mu\text{g}/\text{ft}^2$
92512-Dillon-02	Drill Floor	Southwest corner of drill floor, floor area sample	3.9	$\leq 40 \mu\text{g}/\text{ft}^2$
92512-Dillon-03	Drill Floor	Center, middle of drill floor, floor area sample	4.5	$\leq 40 \mu\text{g}/\text{ft}^2$
92512-Dillon-04	Drill Floor	Northeast corner of drill floor, floor area sample	3.2	$\leq 40 \mu\text{g}/\text{ft}^2$
92512-Dillon-05	Drill Floor	Southeast corner of drill floor, floor area sample	5.4	$\leq 40 \mu\text{g}/\text{ft}^2$
92512-Dillon-06	Kitchen	Kitchen floor sample	5.4	$\leq 40 \mu\text{g}/\text{ft}^2$
92512-Dillon-07	Break Room	Break Room floor sample	$< 2.5$	$\leq 200 \mu\text{g}/\text{ft}^2$

See Table 1 in Appendix I for a table of results. The laboratory reports are supplied in Appendix J. Photographs were taken of each sampling point and are presented in Appendix C.

#### 4.2 Painted Surface Evaluation

No paint chip samples were collected from the Dillon Armory. The interior painted surfaces along with the exterior painted surfaces were inspected and no peeling paint was observed.

#### 4.3 Water Damage and Limited Visual Fungal Growth Evaluation

During the inspection of the facility no water damage was observed in any areas of the Dillon Armory.

#### 4.4 Asbestos Documentation

There was no documentation regarding asbestos at the Dillon Armory. According to our POC **Non-Responsive** the building was built in 2006. There was no suspected ACM observed during the site visit. Personnel at the Dillon Armory should acquire a document from the contractor of the building stating that no asbestos products were used in the construction of the facilities and keep documentation on file at facility.



#### 4.5 Illumination Level Monitoring

Illumination levels were measured throughout the facility. The numbers represent the illumination level 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.

Based on the above criterion, the lighting in the drill floor ranged from 16.9 FC to 22.3 FC which is below the recommended criterion of 30 FC. Inadequate illumination levels should be increased by replacing burned out bulbs, increasing the wattage of light fixtures, painting wall a lighter, more reflective color, or adding task lighting.

#### 4.6 Heating, Ventilation, and Air-Conditioning Systems and Indoor Air Quality

The HVAC systems were all functioning and up to date on maintenance and inspections during the time of the IHSAV.

The average outdoor carbon dioxide concentration at the time of the survey was approximately 330 ppm; therefore, the maximum indoor CO<sub>2</sub> level recommended by the ASHRAE Standard would be 1,030 ppm. Carbon dioxide concentrations throughout the facility were lower than 1,030 ppm; the highest CO<sub>2</sub> concentration measured was 415 ppm in the lobby.

Building air temperatures ranged from 71°F to 74°F and relative humidity was between 43% and 51% during the testing period. ASHRAE recommends maintaining temperatures between 68°F and 75°F. Relative humidity should be maintained between 30% and 60% to minimize the growth of allergenic or pathogenic organisms.

## **4.7 Hazardous Material Storage and Use Procedures**

### **4.7.1 Hazardous Materials Inventory & Material Safety Data Sheets (MSDS)**

Inventories of all hazardous materials used by the Armory along with their associated Material Safety Data Sheets (MSDSs) are maintained in a master binder. Inventories and MSDSs are also maintained in separate binders, one for each satellite storage location (i.e. flammable storage room or cabinet). The master chemical inventory and MSDS binder is arranged by a Federal Stock Class and National Stock Number (NSN). The inventories and MSDSs are arranged by product location on the shelf, using alphanumeric designations. Copies of chemical inventories are provided in Appendix D.

### **4.7.2 Flammable Storage Cabinets**

There are three HAZMAT storage lockers located at the Armory. There is also a cleaning closet containing cleaning supplies. The lockers were located in the interior of the building in a well-ventilated area. These flammable lockers were inspected and no storage incompatibilities or leaking materials were found. The lockers were in good condition and all doors were noted to close properly.

### **4.7.3 Flammable and POL Storage**

There is a POL shed located at the Dillon Armory located outside near the maintenance bay. No leaking materials were observed inside of the POL shed. Secondary containment was incorporated into storage of the materials. According to our POC, used POL's are picked up by FMS#5 which is located in Belgrade, MT.

## **4.8 Safety Training and Record Keeping**

The following training documentation was found at the site:

- Hazcom training
- Waste Management Plan training
- Hearing Conservation

## **4.9 Ventilation Survey**

Tests on the kitchen hoods indicated no velocity measurements at the canopy hood opening were less than 50 feet per minute (fpm). Results are in compliance with TM 5-810-1, prepared by Headquarters, Department of the Army, June 199 which sets criterion of 50 fpm for open hood sections and 75 fpm for grease filter sections, measured at the horizontal hood opening. Kitchen canopy hood measured 128 inches by 48 inches.



Vehicle exhaust drops located inside of the maintenance bay were tested for CFM (cubic feet per minute) airflow measurements. There are two vehicle exhaust drops at the Dillon Armory. The north vehicle exhaust drop tested at 246 CFM and the south vehicle exhaust drop tested at 319 CFM.

The POC stated that the Armory currently uses the following information as airflow guidelines:

Diesel Engines up to	Required CFM
200 HP	300
300 HP	400
500 HP	600
700 HP	1000
500 HP (Turbo Charged)	1400

The American Conference of Governmental Industrial Hygienists (ACGIH) recommends a minimum of 400 to 1200 CFM for diesel engines and 1200 to 2200 CFM for turbo-charged diesel engines. Based on the above criterion, the vehicle exhaust ventilation drops do not have sufficient flow to capture exhaust from diesel or turbo charged vehicles.

See Appendix F for data tables.

#### 4.10 Sound-Level Measurements

Sound-level measurements were not taken on kitchen appliances in this Armory. No high noise or hazardous noise areas were identified during the IHSAV.

#### 4.11 Safety Walk-Through

1. Housekeeping throughout the facility was great. There is a break room separate from the shop areas for employee use.
2. Fire extinguishers are strategically located throughout the shop. All extinguishers were out of date for annual inspections as of August 2012. The facilities maintenance employee maintains a log of monthly fire extinguisher inspections.
3. The eyewash stations were checked weekly; documentation was current.
4. Fire evacuation plan is documented, visual throughout the building and seems to be communicated to all personnel. Egress routes are marked of the fire evacuation plan.
5. All GFCI outlets functioned properly when tested.



## 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, Company professional opinions are based in part on the interpretation of data from discrete sampling locations that may not represent conditions at non-sampled locations. Company assumes no responsibility for omissions or errors resulting from inaccurate information or data provided by sources outside of Company, 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 Company 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 Site Assistance Visit was reviewed and approved by:

**Non-Responsive**

January 28, 2013

Date

Principal-in-Charge

Technical Assistance: For technical assistance regarding information found in this report or the performed survey, please contact **Non-Responsive** at 916-353-2360, or **Non-Responsive** of the Southwest Regional Industrial Hygiene Office, 916-804-1707. Contact the State Safety and Occupational Health Office and/or the Regional Industrial Hygienist 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  
DILLON ARMORY  
DILLON, MONTANA  
SEPTEMBER 25, 2012**



**Photo 1: Dillon Armory, Dillon, Montana**



**Photo 2: Dillon Armory, signage in front of building.**

**PHOTO LOG  
DILLON ARMORY  
DILLON, MONTANA  
SEPTEMBER 25, 2012**



**Photo 3:** Lead wipe sample 92512-Dillon-01 from Drill Floor, northwest corner.



**Photo 4:** Lead wipe sample 92512-Dillon-02 from Drill Floor, southwest corner.



**PHOTO LOG  
DILLON ARMORY  
DILLON, MONTANA  
SEPTEMBER 25, 2012**



**Photo 7:** Lead wipe sample 92512-Dillon-05 from Drill Floor, southeast corner.



**Photo 8:** Lead wipe floor sample 92512-Dillon-06 from entrance to kitchen.

**PHOTO LOG  
DILLON ARMORY  
DILLON, MONTANA  
SEPTEMBER 25, 2012**



**Photo 9: Lead wipe floor sample 92512-Dillon-07 from break room.**

# Print Inventory

Print Inventory

Cancel

Unit: Det 2 1063 SMC

Storage: FL 01

Month: 9/1/2012

SLN	Item	NSN	Manufacturer	MSDSID	Quantity	Unit of Issue	Shelf Life	HCC
1A1	GAA	9150-01-197-7693	SOWESCO	CNXYZ	25	TB		N1
1A2	QUICK START	2910006469727	QUICK START PRODUCTS		9	BTL		
1A3	2 CYCLE ENGINE OIL	0	HOMELITE		2	BT		N1
1A4	ENGINE OIL 10W	9150-01-177-3988	SCOTT	CSQWW	2	QT	7	
1A5	ENGINE OIL 15W-40	9150-01-421-1427	SAFETY-KLEEN SYSTEMS INC		7	QT		
1A6	GEAR LUBE UNIVERSAL 80W/90		CHEVRON		1	QT		V6
1A7	LUBE GENERAL PURPOSE	9150-00-231-6689	AMERICAN INK	BDLCK	2	QT	6	V6
1A8	LOW TEMP WEAPONS	9150-00-292-9689	CASTROL	CLLPM	1	QT	6	V6
1A9	SILICONE BRAKE FLUID	9150-01-102-9455	DOW CORNING		4	GL		N1
1B1	GAA	9150-01-197-7692	SOWESCO	CNJRK	1	5 GL	7	V6
1B2	GEAR LUBE 80W90	9150-01-035-5395 OR 5393	NAUGHTON		1	5 GL		N1
1B3	HARDING COMPOUND	6850-00-695-9268	MIDDLE STATE	CPSDS	1	5 GL		N1



# Print Inventory

Print Inventory

Cancel

Unit: Det 2 1063 SMC

Storage: FL 02

Month: 9/1/2012

SLN	Item	NSN	Manufacturer	MSDSID	Quantity	Unit of Issue	Shelf Life	HCC
2A1	ENAMEL, BEIGE	8010-01-350-5252	ECOSURE	BYYPH	8	CN 12OZ		V3
2A2	LAQUER GLOSS WHITE	8010-00-290-6983	LHB	CPZJD	4	CN 100Z		V3
2A3	LAQUER FLAT BLACK	8010-01-331-6108	LHB	CQWGV	3	CN		V3
2A4	LAQUER GREEN	8010-01-332-3744	LHB	BVTMC	12	CN 100Z		V3
2A5	WD40	8030-00-458-0075	WD40	CFVZM	5	CN 110Z		V3
2A6	SCREEN CLEANER (GLASS)	LOCAL PURCHASE	SUNSHINE		1	CN 18OZ		V3
2A7	STARTING FLUID		SPRAY PRODUCTS		3	CNS		
2A8	NAPA STARTING FLUID		NAPA/MARS		1	CN		
2A9	BATTERY CLEANER	LOCAL PURCHASE	NOCO	CJRDJ	4	CN 14 OZ		V3
2B1	AIR FRESHENER	0	GLADE	110559003	6	CN 13OZ		V3
2B2	FURNITURE POLISH	7930-00-F02-2364	JOHNSON	BNFFW	3	CN 18OZ		
2B3	WINDSHIELD FLUID	6850-00-926-2275	LHB	CPYJQ	12	BT 16OZ		F2
2B4	WINDSHIELD CLEANER		LOCAL PURCHASE		2	BTL		
2C1	PF DEGREASER	7930-01-328-5960	PT TECHNOLOGIES	BLXLQ	4	GL	7	V3

# Print Inventory

Print Inventory

Cancel

Unit: Det 2 1063 SMC

Storage: FL 03

Month: 9/1/2012

SLN	Item	NSN	Manufacturer	MSDSID	Quantity	Unit of Issue	Shelf Life	HCC
3A1	HIGH TEMP RTV SILICONE	LOCAL PURCHASE	PERMATEX	NONE	1	TB 30Z		
3A2	620 RETAINING COMPOUND	LOCAL PURCHASE	LOCTITE	NONE	1	BT 1.7 OZ		
3A3	HAND CLEANER	8520-00-082-2146	MAKOOR	BDKNG	5	TB	6	N1
3A4	PIPE SEALANT	LOCAL PURCHASE	PERABOND	NONE	6	TB		N1
3A5	WICKING COMPOUND	8030-00-148-9833	CHEMENCE	CJKB	4	BT	4	N1
3A6	GASKET ELIMINATOR	LOCAL PURCHASE	LOCTITE	NONE	1	TB		T6
3A7	CLP	9150-01-102-1473	CSD		38	BTL		
3A8	LUBRICATING OIL, SEMIFLUID	9150-00-935-6597	NONE		6	BTL		
3B1	RTV ADHESIVE	8040-00-902-3871	ACCUMETRIC	CFWZD	1	TB	4	T6
3B2	LUBRIPLATE	LOCAL PURCHASE	FISKE BROTHERS	NONE	2	TB		N1
3B3	CLP	9150-01-053-6688	CSD	CMDPJ	2	GAL	7	N1
3B4	CLEANER, LUBRICANT AND PRESERVATIVE	9150-01-054-6453	SENTINAL	CMDPJ	1	BTL	7	N1
3B5	FORM A GASKET PART 1	LOCAL PURCHASE	PERMATEX	NONE	1	TU		
3B6	LUBE OIL COMPRESSOR	9150-00-753-4667	TENNECO CHEM INC	BTVZP	1	BT	6	V6

## Print Inventory

Print Inventory

Cancel

Unit: Det 2 1063 SMC

Storage: CLEANING CLOSET

Month: 9/1/2012

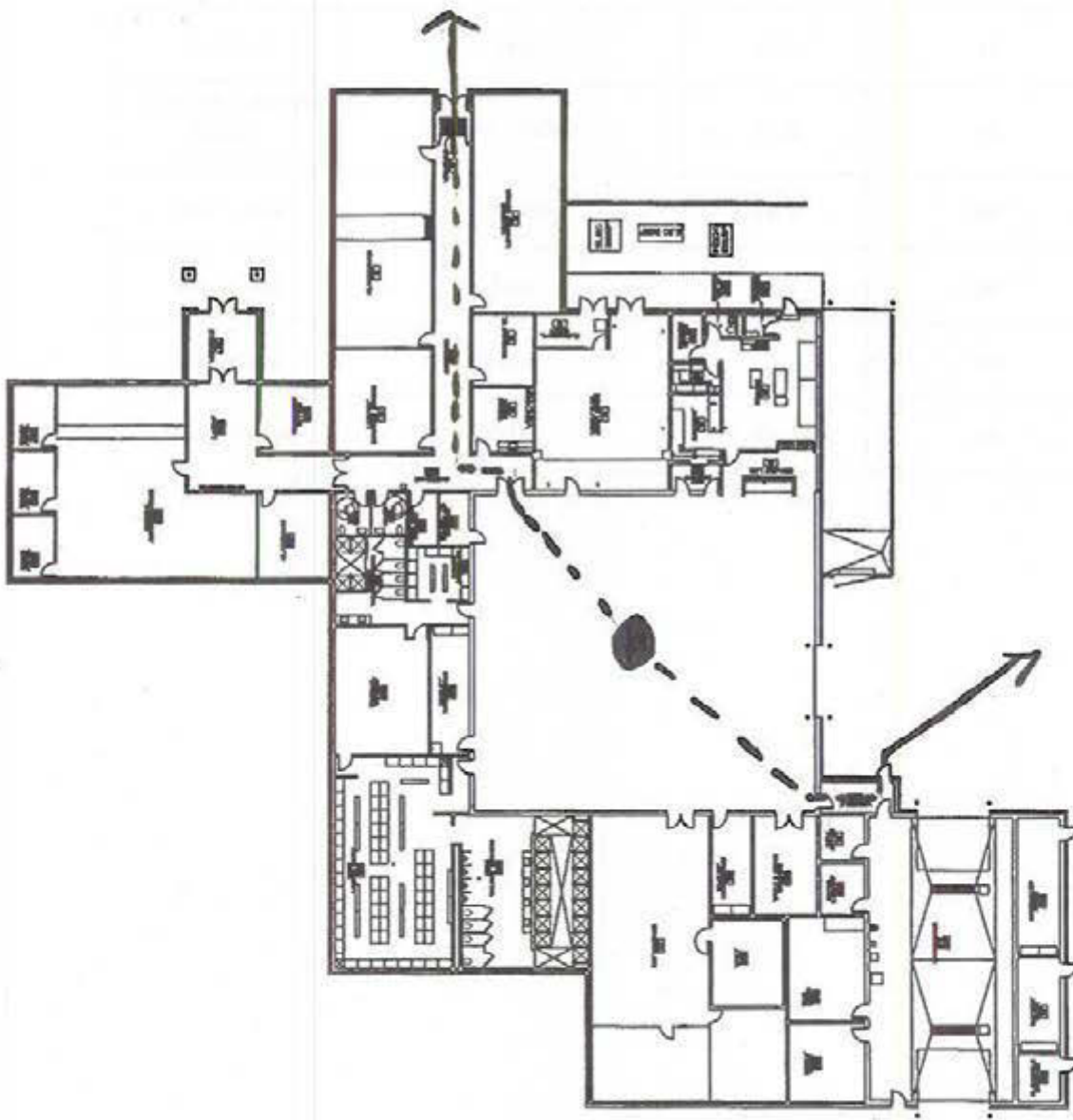
SLN	Item	NSN	Manufacturer	MSDSID	Quantity	Unit of Issue	Shelf Life	HCC
01	Classic Shine Wax and Polish		Unisource		5	Can		
02	SKILCRAFT CLEAN ALL-PURPOSE	7930009265280	THE LIGHTHOUSE OF HOUSTON		30	BTL		
03	3M DESK & OFFICE CLEANER	7930014118931	3M GENERAL OFFICES		2	CN		
04	Pledge Lemon (aerosol)	7930013813491	JohnsonDiversey	126026007	6	BTL		
05	S.O.S.		Clorox		1	Box		
06	SKILCRAFT GLASS CLEANER	7930003268110	THE LIGHTHOUSE OF HOUSTON		8	BTL		
07	SPRAYPAK AIR FRESHENER		SPRAYPAK		4	CNS		
08	TOILET BOWL BLOCKS		KRYSTAL		4	BOXES		
09	WINDEX POWERIZED GLASS CLEANER	7930013813499	JOHNSONDIVERSEY, INC		4	BTL		
10	HORIZON 100 GLASS CLEANER	793000F038660	SC JOHNSON & SON	BWVMH	3	BTL		
11	JAWS		SKILCRAFT		1	BTL		
12	409 ALL PURPOSE CLEANER		CLOROX		2	BTL		
13	Ring Master All-Purpose Bathroom Cleaner		ZEP		11	QTS		



14	Bufferall		RMC	1	GAL
15	URINAL BLOCKS		PARACARE	4	BOXES
16	VIREX 256 DISINFECTANT		JOHNSON DIVERSEY	1	2.5L
17	Green Earth Floor Cleaner		BETCO	4	QTS
18	LIQUID HAND SOAP	8520-00-228-0598	LIGHTHOUSE FOR THE BLIND	6	GAL
19	MICRELL ANTIBACTERIAL LOTION SOAP	8520014907367	GOJO INDUSTRIES, INC	2	GAL
20	Special Glass Cleaner		Renown	1	Gal
21	HORIZON 100 GLASS CLNR		RENOWN	1	GAL
22	POWER GREEN	7930013738848	LHB INDUSTRIES	4	GAL
23	GOJO HAND CLEANER		GOJO	4	BTL
24	GERMICIDAL ULTRA BLEACH		PURE BRIGHT	6	GAL

# Dillon Armory

## Dillon, Montana



FIRE EVACUATION PLAN

**IAQ MEASUREMENTS**  
**DILLON ARMORY**  
**DILLON, MONTANA**  
**SEPTEMBER 25, 2012**

Location	CO <sub>2</sub> max permissible level 1,030 ppm	Temperature permissible range 68 - 75°F	RH% permissible range 30-60%	CO max permissible range 200 ppm STEL
Main Office	402	71.8	51	0
Lobby	415	72.1	49.5	1
Break Room	350	72.1	46.7	1
Distance Learning Center	380	72.3	45.1	1
Drill Floor	343	73	44.8	1
Kitchen	346	73.4	44.0	1
Boiler Room	342	74	43.6	1

CO<sub>2</sub> = Carbon Dioxide

°F = Fahrenheit

RH = Relative Humidity

CO = Carbon Monoxide

STEL = Short Term Exposure Limit



**EXHAUST VENTILATION SYSTEM MEASUREMENTS**

**DILLON ARMORY  
DILLON, MONTANA  
SEPTEMBER 25, 2012**

**Hood over Gas Stove – 128 inches by 48 inches**

Monitoring Location	Linear Feet per Minute	Army National Guard Criteria
Face of ventilation hood	57 to 102	50 fpm

**North Vehicle Exhaust Drop – 6" Diameter**

Monitoring Location	Linear Feet per Minute (LFM)	Cubic Feet per Minute (CFM)
Face of ventilation duct	1,255	246

**South Vehicle Exhaust Drop – 6" Diameter**

Monitoring Location	Linear Feet per Minute (LFM)	Cubic Feet per Minute (CFM)
Face of ventilation duct	1,626	319

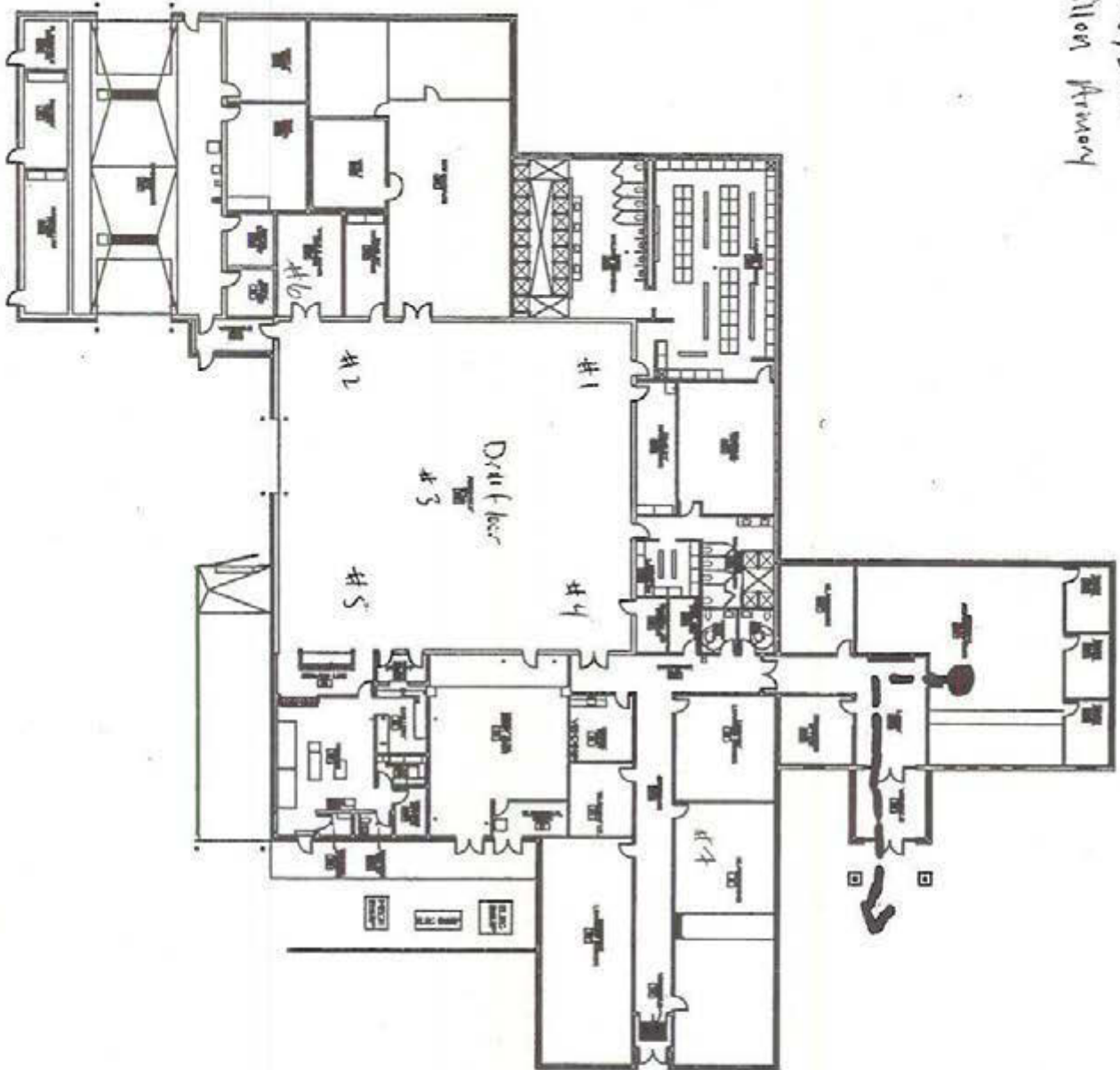
## Lead Wipe Samples - 9/25/12 - Dillon Armory

Sample #	Location
92512-Dillon-01	Drill Floor, NW
-02	SW
-03	Center
-04	NE
-05	SE
-06	Kitchen Entrance
-07	Break room.

Photo Log	Description
1	Front of building, South
2	Front building Sign
3	Sample 92512-Dillon-01, Drill Flo
4	Sample -02
5	Sample -03
6	Sample -04
7	Sample -05
8	Sample -06
9	Sample -07

Lead Wire Samples  
9/25/2012  
Dillon Army

Admin Area

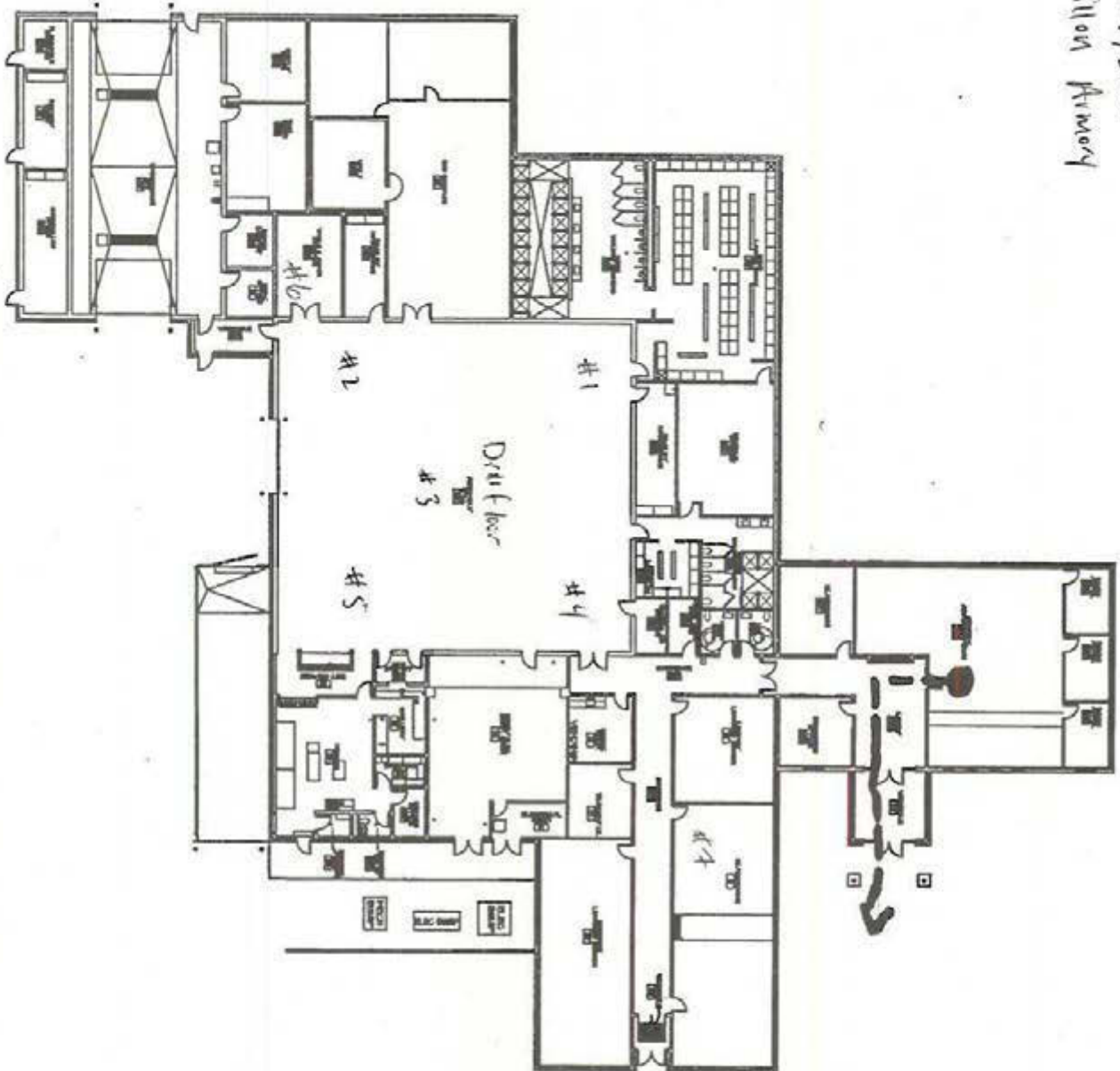


FIRE EVACUATION PLAN



Lead Wire Samples  
9/25/2012  
Dillon Army

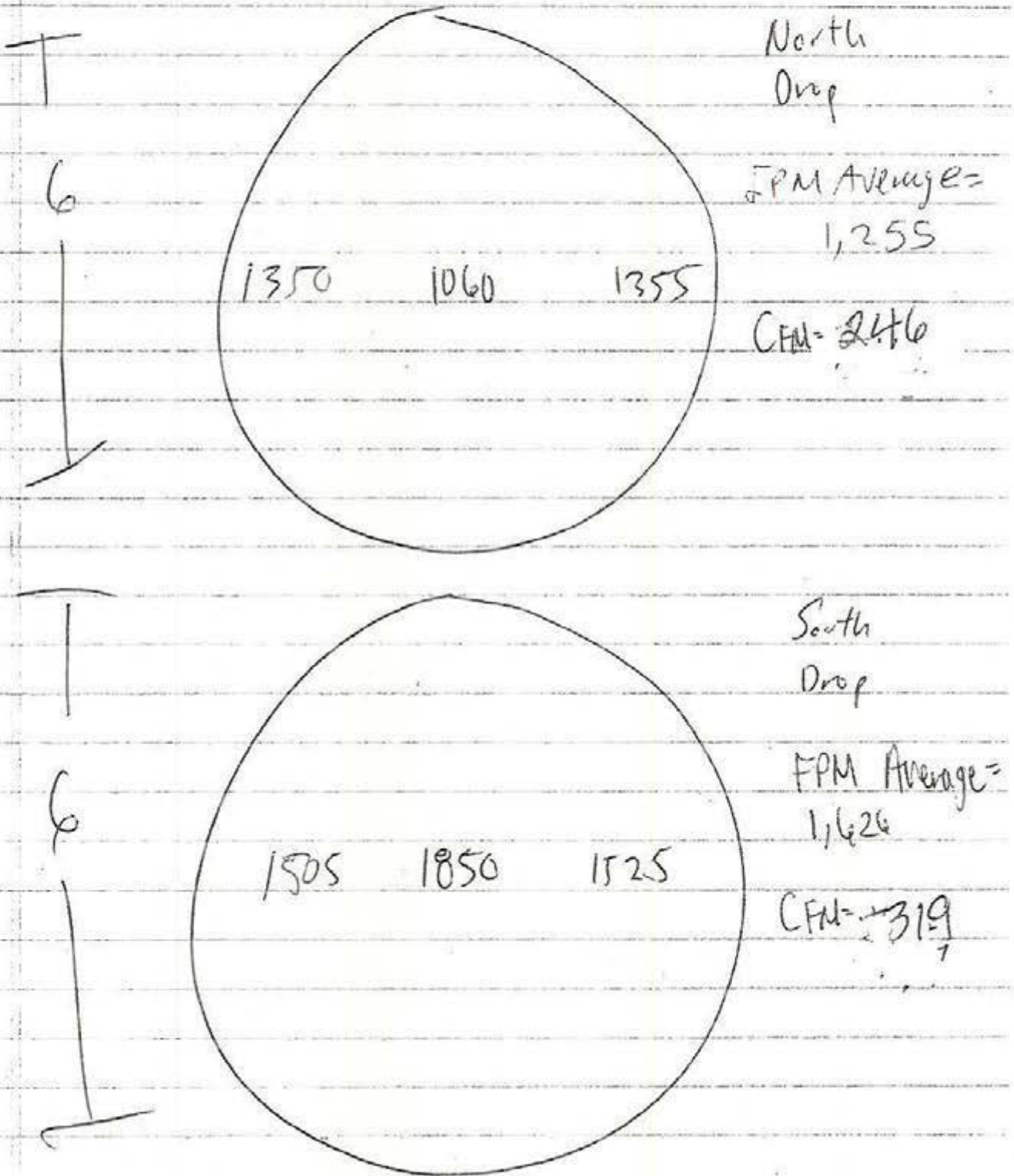
Admin Area



FIRE EVACUATION PLAN

Dillon Army

Vehicle Exhaust Drops - 9/25/2012



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

Five <b>lead wipe</b> samples collected from drill floor (take samples from dusty horizontal floor surfaces)	✓ 01-05
Are any <b>weapons cleaned</b> in the facility, if yes where are they cleaned?	Drill Floor
Additional lead wipe samples taken from 25% of the rest of the building - (on floor areas only)	06 - Kitchen 07 - <del>Break Room</del>
Is there a <b>converted indoor firing range</b> ? If so collect additional wipe samples IAW the SOW.	NO
Is there any <b>peeling paint</b> ? Take bulk sample if able.	NO
Are there any signs of water damage or mold?	NO
Any suspected <b>ACM</b> ? Where and what condition is it in. Bulk sample if able.	2006 No ACM
Quality of housekeeping	Great
HVAC maintenance plan in place?	Yes, through State
<b>Overall condition</b> of HVAC system	New, Working Condition.
Obtained CO2, Temp, RH monitoring	✓ Attached
<b>HAZMAT inventory</b> on hand (make copies for the report), MSDS available for all materials.	Yes
<b>HAZMAT storage</b> , Condition of lockers, if outside storage building is used is it ventilated and does it meet OSHA standards.	POL - FINS #5 Belgrade Pans up Chem - No Spills



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
Annual fire extinguisher inspections tags current	Aug 2011 - Due (Need)
Are eye wash stations available in areas where hazardous materials are used and are they inspected weekly (inspections must be documented)	Yes, in maintenance Bay.
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, <u>PPE</u> (if applicable)	Hazcom, Waste management Plan. Hearing conservation (Coveralls, plugs, etc) PPE (Gloves, hats)
Any Photo labs	N/A
Any hazardous noise sources	N/A
Light levels checked throughout building	Yes, Attached
Breaker panels properly labeled with no exposed wiring	Compliant - no issues
Check building occupancy  1. How many military personnel, how many civilian personnel 2. What types of units occupy facility, i.e. Administrative, Maintenance, etc.?	① 3  ② Supply/Admin, Recruits
Any civilian activities in armory (cub scouts, classes, day care, parties etc)	Youth Challenge - 2/3 times a month.
Obtain two lead air samples	On IHSW Request Only

Evaluate Kitchen Stove Hood Flow if Present IAW NFPA Standard 96.	✓ <i>Compliant</i>
Collect Source Noise Measurements of Kitchen Appliances and Document Using DD 2214	<i>N/A</i>
Conduct a safety walkthrough of entire facility document any safety deficiencies found.	
<u>Take photos</u> of outside of building, all sample points and any pertinent hazards or concerns.	
Name of Armory, POC, phone #, address and organizations in Armory  (Add Checklist to Report)	<i>Dillon Armory</i> <b>Non-Responsive</b> <i>1010 Highway 91 North</i> (Add Checklist to Report)

*Dillon, MT 59725*

**Non-Responsive**

Name: LB

Date:  
9/25/2012

NES Job Number:

0131H1374.72  
Dillon Army

## Ventilation Data

Measurements: 128' x 48'

FPM:

CFM:

FACE of Hood Vent -

102	96	95	80
77	69	64	63
76	62	60	60
61	60	57	57

Measurements: x

FPM:

CFM:




Name: LB

Date:

9/25/2012

NES Job Number:

013.1374.72

Dillon Armory

## IAQ Data

Building	Location	CO <sub>2</sub>	Temp °F	RH %	CO
Armory Dillon	Office (main)	402	71.8°F	51	0
	Lobby	415	72.1°F	49.5	1
	Break room	380	72.1°F	46.7	1
	Distance Learning Center	380	72.3°F	45.1	1
	Drill Floor	343	73°F	44.8	1
	Kitchen	346	73.4°F	44.0°	1
✓	Boiler Room	342	74°F	43.6	1

outdoor CO<sub>2</sub>: 330

Name:

LB

Date:

9/25/2012

NES Job Number:

013.1374.72

Dillon Armory

IAQ Data

Building	Location	CO <sub>2</sub>	Temp °F	RH %	CO
Armory Dillon	Office (Main)	402	71.8°F	51	0
	Lobby	415	72.1°F	49.5	1
	Break Room	350	72.1°F	46.7	1
	Distance Learning Center	380	72.3°F	45.1	1
	Drill Floor	343	73°F	44.8	1
	Kitchen	346	73.4°F	44.0°	1
	Boiler Room	342	74°F	43.4	1

Outdoor CO<sub>2</sub>: 330

Name:

LB

Date:

9/25/12

NES Job Number:

013.1H374.72

Dillon Amey

## Light Survey

Building	Location	Light - ft/c
Amey	Office / General Admin	61.1 f/c - Desk 98.6 f/c - Desk
	Recruiter office	65.0 f/c - Desk
	Hallway / Lobby	50.7 f/c
	Distance Learning Center / classroom	70.8 f/c
	Break room	table - 69.3 f/c
	Drill floor Center	16.9 f/c
	Drill floor EAST	22.3 f/c
	Classroom	117.9 f/c





# TSI - Customer Service report

Thank you for the opportunity to service your instrument.

**RMA Number: 800235189**

<b>Ship-to party</b> 5180406  IHSW NGB ARMY NATL GUARD 10510 SUPERFORTRESS AVE S MATHER CA USA	<b>Sold-to party</b> 5180406  IHSW NGB ARMY NATL GUARD 10510 SUPERFORTRESS AVE S MATHER CA USA
---	---

**Service Information:**

Purchase Order CC-Non-Responsive  
 Purchase Order Date 03/26/2012

**Description** Calibration of VelociCalc Plus 8386A

Equipment 57602 VELOCICALC Plus Air Velocity Meter  
 Serial Number 54110581  
 Material 8386A

**Service Description:**

**Return Reason:**  
 CALIBRATION OVERDUE

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

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



# 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	8386A
TEMPERATURE	68.4 (20.2)	°F (°C)	SERIAL NUMBER	54110581
RELATIVE HUMIDITY	36	%RH		
BAROMETRIC PRESSURE	28.61 (968.8)	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	643 (3.26)	640 (3.25)	623~662 (3.17~3.36)
2	34 (0.17)	35 (0.18)	31~37 (0.16~0.19)	8	995 (5.06)	991 (5.03)	965~1025 (4.90~5.21)
3	64 (0.32)	64 (0.32)	61~67 (0.31~0.34)	9	1468 (7.45)	1476 (7.50)	1423~1512 (7.23~7.68)
4	99 (0.50)	99 (0.50)	96~102 (0.49~0.52)	10	2481 (12.60)	2463 (12.51)	2406~2555 (12.22~12.98)
5	160 (0.81)	159 (0.81)	155~164 (0.79~0.84)	11	4501 (22.87)	4440 (22.55)	4366~4636 (22.18~23.55)
6	328 (1.67)	325 (1.65)	318~338 (1.62~1.72)	12	8000 (40.64)	7943 (40.35)	7760~8240 (39.42~41.86)

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)	139.8 (59.9)	139.5~140.5 (59.7~60.3)

PRESSURE VERIFICATION				SYSTEM V-106		Unit: inH <sub>2</sub> O (Pa)	
#	STANDARD	MEASURED	ALLOWABLE RANGE	#	STANDARD	MEASURED	ALLOWABLE RANGE
1	-4.073 (-1014.2)	-4.084 (-1016.9)	-4.119~-4.027 (-1025.6~-1002.8)	3	8.027 (1998.7)	8.074 (2010.4)	7.942~8.112 (1977.5~2020.0)
2	2.032 (506.0)	2.041 (508.2)	2.007~2.057 (499.7~512.3)	4	14.052 (3498.9)	14.114 (3514.6)	13.906~14.198 (3462.7~3535.2)

HUMIDITY AS FOUND				SYSTEM H-102		Unit: %RH	
#	STANDARD	MEASURED	ALLOWABLE RANGE	#	STANDARD	MEASURED	ALLOWABLE RANGE
1	10.0	11.8	7.0~13.0	4	70.0	69.1	67.0~73.0
2	30.0	30.6	27.0~33.0	5	90.0	89.4	87.0~93.0
3	50.0	49.9	47.0~53.0				

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
DC Voltage	E004477	12-15-11	12-15-12
Pressure	E001558	12-12-11	06-12-12
Velocity	E003327	09-19-07	09-19-12
Temperature	E001800	01-19-12	07-19-12
Humidity	E003539	02-28-12	08-28-12

Measurement Variable	System ID	Last Cal.	Cal. Due
Temperature	E001644	01-20-12	07-20-12
Pressure	E001560	12-12-11	06-12-12
Barometric Pressure	E001992	04-08-11	04-08-12
Temperature	E001799	01-19-12	07-19-12

**Non-Responsive**

March 27, 2012

DATE

Doc ID: CBB100444





# 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	8386A
TEMPERATURE	69.1 (20.6)	°F (°C)	SERIAL NUMBER	54110581
RELATIVE HUMIDITY	37	%RH		
BAROMETRIC PRESSURE	28.61 (968.8)	inHg (hPa)		

☒ AS LEFT  
☐ AS FOUND

☒ IN TOLERANCE  
☐ OUT OF TOLERANCE

## - CALIBRATION VERIFICATION RESULTS -

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)	139.8 (59.9)	139.5-140.5 (59.7-60.3)

PRESSURE VERIFICATION				SYSTEM V-106		Unit: inH <sub>2</sub> O (Pa)	
#	STANDARD	MEASURED	ALLOWABLE RANGE	#	STANDARD	MEASURED	ALLOWABLE RANGE
1	-4.073 (-1014.2)	-4.084 (-1016.9)	-4.119~-4.027 (-1025.6~-1002.8)	3	8.027 (1998.7)	8.074 (2010.4)	7.942~8.112 (1977.5-2020.0)
2	2.032 (506.0)	2.041 (508.2)	2.007-2.057 (499.7-512.3)	4	14.052 (3498.9)	14.114 (3514.4)	13.906~14.198 (3462.7-3535.2)

HUMIDITY VERIFICATION				SYSTEM H-102		Unit: %RH	
#	STANDARD	MEASURED	ALLOWABLE RANGE	#	STANDARD	MEASURED	ALLOWABLE RANGE
1	10.0	11.8	7.0-13.0	4	70.0	69.1	67.0-73.0
2	30.0	30.6	27.0-33.0	5	90.0	89.4	87.0-93.0
3	50.0	49.9	47.0-53.0				

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)	646 (3.28)	629-667 (3.19-3.39)
2	35 (0.18)	34 (0.17)	32-38 (0.16-0.19)	8	996 (5.06)	997 (5.06)	966-1025 (4.91-5.21)
3	64 (0.32)	64 (0.32)	61-67 (0.31-0.34)	9	1476 (7.50)	1476 (7.50)	1432-1521 (7.27-7.72)
4	99 (0.50)	99 (0.50)	96-102 (0.49-0.52)	10	2476 (12.58)	2472 (12.56)	2401-2550 (12.20-12.95)
5	160 (0.81)	159 (0.81)	155-165 (0.79-0.84)	11	4498 (22.85)	4548 (23.10)	4363-4633 (22.17-23.54)
6	346 (1.76)	346 (1.76)	335-356 (1.70-1.81)	12	7988 (40.58)	8013 (40.71)	7748-8227 (39.36-41.80)

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

Measurement Variable	System ID	Last Cal.	Cal. Due
Temperature	E001800	01-19-12	07-19-12
DC Voltage	E004477	12-15-11	12-15-12
Pressure	E001558	12-12-11	06-12-12
Velocity	E003327	09-19-07	09-19-12
Humidity	E003539	02-28-12	08-28-12
Temperature	E004402	12-08-11	06-08-12
Pressure	E001721	12-13-11	06-13-12
Velocity	E003327	09-19-07	09-19-12

Measurement Variable	System ID	Last Cal.	Cal. Due
Temperature	E001799	01-19-12	07-19-12
Temperature	E001644	01-20-12	07-20-12
Pressure	E001560	12-12-11	06-12-12
Barometric Pressure	E001992	04-08-11	04-08-12
DC Voltage	E001658	06-28-11	12-28-12
Pressure	E001719	12-13-11	06-13-12
Barometric Pressure	E001992	04-08-11	04-08-12

**Non-Responsive**

March 27, 2012

DATE

DOC: B3\_CERT\_DEFAULT



**Tektronix**

Service Solutions

**Certificate of Calibration**

6209119

Certificate Page 1 of 1

**Instrument Identification**

Company ID: 607229

INDUSTRIAL HYGIENE SW

**Non-Responsive**

10510 SUPERFORTRESS AVE SUITE

MATHER, CA 95655

PO Number

**Non-Responsive**

Instrument ID: H225438

Manufacturer: KONICA MINOLTA

Description: ILLUMINANCE METER

Model Number: TL-1

Serial Number: 00279029

**Certificate Information**

Reason For Service: CALIBRATION

Type of Cal: NORMAL

As Found Condition: IN TOLERANCE

As Left Condition: IN TOLERANCE

Procedure: MINOLTA T-1M ILLUMINANCE METER

Remarks:

Technician: **Non-Responsive**

Cal Date: 22May2012

Cal Due Date: 22May2013

Interval: 12 MONTHS

Temperature: 24.0 C

Humidity: 43.0 %

Tektronix Service Solutions certifies the performance of this instrument has been verified using equipment of known accuracy which are traceable to National Metrology Institutes (NIST, NPL, PTB) which are traceable to the International System of Units (SI), derived from ratio type measurements, compared to reference materials or recognized consensus standards. The policies and procedures used comply with ANSI/NCSL Z540.1-1994. The quality system is registered to ISO9001.

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

Approved By:  
Service Repre**Non-Responsive****Calibration Standards**

NIST Traceable#	Inst. ID#	Description	Manufacturer	Model	Cal Date	Date Due
1700230826	17-1001076	6 STEEL RULE	STARETT	C416R-72	10Jun2010	10Jun2012
1700278206	17-2007214	1000W LIGHT BULB	OPTRONIC LABS	OL FEL-P-K	17Feb2012	17Feb2017
1700201473	4083RC	MULTIMETER	FLUKE	8842A	25Jul2011	25Jul2012
1700201472	461952	CURRENT SHUNT	LEEDS & NORTHROP	4360	09Aug2011	09Aug2012

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



## DATASHEET

Manufacturer: Minolta

Workorder #: 602492

Model: TL-1

Procedure: Manufacture

Description: Illuminance Meter

Date: 22-May-12

ILLUMINANCE							
Range	Nominal Value	As Found	Result	As Left	Result	Min	Max
30fC (resolution: .1 fC)	10.00	10.1	P	10.1	P	9.7	10.3
300 fC (resolution: 1 fC)	100.0	100.1	P	100	P	97	103
3000 fC (resolution: 10 fC)	1000.0	1000.0	P	999	P	970	1030

Note: Measurement Uncertainty = +/- 2.4% of Indication.



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

## Certificate of Calibration

Date: Nov 20, 2012

Cert No. 2008120221675

**Customer:**

NETWORK ENVIRONMENTAL  
1141 SIBLEY STREET  
FOLSOM CA 95630

MPC Control #: CD3921  
Asset ID: 1245  
Gage Type: IAQ METER  
Manufacturer: TSI  
Model Number: 8551  
Size: N/A  
Temp/RH: 68.9°F / 35.6 %

Work Order #: SAC-7004499  
Purchase Order #: 013.IH1374.00  
Serial Number: 51380  
Department: N/A  
Performed By: **Non-Responsive**  
Received Condition: IN TOLERANCE  
Returned Condition: IN TOLERANCE  
Cal. Date: November 19, 2012  
Cal. Interval: 12 MONTHS  
Cal. Due Date: November 19, 2013

**Calibration Notes:**

**Standards Used to Calibrate Equipment**

I.D.	Description	Model	Serial	Manufacturer	Cal. Due Date	Traceability #
CC8185	MULTIFUNCTION PROCESS CALIBRATOR	726	1355148	FLUKE	Nov 5, 2013	2008120211043
J2270	LASER PARTICLE COUNTER	200L-1-115-1	90058761A	MET ONE	Apr 30, 2013	2008120175502

**Procedures Used In this Event**

Procedure Name	Description
PARTICLE COUNTER	PARTICLE COUNTERS
971 TEMP/HUMIDITY METER	TEMP/HUMIDITY METER (FLUKE) 971

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%. This 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 9001:2000, ANSI/NCSL 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.



**TABLE 1**  
**LEAD WIPE SAMPLE RESULTS**  
**DILLON ARMORY**  
**SEPTEMBER 25, 2012**

Sample Number	Sample Area	Sample Location	Results ( $\mu\text{g}/\text{ft}^2$ )	ARNG Standard
92512-Dillon-01	Drill Floor	Northwest corner of drill floor, floor area sample	7.7	$\leq 40 \mu\text{g}/\text{ft}^2$
92512-Dillon-02	Drill Floor	Southwest corner of drill floor, floor area sample	3.9	$\leq 40 \mu\text{g}/\text{ft}^2$
92512-Dillon-03	Drill Floor	Center, middle of drill floor, floor area sample	4.5	$\leq 40 \mu\text{g}/\text{ft}^2$
92512-Dillon-04	Drill Floor	Northeast corner of drill floor, floor area sample	3.2	$\leq 40 \mu\text{g}/\text{ft}^2$
92512-Dillon-05	Drill Floor	Southeast corner of drill floor, floor area sample	5.4	$\leq 40 \mu\text{g}/\text{ft}^2$
92512-Dillon-06	Kitchen	Kitchen floor sample	5.4	$\leq 40 \mu\text{g}/\text{ft}^2$
92512-Dillon-07	Break Room	Break Room floor sample	<2.5	$\leq 200 \mu\text{g}/\text{ft}^2$

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

ARNG = Army National Guard

ND = none detected at or above the analytical detection limit



1778573

☐ RUSH Status Requested - ADDITIONAL CHARGE  
RESULTS REQUIRED BY \_\_\_\_\_

DATE \_\_\_\_\_  
CONTACT ALS SALT LAKE PRIOR TO SENDING SAMPLES

Address 1141 Silver Street

Billing Address

Chain of Custody No.

6. How did you first learn about ALS?

[illegible]

### Comments

## 7. Chain

Receiver

Date/Time 10/11/12 0915

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

ALS Environmental

Non-Responsive



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## ANALYTICAL REPORT

Report Date: October 15, 2012**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: **34-1228523**

Client Project ID: 013.IH1374.72/Dillon, MT

Purchase Order: 013.IH1374.72

Project Manager: **Non-Responsive**

## Analytical Results

Analytical Results			
Sample ID: 92512-Dillon-01		Media: Ghost Wipe	Collected: 09/25/2012
Lab ID: 1228523001		Sampling Location: Dillon, MT	Received: 10/11/2012
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 1 ft²	Prepared: 10/11/2012
			Analyzed: 10/12/2012
Analyte	ug/sample	ug/ft²	RL (ug/sample)
Lead	7.7	7.7	2.5

Sample ID: 92512-Dillon-02		Media: Ghost Wipe		Collected: 09/25/2012
Lab ID: 1228523002		Sampling Location: Dillon, MT		Received: 10/11/2012
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 1 ft²		Prepared: 10/11/2012
				Analyzed: 10/12/2012
Analyte	ug/sample	ug/ft²	RL (ug/sample)	
Lead	3.9	3.9	2.5	

Sample ID: 92512-Dillon-03		Media: Ghost Wipe		Collected: 09/25/2012	
Lab ID: 1228523003		Sampling Location: Dillon, MT		Received: 10/11/2012	
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 1 ft²		Prepared: 10/11/2012	
				Analyzed: 10/12/2012	
Analyte	ug/sample	ug/ft²	RL (ug/sample)		
Lead	4.5	4.5	2.5		

Sample ID: 92512-Dillon-04		Media: Ghost Wipe		Collected: 09/25/2012
Lab ID: 1228523004		Sampling Location: Dillon, MT		Received: 10/11/2012
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 1 ft²		Prepared: 10/11/2012
				Analyzed: 10/12/2012
Analyte	ug/sample	ug/ft²	RL (ug/sample)	
Lead	3.2	3.2	2.5	

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

Workorder: **34-1228523**  
Client Project ID: 013.IH1374.72/Dillon, MT  
Purchase Order: 013.IH1374.72  
Project Manager: **Non-Responsive**

## Analytical Results

Sample ID: 92512-Dillon-05		Media: Ghost Wipe	Collected: 09/25/2012
Lab ID: 1228523005		Sampling Location: Dillon, MT	Received: 10/11/2012
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 1 ft²	Prepared: 10/11/2012
			Analyzed: 10/12/2012
Analyte	ug/sample	ug/ft²	RL (ug/sample)
Lead	5.4	5.4	2.5

Sample ID: <u>92512-Dillon-06</u>		Media: Ghost Wipe	Collected: 09/25/2012
Lab ID: 1228523006		Sampling Location: Dillon, MT	Received: 10/11/2012
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 1 ft²	Prepared: 10/11/2012
			Analyzed: 10/12/2012
Analyte	ug/sample	ug/ft²	RL (ug/sample)
Lead	5.4	5.4	2.5

Sample ID: 92512-Dillon-07		Media: Ghost Wipe	Collected: 09/25/2012
Lab ID: 1228523007		Sampling Location: Dillon, MT	Received: 10/11/2012
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 1 ft²	Prepared: 10/11/2012
			Analyzed: 10/12/2012
Analyte	ug/sample	ug/ft²	RL (ug/sample)
Lead	<2.5	<2.5	2.5

## Report Authorization

Method	Analyst	Peer Review
NIOSH 7300 Mod.	<b>Non-Responsive</b>	<b>Non-Responsive</b>

## Laboratory Contact Information

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

Phone: (801) 266-7700  
Email: [alsitlab@ALSGlobal.com](mailto:alsitlab@ALSGlobal.com)  
Web: [www.alsl.com](http://www.alsl.com)



## ANALYTICAL REPORT

Workorder: 34-1228523

Client Project ID: 013.IH1374.72/Dillon, MT

Purchase Order: 013.IH1374.72

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	<a href="http://www.aiclasscorp.com">http://www.aiclasscorp.com</a>
	Utah (NELAC)	DATA1	<a href="http://health.utah.gov/lab/labimp/">http://health.utah.gov/lab/labimp/</a>
	Nevada	UT00009	<a href="http://indep.nv.gov/bsdwlabservice.htm">http://indep.nv.gov/bsdwlabservice.htm</a>
	Oklahoma	UT00009	<a href="http://www.deq.state.ok.us/CSDnew/">http://www.deq.state.ok.us/CSDnew/</a>
	Iowa	IA# 376	<a href="http://www.iowadnr.gov/insideDNR/RegulatoryWater.aspx">http://www.iowadnr.gov/insideDNR/RegulatoryWater.aspx</a>
	Florida (TNI)	E671067	<a href="http://www.dep.state.fl.us/labs/bars/sas/qa/">http://www.dep.state.fl.us/labs/bars/sas/qa/</a>
	Texas (TNI)	T104704456-11-1	<a href="http://www.tceq.texas.gov/field/qa/lab_accred_certif.html">http://www.tceq.texas.gov/field/qa/lab_accred_certif.html</a>
Industrial Hygiene	AIHA (ISO 17025 & AIHA IHLAP/ELLAP)	101574	<a href="http://www.aihaaccreditedlabs.org">http://www.aihaaccreditedlabs.org</a>
Lead Testing:			
CPSC	ACCLASS (ISO 17025, CPSC)	ADE-1420	<a href="http://www.aiclasscorp.com">http://www.aiclasscorp.com</a>
Soil, Dust, Paint, Air	AIHA (ISO 17025, AIHA ELLAP and NLLAP)	101574	<a href="http://www.aihaaccreditedlabs.org">http://www.aihaaccreditedlabs.org</a>
Dietary Supplements	ACCLASS (ISO 17025)	ADE-1420	<a href="http://www.aiclasscorp.com">http://www.aiclasscorp.com</a>

## 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.

Posted to NGB FOIA Reading Room  
May, 2018





Industrial Hygiene, Southwest  
Hazard Inventory Log  
Dillon Army, MT 59725

CONTROL		HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/NCIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
NUMBER	CLOSED <input checked="" type="checkbox"/>									
MTDA-092512-4.4		No Asbestos Management Plan at facility.	Army	3	Acquire the most recent Asbestos Management Plan for the Army and make it accessible to all personnel who work there.					Best Management Practices
MTDA-092512-4.5		Insufficient illumination on the Drill Floor.	Army Drill Floor	4	Add Additional task lighting or brighter light bulbs to the existing light fixtures to increase the illumination level on all areas of the Drill Floor to at least 30 FC.					ANSI RPT-1891
MTDA-092512-4.9		Vehicle exhaust system	Maintenance Bay	4	Evaluate maintenance or repair needs to drops, or redesign system to meet minimum standards of 300 CFM/diesel engines and 1400 CFM/turbo charged engines.					ACGIH Ventilation Manual figure VS-85-03 & General Duty Clause 5(a)(1) & Prudent Industrial Hygiene Practice
MTDA-092512-4.10		Fire extinguishers located in the building were not up to date on annual inspections.	Army	4	Have all out of date fire extinguishers inspected and maintain current annual inspection tags.					29 CFR 1910.157(e)(3)

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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 Dillon Armory. The paragraphs are numbered to correspond to the sections where first noted. (i.e., N.4.2 describes the following: the N is Conclusions & Recommendations and the 4.2 corresponds back to Section 4 – Findings and Recommendations; Item 2 – Painted Surface Evaluation).

**N4.5 Illumination Level Monitoring** - Inadequate illumination levels should be increased by replacing burned out bulbs, increasing the wattage of light fixtures, painting wall a lighter, more reflective color, or adding task lighting.

**N4.9 Ventilation Survey** – Vehicle ventilation exhaust drops should be evaluated for maintenance/repair needs or possible redesign of system to meet minimum airflow standards.

**N4.11 Safety Walk-Through** - Fire extinguishers located in the building were not up to date on annual inspections. Have all out of date fire extinguishers inspected and maintain current annual inspection tags.

**N4.11 Safety Walk-Through** - Insufficient illumination levels were found on the Drill Floor. Add additional task lighting, brighter light bulbs, or increase wattage of existing light fixtures to increase the illumination level on all areas of the Drill Floor to at least 30 FC.

## ***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.



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

Five <b>lead wipe</b> samples collected from drill floor (take samples from dusty horizontal floor surfaces)	Samples 01 through 05 were collected from the drill floor.
Are any <b>weapons cleaned</b> in the facility, if yes where are they cleaned?	Weapons are cleaned at the facility on the drill floor.
Additional lead <b>wipe</b> samples taken from 25% of the rest of the building - <b>-(on floor areas only)</b>	Sample 06 was collected from the kitchen. Sample 07 was collected from the Break Room.
Is there a <b>converted indoor firing range</b> ? If so collect additional wipe samples IAW the SOW.	No.
Is there any peeling <b>paint</b> ? Take bulk sample if able.	No.
Are there any signs of water damage or <b>mold</b> ?	No.
Any suspected <b>ACM</b> ? Where and what condition is it in. Bulk sample if able.	No suspected ACM. Building was constructed in 2006.
Quality of housekeeping	Great housekeeping practices.
<b>HVAC</b> maintenance plan in place?	Yes through state.
<b>Overall condition</b> of HVAC system	New, working condition.
Obtained <b>CO2, Temp, RH</b> monitoring	Attached to report.
<b>HAZMAT inventory</b> on hand (make copies for the report), <b>MSDS</b> available for all materials.	Yes, attached to report.
<b>HAZMAT storage</b> , Condition of lockers, if outside storage building is used is it ventilated and does it meet OSHA standards.	No deficiencies or incompatibilities observed during the visit.

<b>Fire alarm</b> in working condition - -not usually in place in older armories	Yes.
<b>Fire extinguishers</b> in place and properly identified and mounted	Yes.
Evidence of <b>monthly fire extinguisher inspections</b>	Yes, evident that monthly inspections are being documented.
<b>Annual fire extinguisher inspections</b> tags current	NOT CURRENT as of August 2012.
Are <b>eye wash stations</b> available in areas where hazardous materials are used and are they inspected weekly (inspections must be documented)	Yes, in the maintenance bay.
<b>Egress</b> routes accessible and properly marked - -noted on <u>Fire Evacuation Plan</u>	Yes, posted throughout the facility.
<b>Training programs</b> in place; Hazcom, Respiratory Protection, Confined Spaces, Hearing conservation, PPE (if applicable)	Hazom, Waste Management Plan, Hearing Conservation. PPE: cotton coveralls, plugs, eye, gloves, hard hats.
Any Photo labs	N/A.
Any hazardous <b>noise</b> sources	N/A.
<b>Light levels</b> checked throughout building	Yes, attached to the report.
<b>Breaker panels</b> properly labeled with no exposed wiring	Breaker panels proper labeled with no exposed wires.
<b>Check building occupancy</b>  1. How many military personnel, how many civilian personnel 2. What types of units occupy facility, i.e. Administrative, Maintenance, etc.?	1. 3 military personnel, 0 civilian. 2. Supply, Administrative, recruiter.
Any <b>civilian activities</b> in armory (cub scouts, classes, day care, parties etc)	Youth Challenge occupies part of the facility approximately 2 times a month.
Obtain two <b>lead air samples</b>	On IHSW Request Only

Evaluate Kitchen Stove Hood Flow if Present IAW NFPA Standard 96.	Complaint kitchen hood. Results attached to report.
Collect Source Noise Measurements of Kitchen Appliances and Document Using DD 2214	No hazardous noise areas identified during the IHSAY.
Conduct a safety walkthrough of entire facility document any safety deficiencies found.	
<b>Take photos</b> of outside of <b>building</b> , all <b>sample points</b> and any <b>pertinent hazards</b> or concerns.	
Name of Armory, POC, phone #, address and organizations in Armory  (Add Checklist to Report)	Dillon Armory POC: <b>Non-Responsive</b> 1070 Highway 41 North Dillon, MT 59725  (Add Checklist to Report)



FY 11 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			
Total number of DOEHRs-IH shops coded as Priority 1					953-02-10	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			
Number of buildings requiring a basic industrial hygiene characterization within the last 12 months					953-02-11	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			
Number of buildings requiring an industrial hygiene exposure assessment within the last 12 months					953-02-12	IHT			
Number of processes that were assessed for potential inhalation exposure to employees during this IH Visit					953-02-13	IHT			
Number of processes that require an assessment for potential inhalation exposure to employees during this IH Visit					953-02-13	IHT			
Number of processes that were assessed for potential inhalation exposure to employees within the last 12 months.					953-02-14	IHT			
Number of processes that require an assessment for potential inhalation exposure to employees within the last 12 months.					953-02-14	IHT			
Number of personnel who were reassessed by industrial hygiene within the last 12 months.					953-02-15	IHT			

FY 11 Installation Status Report (ISR) Services Documentation	Intellicode	Q1	Q2	Q3	Q4 Annual
Number of personnel who required reassessment by industrial hygiene within the last 12 months.	953-02-15	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			
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			
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			
Number of personnel who require work shift dosimetry to quantify their daily noise exposures within the last 12 months.	953-02-17	IHT			
Number of ventilation systems (e.g., spray paint booths, tailpipe exhausts, etc.) which were inspected and measured for airflow rates	953-02-18				3
Number of ventilation systems (e.g., spray paint booths, tailpipe exhausts, etc.) which require inspection and measurement of airflow rates	953-02-18				3
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				3
Number of design review packages evaluated and addressed by an IH with recommendations applicable to occupational health concerns	953-02-20	IHT			0
Number of design review packages which required IH evaluation and recommendations applicable to occupational health concerns	953-02-20	IHT			0



## 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

## Fort Harrison

95<sup>th</sup> Troop Command  
41<sup>st</sup> Division Road, Bldg. 517  
Helena, MT 59636

17 July 14

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



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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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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

26 AUG 2014

MEMORANDUM THRU **Non-Responsive** DSS, 1956 Mt. Majo St., Room 1009, Helena, MT 59636

FOR Commander, Fort Harrison 95<sup>th</sup> Troop Command, 41<sup>st</sup> Division Road, Bldg. 517, Helena, MT 59636

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for Fort Harrison 95<sup>th</sup> Troop Command, 41<sup>st</sup> Division Road, Bldg. 517, Helena, MT on 17 JUL 2014.

1. References. See survey report.

2. General.

a. At the request of the NGB Industrial Hygiene, Southwest (IHSW) Region, an Industrial Hygiene Site Assistance Visit and cursory review of safety related items and programs was conducted at the Fort Harrison 95<sup>th</sup> Troop Command, 41<sup>st</sup> Division Road, Bldg. 517, Helena, MT on 17 JUL 2014.

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

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

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

3. Findings. See survey report.

4. Commendable.

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

5. Observations / Recommendations.

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

a. Increase illumination to provide the necessary 50 foot candles for the janitors closet #2 and office # 8. (para. 4.8) (RAC 4)

ARNG-CSG-P

**SUBJECT:** Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for Fort Harrison 95<sup>th</sup> Troop Command, 41<sup>st</sup> Division Road, Bldg. 517, Helena, MT on 17 JUL 2014

b. Conduct a facility survey to identify Asbestos Containing Material (ACM) within the facility and develop ACM Management Plan. Conduct awareness training to all personnel who occupy the facility regarding the findings and the ACM Management Plan. The survey may have been completed, however, at the time of this assistance visit awareness training, ACM identification, or an ACM Management Plan was not available. (para. 5.3) (RAC 3)

c. Relocate materials to allow unobstructed access to electrical panels & to ensure for safe operations. (para. 7.4.2) (RAC 4)

d. Visually inspect fire extinguishers monthly and undergo annual maintenance checks; maintain documentation on the extinguishers tag. (para. 7.4.1) (RAC3)

e. Develop and implement a written Hazard Communication Program (HAZCOM). (para. 6.1) (RAC 4)

f. Ensure that all appropriate personnel receive HAZCOM training and maintain documentation indicating this training has been conducted. (para. 6.2) (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).



**SUBJECT:** Executive Summary for Industrial Hygiene Site Assistance Visit (IHS AV) for Fort Harrison 95<sup>th</sup> Troop Command, 41<sup>st</sup> Division Road, Bldg. 517, Helena, MT on 17 JUL 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 IHS AV.
- e. An Integral and Important factor of the Hazard Assessment/JSA process is for the review and guidance from qualified Safety, Occupational Health and Industrial Hygiene professions located at the higher headquarters level or state level. For this reason, the Hazard Assessments (to include all pertinent and supporting documents) should be completed by the facility personnel and forward to the Montana Army National Guard Industrial Hygiene, Occupational Health and Safety Office for final review and approval (signature).
- f. Job Safety Analysis (JSA's)/Hazard Assessments.

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

8. IHSW recommends the Senior Unit Commander of this Facility and any Co-Tenant Organizations or Units, review and provide assistance with implementation of these recommendations. This will educate the chain of command and allow the unit or co-tenant organizations to take any necessary precautions or actions required by them and their personnel.
9. To assist you with execution of your responsibilities in correcting the observations noted, we encourage you to consult with the State Safety Manager, Occupational Health Manager and Industrial Hygiene professions located and/or authorized within the State Safety and Occupational Health Office.
10. For additional information please contact the NGB-IHSW office at (916) 854-1491 or via email at

**Non-Responsive**

**Non-Responsive**

NGB, IHSW, CIV  
Regional Industrial  
Hygiene Manager



**Industrial Hygiene Southwest**  
**Violation Inventory Log**

**LOG OF SCHEDULE OF CORRECTIVE ACTION - COMPLIANCE WITH SAFETY AND HEALTH STANDARDS**  
**Troop Command, Building 517, Fort Harrison located in Helena, Montana**

CONTROL NUMBER	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/NCOIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
MTBldg517- 071714-4.8 <input type="checkbox"/> CLOSED	Illumination was insufficient for activities performed	Office #8 & JC-2	4	Increase illumination to provide the necessary 50 foot candles in Office #8 and repair electrical light fixture in Janitor Closet #2 (JC-2).					ANSI RP7-1991 Standard & MIL-STD-1472E
MTBldg517- 071714-5.3	Suspected Asbestos Containing Building Materials: inspection, re-inspection, and Asbestos Hazard Management Plan	Facility	3	Conduct a facility survey to identify & assess extent of asbestos hazards, prior to any renovation activities; & implement an Asbestos Hazard Management Plan					AR 420-1, 5-24b, c, & d
MTBldg517- 071714-6.1	Written Hazard Communication (HAZCOM) Program was not available	Facility	4	Develop and implement a written HAZCOM Program					29 CFR 1910.1200 (e)(1) & AR 385-10.16-2d(2)
MTBldg517- 071714-6.2	Hazard Communication (HAZCOM) Program training was not provided	Facility	4	Ensure all appropriate personnel receive HAZCOM training and maintain documentation indicating this training has been conducted					29 CFR 1910.1200 (h)
MTBldg517- 071714-7.4.1 <input type="checkbox"/>	Portable fire extinguisher(s) were missing inspection / annual maintenance check records	Facility	3	Visually inspect fire extinguishers monthly & undergo annual maintenance checks; maintain documentation of these on the inspection tag					29 CFR 1910.157(e)
MTBldg517- 071714-7.4.2	Electrical panels were obstructed	Facility	4	Relocate materials to allow unobstructed access to electrical panels & to ensure their safe operation					29 CFR 1910.303 (g)(1)



# Industrial Hygiene Southwest

## Violation Inventory Log

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

*Troop Command, Building 517, Fort Harrison located in Helena, Montana*

CONTROL NUMBER CLOSED <input type="checkbox"/>	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/NCOIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
MTBldg517- 071714-7.4.2a	SIGNIFICANT HAZARD: Exposed conductor in electrical panels	Supply Rm #4; East Wall & Panel adjacent to vault	4	Unused openings in cabinets should be covered to provide protection					29 CFR 1910.303(b)(7)(i)



## *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.**

**Industrial Hygiene Site Assistance Visit  
Building 517, Fort Harrison  
Helena, Montana  
July 17, 2014**





INDUSTRIAL HYGIENE SITE ASSISTANCE VISIT (IHSAV)

95<sup>TH</sup> TROOP COMMAND - BUILDING 517  
FORT HARRISON  
HELENA, MONTANA 59636

July 17, 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.IH1716.24

*Prepared by:*

Non-Responsive

*Reviewed by:*

Non-Responsive

*Senior Industrial Hygienist*

Non-Responsive





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## EXECUTIVE SUMMARY

On July 17, 2014, **Non-Responsive** Certified Industrial Hygienist (CIH) and **Non-Responsive** Industrial Hygiene Technician with Network Environmental Systems, Inc. (NES), conducted an Industrial Hygiene Site Assistance Visit (IHSAB) at the Troop Command – Building 517 at Fort Harrison in Helena, Montana. The primary point of contact (POC) was **Non-Responsive** who may be reached by email at **Non-Responsive**. **Non-Responsive** was off-site during the IHSAB. The secondary POC, who assisted with information gathered during this survey, was **Non-Responsive**. He may be reached by phone at (406) 324-3640 or via email at **Non-Responsive**.

The objectives of this IHSAB were to:

- Evaluate work processes conducted within the facility;
- Review hazardous material storage and use procedures;
- Collect area and breathing zone air samples;
- Collect metal surface wipe samples;
- Measure the volumetric flow of exhaust ventilation systems;
- Assess potentially noise hazardous areas;
- Measure illumination levels;
- Collect indoor air quality data;
- Evaluate existing safety hazards;
- Inspect and evaluate the indoor firing range, active or converted (if present);
- Inspect and evaluate the paint booth operation and systems (if present);
- Evaluate the facility for potential asbestos, lead, and mold hazards;
- Review safety policies/programs, training, and record keeping; and
- Conduct Hazard Assessments (HA's).

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** was very helpful during the IHSAB and assisted with providing access to various areas of the facility and answering operations questions to the best of his ability, as the stand-in POC.



## 1.0 INTRODUCTION

On July 17, 2014, [Non-Responsive] CIH and [Non-Responsive] Industrial Hygiene Technician with NES, conducted an IHSAV at the Troop Command – Building 517 at Fort Harrison in Helena, Montana. The primary POC was [Non-Responsive] who may be reached by email at [Non-Responsive] was off-site during the IHSAV.

The secondary POC, who assisted with information gathered during this survey, was [Non-Responsive] [Non-Responsive]. He may be reached by phone at (406) 324-3640 or via email at [Non-Responsive]

**Non-Responsive**

## 1.1 Objectives

The primary objective of the IHSAV was to evaluate the occupational environment of the areas within the Troop Command Building 517 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 IHSAV 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:

- Evaluate work processes conducted within the facility;
- Review hazardous material storage and use procedures;
- Collect area and breathing zone air samples;
- Collect metal surface wipe samples;
- Measure the volumetric flow of exhaust ventilation systems;
- Assess potentially noise hazardous areas;
- Measure illumination levels;
- Collect indoor air quality data;
- Evaluate existing safety hazards;
- Inspect and evaluate the indoor firing range, active or converted (if present);
- Inspect and evaluate the paint booth operation and systems (if present);
- Evaluate the facility for potential asbestos, lead, and mold hazards;
- Review safety policies/programs, training, and record keeping; and
- Conduct Hazard Assessments (HA's).

## 2.0 PROCESS DESCRIPTION

The Troop Command operates in Building 517, which consisted of the following: administrative offices, conference rooms, library, telecommunications/mechanical room, supply rooms, storage rooms, Central Issue Facility (CIF), restrooms, locker rooms, break room, allied trades room, and a janitorial closet. General administrative duties for non-deployable units for the Montana Army National Guard were conducted in the offices. As part of this IHS AV, *NES* also observed and measured some conditions at Building 1002, which was an adjacent cold storage building.

The facility was located along 41<sup>st</sup> Division Road and Aviation Drive in Fort Harrison. Vehicle parking bordered the facility to the west, and grassy fields to the east, north and south.

The date the facility was constructed and total size of the facility was unknown at the time of the IHS AV. The facility operates Monday through Friday from 0700 to 1700. Multiple units were assigned to the facility whose primary work activities included administrative support for the Montana Army National Guard. Units who occupy Building 517 include: 1) 95<sup>th</sup> Troop Command, 2) 190<sup>th</sup> CRD, and 3) Central Issue Facility (CIF) who occupy and use two supply rooms in the facility. There were a total of 25 full time guard members assigned to the facility. A copy of the employee list was not available at the time of the IHS AV.

There were no records available at the site indicating that a previous IHS AV had been conducted. Thus, this IHS AV should serve as the baseline IH survey for the facility.

During the Opening Conference meeting, *NES* was informed of the following:

- There was no active or converted indoor firing range (IFR) at the facility.
- The facility was not used for public functions.
- Weapon cleaning was performed 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 Personal Breathing Zone Air Sampling

NES did not conduct personal breathing zone air sampling during this IHSAB as no work processes were performed where NES could conduct such sampling.

#### 3.2 Indoor Air Quality

Carbon dioxide (CO<sub>2</sub>) 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 CO<sub>2</sub>, water vapor, and other bio effluents during respiration. The American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE), in their Standard 62.1-2013, *Ventilation for Acceptable Air Quality*, recommend maintaining CO<sub>2</sub> below a concentration that is 700 parts per million (ppm) above outdoor levels. Outside CO<sub>2</sub> concentrations are typically about 350 ppm. Providing sufficient ventilation to maintain steady-state CO<sub>2</sub> 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. According to ASHRAE, in their standard 55-2010, *Thermal Environmental Conditions for Human Occupancy*, indoor temperatures are recommended to range 68-74° Fahrenheit (F) during the winter and 73-79 °F in the summer. Relative humidity indicates the amount of moisture in the air. ASHRAE in their Standard 62.1-2013, recommends maintaining humidity levels below 65%.

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

#### 3.3 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 facility using a TSI Q-Trak, model 8551. A copy of the annual calibration certificate for this instrument is located in Appendix H.

### **3.4 Metal Wipe Sampling**

Lead dust may be introduced into a facility from work processes, facility finishes, consumer products, or other sources. Lead wipe samples were collected from horizontal work and floor surfaces in various locations throughout the facility to evaluate the potential presence of lead-contaminated dust. Ghost Wipe™ brand wipes were used by wiping a one (1) square foot (ft<sup>2</sup>) area. 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.

### **3.5 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.

Painted surfaces throughout the facility were in good and intact condition. Peeling paint was not identified at the facility. Therefore, a bulk paint sample was not collected.

### **3.6 Exhaust Ventilation Survey**

Exhaust ventilation systems were not assessed during this IHS AV as there were no systems present within the facility.

### 3.7 Personal Noise Dosimetry and Sound-Level Measurements

Personal noise dosimetry and sound-measurements were not collected during this IHS AV as no hazardous noise sources were identified.

### 3.8 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.

### 3.9 Equipment Used

The following equipment was used for this survey:

Equipment Type	Model Number	Serial Number	Calibration Date
TSI Q-Trak IAQ Meter	8551	51380	October 2013
Konica Minolta Light Meter	TL-1	00279019	June 2014

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

### 3.10 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 Personal Breathing Zone Air Sampling**

NES did not conduct personal breathing zone air sampling during this IHSAB as no work processes were performed where NES could conduct such sampling.

### **4.2 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 the 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 CO<sub>2</sub> concentration was measured to be 603 ppm; therefore, the maximum indoor CO<sub>2</sub> concentration recommended by ASHRAE was 1303 ppm. The CO<sub>2</sub> concentrations from inside Building 517 ranged from 486 to 977 ppm. The areas measured were within the ASHRAE recommended range.

ASHRAE recommends maintaining temperatures between 72.5-80 °F in the summer and relative humidity between 30% and 60% to minimize the growth of allergenic or pathogenic organisms. Temperatures inside Building 517 ranged between 70.4 and 74.8 °F. Some of the rooms measured were below the ASHRAE recommended range for temperature. Relative humidity in Building 517 ranged from 39.0% to 49.3%. The locations measured were within the ASHRAE recommended range for relative humidity, below 65%.

IAQ measurements collected from Building 1002 revealed temperatures above 90 °F. However, the building is used for cold storage and not occupied for extended periods of time. Measurements for CO<sub>2</sub> and humidity were within ASHRAE recommended ranges.

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

### **4.3 Air Monitoring – Carbon Monoxide**

Carbon monoxide concentrations were measured at a total of 32 locations throughout Buildings 517 and 1002 using a TSI Q-Trak IAQ Meter, model 8551. The concentration of CO inside the facility ranged from 1 to 2 ppm. These concentrations were also below the exposure limit ceiling of 200 ppm set forth by OSHA. A summary of CO measurements collected is provided in Appendix E.



#### 4.4 Metal Wipe Sampling

Wipe samples for lead dust were collected from horizontal surfaces in selected areas of the facility to determine if housekeeping efforts have been successful. 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. This criterion is applied to any areas of a facility that may be used by the public for nonmilitary functions. These areas include: converted indoor firing ranges; drill halls; locker rooms; and fitness areas. Areas of a facility which are not expected to be used by the public are expected to be, "maintained as free as practicable of accumulations of lead," as specified by the Occupational Safety & Health Administration (OSHA) in 29 CFR 1910.1025 (h)(1). The Army National Guard has determined lead concentrations less than 200  $\mu\text{g}/\text{ft}^2$  is practicable for maintenance type facilities. This criterion is applied to areas such as maintenance bays and tool rooms, which are not routinely accessible to the general public.

A total of six (6) lead wipe samples were collected during the IHSAB to be analyzed in accordance with NIOSH Method 7300, modified for Ghost Wipes™. Samples were collected from the following locations: break room; Central Issue Facility (CIF) supply room #1 and #2, and office #10. Photographs were taken of each sample 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 Area	Sample Location	Results ( $\mu\text{g}/\text{ft}^2$ )	ARNG/HUD Standard
071714-BLDG517-01	Break Room	Floor	2.6	$\leq 40 \mu\text{g}/\text{ft}^2$
071714-BLDG517-02	CIF Supply #1	Floor – West Side	88	$< 200 \mu\text{g}/\text{ft}^2$
071714-BLDG517-03	CIF Supply #1	Floor – East Side	50	$< 200 \mu\text{g}/\text{ft}^2$
071714-BLDG517-04	CIF Supply #2	Floor – East Side	54	$< 200 \mu\text{g}/\text{ft}^2$
071714-BLDG517-05	CIF Supply #2	Floor – West Side	46	$< 200 \mu\text{g}/\text{ft}^2$
071714-BLDG517-06	Office #10	Desktop	32	$\leq 40 \mu\text{g}/\text{ft}^2$

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

The analytical results indicate acceptable lead concentrations in the areas sampled.

#### **4.5 Painted Surface Evaluation**

Peeling paint was not identified in Buildings 517 or 1002. Therefore no bulk paint samples were collected.

#### **4.6 Exhaust Ventilation Survey**

Exhaust ventilation systems were not assessed during this IHS AV as there were no systems present within the facility.

#### **4.7 Personal Noise Dosimetry and Sound Level Measurements**

Personal noise dosimetry and sound level measurements were performed during this IHS AV as no hazardous noise sources were identified.

#### **4.8 Illumination Level Monitoring**

Illumination levels were measured throughout the facility. 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 29 locations in Building 517 and two (2) locations in Building 1002. Based on the above criteria, lighting was sufficient in the measured locations except for Office #8 and in a janitor's closet. Office #8 measured 48.1 FC which is below the 50 FC minimum lighting requirement. No illumination was measured in janitor's closet #2 as the light fixture/bulb was non-operational. See Appendix E for a table 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 facility was conducted. This evaluation consisted of determining if a maintenance plan was in place and a visual inspection of the system. **Non-Responsive** indicated that a maintenance plan was in place and is maintained by the Field Management Office (FMO). The HVAC systems are maintained by State Facility Maintenance personnel. The administrative areas in both buildings were serviced by ducted supply and return vents. The facility HVAC systems were in good visible condition. No exposed hazards or defects were observed during the IHS AV.

### 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 or water damage during the IHS AV.

### 5.3 Asbestos Evaluation

A cursory evaluation of the facility's interior and exterior 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; however, there was no asbestos survey report and/or Asbestos Hazard Management Plan available on-site. Suspect building materials identified included: base cove mastic, drywall and associated joint compound, and 12 inch x 12 inch vinyl floor tile and associated mastic. Each of the suspect building materials observed were found to be in good condition.

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 either by use or planned renovation activities, 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 TRAINING DOCUMENTS AND HAZARD ASSESSMENTS**

### **6.1 Written Programs & SOPs**

There were no written programs and procedures maintained at the facility.

### **6.2 Training Documentation**

No training documentation was found at the site.

### **6.3 Hazard Assessments**

Hazard assessments were not performed during this IHSAV as the primary work activity conducted at the facility was determined to be administrative support in an office setting. No other work processes were identified to be conducted by staff on a regular basis that would be expected to result in an increased potential for exposure to biological, chemical, and/or physical hazards.

## **7.0 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.

### **7.1 Hazardous Materials Inventory, Storage & Material Safety Data Sheets**

The facility did have a written chemical inventory and material safety data sheet (MSDS) file at the time of the IHSAV. However, a copy of the inventory was not obtained as part of the IHSAV. The alternate POC had limited information pertaining to the Hazardous Communication (HAZCOM) Program. Chemical storage onsite was limited to materials kept in the janitor's closet and consisted of cleaning products in small quantities. The storage area was well-organized.

### **7.2 General Supply Areas**

General supply areas throughout the facility were well organized and in good visible condition.

### **7.3 Contract (Non-DoD) Operations**

Contract (non-DoD) operations were performed at this facility and include refuse and pest control operations, both of which are conducted by Post – Fort Harrison.

### **7.4 Safety Walk-Through**

NES conducted a walk-through of the facility 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. Some fire extinguishers were past due for monthly inspections.
2. Two (2) Significant electrical panel hazards were identified:
  - a. CIF Supply Room #4: electrical panel adjacent to vault was unlabeled and had missing switch-plate covers, allowing access to the live electrical components. (See Photo 11 & 12 in Appendix C – Photo Log).
  - b. Supply Room #4 “East Panel”: switch-plate cover was missing allowing access to live electrical components. (See Photo 13 & 14 in Appendix C – Photo Log).

## 8.0 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.



**9.0 PROJECT APPROVAL**

This IHSAV was reviewed and approved by:

**Non-Responsive**

*Senior Industrial Hygienist*

August 22, 2014

Date

**Non-Responsive**

*Principle-In-Charge*

August 22, 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**



## 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  
BUILDING 517, FORT HARRISON  
HELENA, MT  
JULY 17, 2014**



**Photo 1:** Front view of building 517, Fort Harrison.



**Photo 2:** Lead wipe 071714-BLDG517-01 collected from floor in Kitchen.



**Photo 3:** Lead wipe 071714-BLDG517-02 collected from floor in the Central Issue Facility (CIF) Supply Room; northwest area of room. (Supply Room #1 on facility floor plan located in Appendix D).



**Photo 4:** Lead wipe 071714-BLDG517-03 collected from floor in the Central Issue Facility (CIF) Supply Room; southeast area of room. (Supply Room #1 on facility floor plan located in Appendix D).



**PHOTO LOG**  
**BUILDING 517, FORT HARRISON**  
**HELENA, MT**  
**JULY 17, 2014**



**Photo 5:** Lead wipe 071714-BLDG517-04 collected from floor in the Central Issue Facility (CIF) Supply Room; southwest corner. (Supply Room #2 on facility floor plan located in Appendix D).



**Photo 6:** Lead wipe 071714-BLDG517-05 collected from floor in Supply Room; along north wall. (Supply Room #2 on facility floor plan located in Appendix D).



**Photo 7:** Lead wipe 071714-BLDG517-06 collected from desktop in Office #10, used by 190<sup>th</sup> Chemical Recon Detachment (CRD) as work area and cleaning weapons.



**Photo 8:** Supply Room #4; southeast corner. View of electrical panel with exposed conductor.



PHOTO LOG  
BUILDING 517, FORT HARRISON  
HELENA, MT  
JULY 17, 2014



Photo 9: Supply Room #4; northeast corner.



Photo 10: Central Issue Facility (CIF) Supply Room #1; storage of standard issue supply item; view of access way to Supply Room #2.

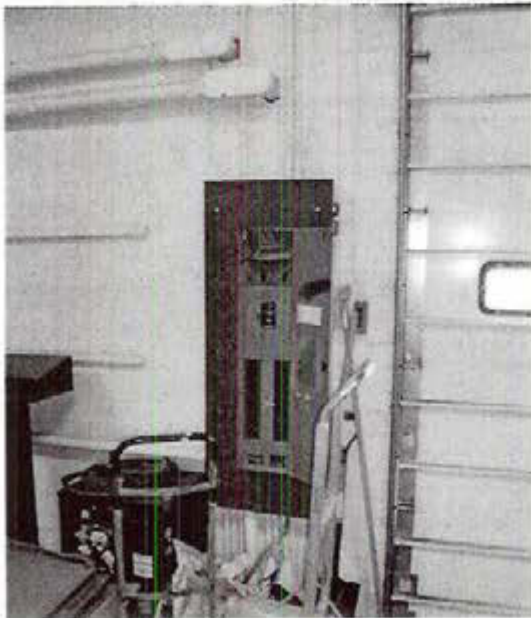


Photo 11: Supply Room #4; view of damaged breaker panel.



Photo 12: Supply Room #4; close-up view of exposed conductors in breaker panel.

**PHOTO LOG**  
**BUILDING 517, FORT HARRISON**  
**HELENA, MT**  
**JULY 17, 2014**



**Photo 13:** Supply Room #4; obstructed access and exposed wires in breaker panel on East wall.



**Photo 14:** Supply Room #4; close-up view of exposed wires in breaker panel on East wall.



**Photo 15:** MSDS safety poster and binder.



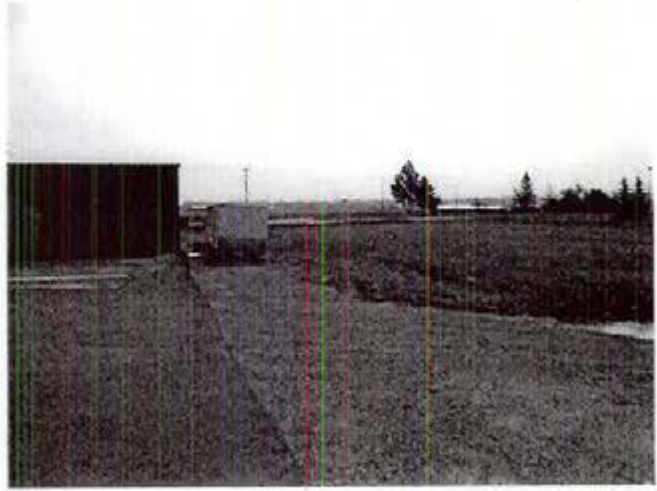
**Photo 16:** Entrance to Supply Room #4; Radon sign posted.



**PHOTO LOG  
BUILDING 517, FORT HARRISON  
HELENA, MT  
JULY 17, 2014**



**Photo 17:** Vault access door with warning signs.



**Photo 18:** View to East, edge of Fort Harrison.



**Photo 19:** View to North; adjacent Fort Harrison building.



**Photo 20:** View to South; adjacent Fort Harrison admin building.



**PHOTO LOG**  
**BUILDING 517, FORT HARRISON**  
**HELENA, MT**  
**JULY 17, 2014**



**Photo 21: View to West; adjacent Fort building.**

**PHOTO LOG**  
**BUILDING 1002, FORT HARRISON**  
**HELENA, MONTANA**  
**JULY 17, 2014**

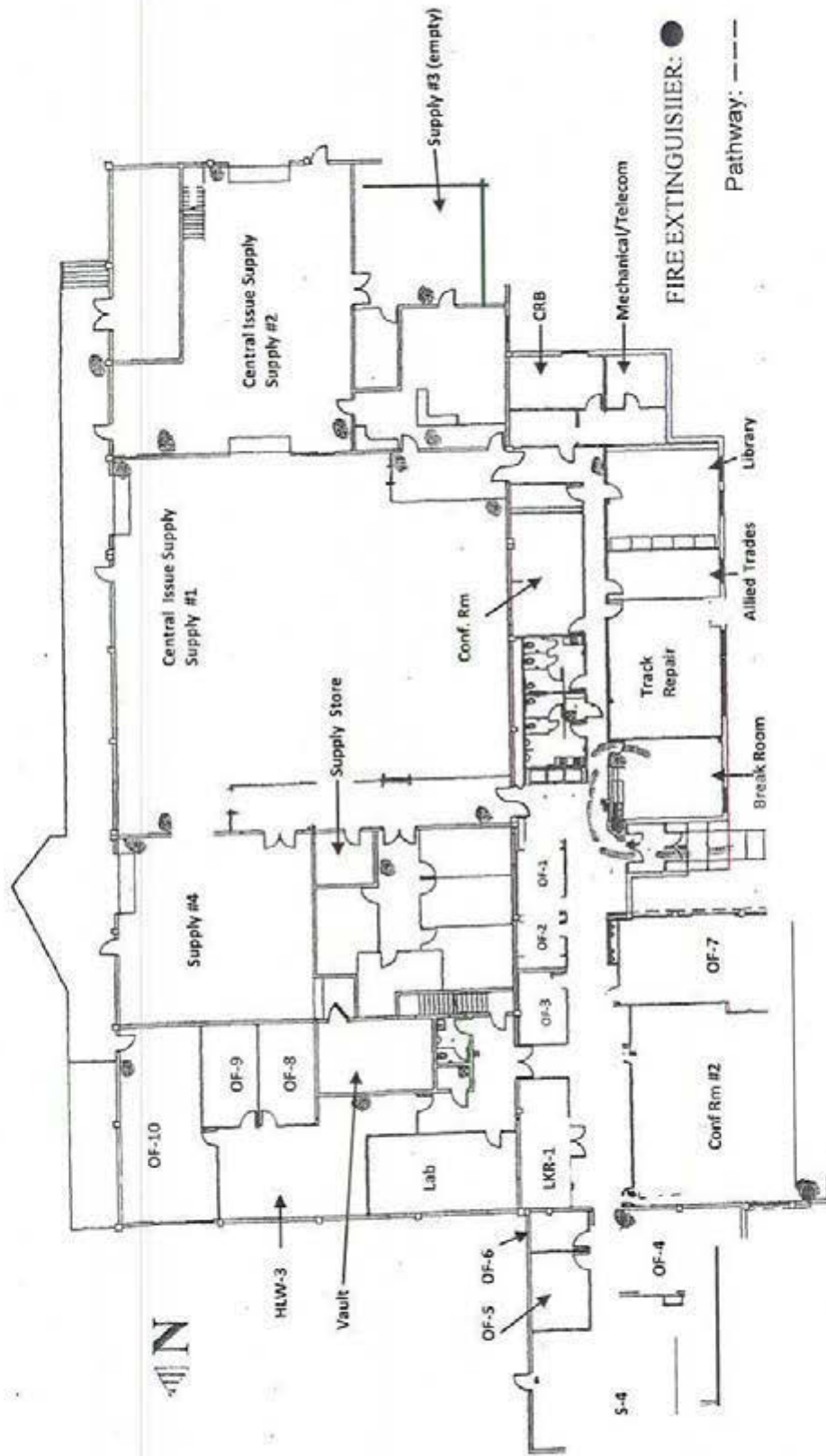


**Photo 1:** Building #1002 located east of Building #517; 90<sup>th</sup> Troop Command unit uses the south end of metal storage building as cold storage.



**Photo 2:** Building # 1002 located east of Building #517; 90<sup>th</sup> Troop Command unit uses the south end of metal storage building as cold storage.

# 95th Troop Command (Building 517)

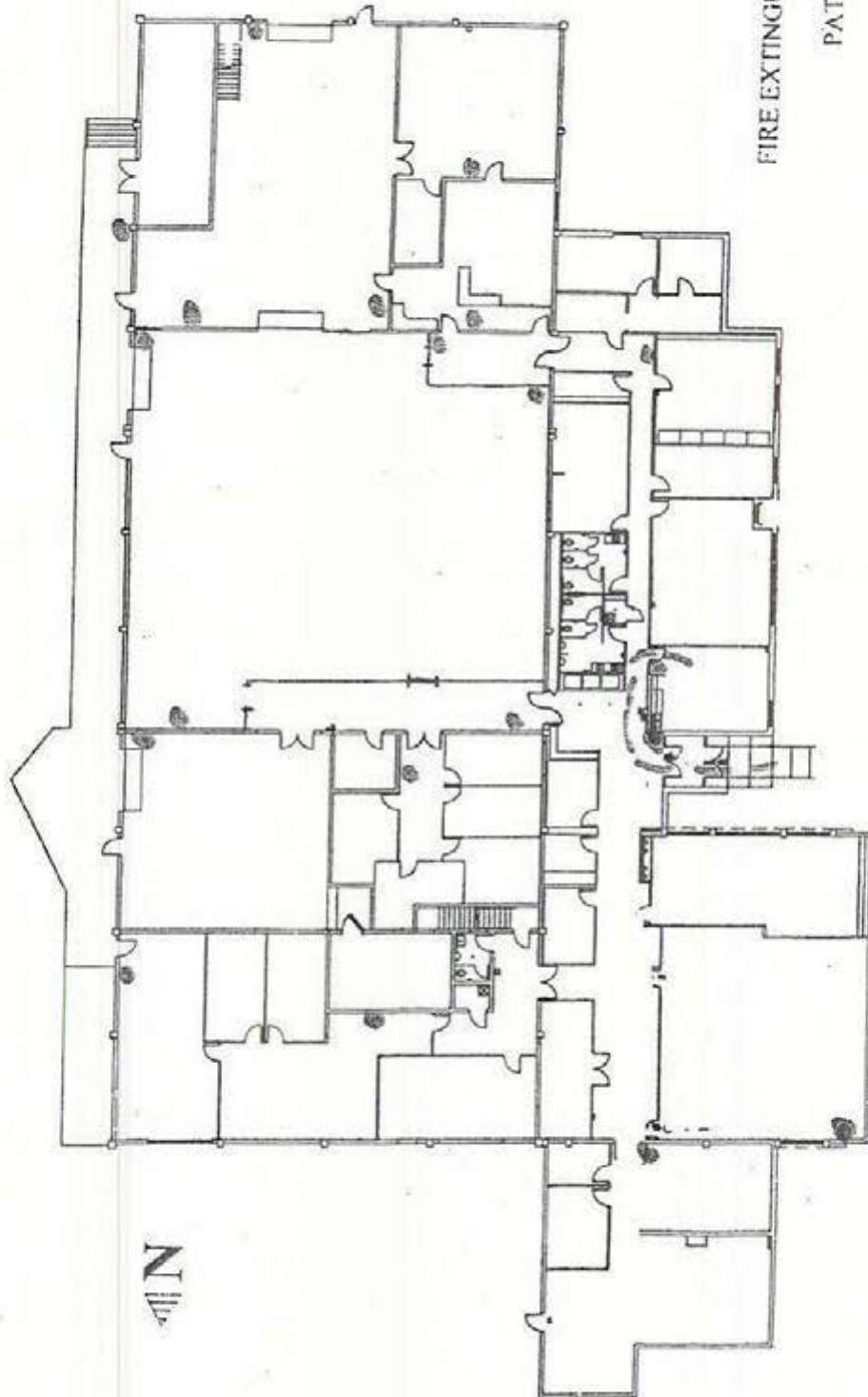


## FIRE EVACUATION PLAN

Fire Assembly Area  
Building 121



95<sup>th</sup> Troop Command  
(Building 517)



FIRE EXTINGUISHER: ●

PATHWAY: - - - -

FIRE EVACUATION PLAN

FIRE ASSEMBLY AREA  
BUILDING 121

**IAQ MEASUREMENTS**  
**FORT HARRISON**  
**HELENA, MT**  
**JULY 17, 2014**

**BUILDING #517**

Location	CO <sub>2</sub> max permissible level 1,303 ppm	Temperature permissible range 68 - 75°F	RH% permissible range 30-60%	CO Max permissible 200 ppm STEL
Break Room	652	71.2	45.5	1
Track Repair Room	645	71.6	42.5	1
Allied Trade Service Lift	564	71.6	39.0	1
Library	604	72.5	41.2	1
Hallway #1	713	72.9	45.4	1
CRB	675	73.5	49.3	2
Conference Room #1	743	73.6	46.3	2
Men's Latrine	685	73.6	46.8	2
Supply Room #1	663	74.3	48.3	2
Supply Room #2	503	73.5	47.9	2
Empty Supply Room #3	504	73.7	47.1	2
Case Room	768	74.8	46.8	2
Supply Room #4	524	74.6	43.5	2
Vault	486	74.4	42.5	2
Supply Storage	576	74.7	42.7	19.3
Office #1	774	74.5	45.1	2
Office #2	812	74.5	44.8	2

**IAQ MEASUREMENTS**  
**FORT HARRISON**  
**HELENA, MT**  
**JULY 17, 2014**

**BUILDING #517**

Location	CO <sub>2</sub> max permissible level 1,303 ppm	Temperature permissible range 68 - 75°F	RH% permissible range 30-60%	CO Max permissible 200 ppm STEL
Office #3	781	74.4	45.2	2
Office #7	804	74.5	45.3	2
Conference Room #2	733	73.2	45.2	2
Office #4	779	73.3	46.8	2
Office #6	936	73.9	45.3	2
Office #5	919	74.4	47.2	2
S-4 Room	977	74.5	47.2	2
LKR-1	854	74.1	47.3	2
Lab	636	72.5	40.8	2
JC-2	708	71.7	43.5	2
Latrine	682	72.0	46.6	2
Office #8	513	70.8	43.2	2
Office #9	541	70.6	43.9	2
Office #10	500	70.4	43.9	2
Outdoor Control	603	72.3	51.6	2

**BOLD = Outside of permissible range**CO<sub>2</sub> = Carbon Dioxide

CO = Carbon Monoxide

°F = Fahrenheit

RH = Relative Humidity



**IAQ MEASUREMENTS**  
**FORT HARRISON**  
**HELENA, MT**  
**JULY 17, 2014**

**BUILDING #1002**

Location	CO <sub>2</sub> max permissible level 1,303 ppm	Temperature permissible range 68 - 75°F	RH% permissible range 30-60%	CO Max permissible 200 ppm STEL
Cold Storage West End of Building	634	92.4	40.5	3
Cold Storage West End of Building	501	92.9	36.1	3
Outdoor Control	603	72.3	51.6	2

**BOLD = Outside of permissible range**CO<sub>2</sub> = Carbon Dioxide

CO = Carbon Monoxide

°F = Fahrenheit

RH = Relative Humidity

**ILLUMINATION SURVEY**  
**FORT HARRISON**  
**HELENA, MT**  
**JULY 17, 2014**

**BUILDING #517**

Room	Light Measurement (FC)	Minimum Lighting Requirement (FC)
Office #4	68.2	≥50
Office #6	126.5	≥50
Office #5	84.3	≥50
S-4 Room	111.6	≥30
LKR-1	63.9	≥30
Lab	69.6	≥50
JC-2	<b>0</b>	≥30
Latrine	73.1	≥10
Office #8	<b>48.1</b>	≥50
Office #9	78.4	≥50
Office #10	78.1	≥50

\*FC = foot candle measurement

**Bold** = Insufficient Lighting

ILLUMINATION SURVEY  
FORT HARRISON  
HELENA, MT  
JULY 17, 2014

**BUILDING #1002**

Room	Location	Light Measurement (FC)	Minimum Lighting Requirement (FC)
Cold Storage	West End of Building	66.8	$\geq 30$
Cold Storage	East End of Building	61.8	$\geq 30$

\*FC = foot candle measurement

**Bold** = Insufficient Lighting





## Facility Information Form

Revised: December 4, 2013



## General Facility Information

IH(s):

**Non-Responsive**

Date(s) of Previous IHSAs:

Unknown

Date(s) of IHSAs:

July 17, 14

Facility Name:

Ft. Harrison, B/517 - Troop Command

Address:

Bldg 10517 Mt Major St

Facility Commander:

Safety Officer:

**Non-Responsive**

Name / Phone Number / email

No Person(s):

25

Admin:

25

Maint:

0

Work Sched:

7am-5pm

Size of Facility:

unk

n°

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

Unit(s):

195th Troop Command

Co-Tenant(s):

None

Build Date:

unk

Primary work activities at Facility:

Admin. for other non-deployable units for the state of MT

## Written Health &amp; Safety Programs / SOPs

Program	Program Needed	Have Program	Date of Last Training	# Enrolled	Comments
Confined Space	NO				Admin Function (AF)
Emergency Preparedness	NO				
Hazard Communication	NO				Have MSDS
Hearing Conservation	NO				AF
PPE	NO				AF
Respiratory Protection	NO				AF

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

Post-Ft. Harrison

Rags

NA

Hazardous Waste

NA

Refuse

Post-Ft. Harrison

Crane Maintenance

NA

Others:



## General Safety Compliance Assessment Form

Facility: B/517Date: 7-17-14

Revised: September 18, 2013



24

## Hazardous Materials (1910.106 - .107)

Applicable

Not Applicable

- Storage (quantity, upright, sealed) ☐ Yes ☐ No
- Storage cabinet (flammable & corrosive) ☐ Yes ☐ No
- Safety equip. present (eyewash / shower/spill kit) ☐ Yes ☐ No
- Hazard signs at entrance (NFPA, etc.) ☐ Yes ☐ No
- Proper segregation ☐ Yes ☐ No

## Hearing Conservation / Noise (1910.95)

Applicable

Not Applicable

- Audiometric testing ☐ Yes ☐ No
- Noise haz. areas (>85dBA) present / labeled ☐ Yes ☐ No
- Exposure monitoring ☐ Yes ☐ No

## Heat Stress (General Duty Clause)

Applicable

Not Applicable

- Worksite evaluation ☐ Yes ☐ No
- Precaution / control measures ☐ Yes ☐ No

## Ladders (1910.25 - .27)

Applicable

Not Applicable

- Sturdy / good condition ☐ Yes ☐ No
- Training received / documented ☐ Yes ☐ No

## Overhead Crane (1910.179)

Applicable

Not Applicable

- Written procedures ☐ Yes ☐ No
- Training received / documented ☐ Yes ☐ No
- Rated load markers ☐ Yes ☐ No
- Warning devices (power travel mechanism) ☐ Yes ☐ No
- Inspection / testing / certification ☐ Yes ☐ No

## PPE (1910.132, .133, &amp; .135 - .138)

Applicable

Not Applicable

- Proper type / selection / use ☐ Yes ☐ No
- Hazard assessment conducted ☐ Yes ☐ No

## Respiratory Protection (1910.134)

Applicable

Not Applicable

- Proper type / selection / use ☐ Yes ☐ No
- Medical surveillance / fit-testing ☐ Yes ☐ No

## Walking / Working Surfaces (1910.22)

Applicable

Not Applicable

- Floors / aisles dry ☐ Yes ☐ No
- Floors / aisles unobstructed ☐ Yes ☐ No
- Openings guarded ☐ Yes ☐ No

## Welding, Cutting, Brazing (1910.94 &amp; 251 - 255)

Applicable

Not Applicable

- Local exhaust ventilation ☐ Yes ☐ No
- Exposure assessment conducted ☐ Yes ☐ No
- Guards / barriers ☐ Yes ☐ No

## Building Material Hazards

## Asbestos

- Suspect materials present ☐ Yes ☒ No
- Is there an ACM Inspection Report ☐ Yes ☒ No

No Survey Rpt / Mail out Bldg.!

If yes, obtain copy May Reside w/ FMO

## Lead

- Peeling paint present ☐ Yes ☒ No

If yes, collect bulk sample

No Peeling Paint

## Mold

- Is there evidence of moisture intrusion? ☐ Yes ☒ No
- Is there current moisture intrusion? ☐ Yes ☒ No
- Is there visible mold growth? ☐ Yes ☒ No

FMO = Fail. Maint. Office



.24

B/517

called

**Non-Responsive**

SSAMO - moved out of Bldg 517

B/517 is a single story, block/concrete construction which use is primarily administrative in nature. The 95th Troop Command is the primary occupant. Building contains a Supply area to issue supplies to troops/units.

Supply Rm  
 - unmarked 10 Elect Panel w/ exposed conductor

SW  
 Findings  
 H&Z



AD

FT Harrison Bldg 517

.24

FAQ

Supply 36 fixtures - 6 per fixtures - 110000000

110000000 lights out



Air Quality & Illumination Measurements  
 Facility: Harrison Bldg 517, 24  
 Date: July 17, 2014  
 Revised: September 18, 2013



Location	CO <sub>2</sub> max permissible level 1,000 ppm	Temperature permissible range 68 - 75° F	RH% permissible range 30-60%	CO max permissible range 200 ppm. STEL	Illumination (FC)
Supply Storage	574	74.7	42.7	2	14.3
Office 1 OP1	774	74.5	45.1	2	96.5
of 2	612	74.5	44.4	2	135.2
of 3	781	74.4	45.2	2	165.2
OF 7	804	74.5	45.3	2	137.4
conference RM	733	73.2	45.2	2	136.4
of 4	779	73.3	46.5	2	68.2
OF 6	936	73.9	45.3	2	126.5
OF 5	919	74.4	47.2	2	84.3
S-4	977	74.5	47.2	2	111.6
LKR-1	854	74.1	47.3	2	63.9
Lab	636	72.5	40.8	2	64.6
SC-2	704	71.7	43.5	2	light out
Restroom	662	72	46.6	2	73.1

CO<sub>2</sub> = Carbon Dioxide  
 °F = Fahrenheit  
 RH = Relative Humidity  
 CO = Carbon Monoxide  
 STEL = Short Term Exposure Limit

OVER →





# Indoor Air Quality & Illumination Measurements

Facility: FT Harrison Bldg 517, 24

Date: July 17, 2014

Revised: September 18, 2013



Location	CO <sub>2</sub> max permissible level 1,000 ppm	Temperature permissible range 68 - 75° F	RH% permissible range 30-60%	CO max permissible range 200 ppm. STEL	Illumination (FC)
Break Rm	652	71.2	45.5	1	164
Truck Repair	645	71.6	42.5	1	84.8
Allied Trade service list	564	71.6	39.0	1	77.1
Library	604	72.5	41.2	1	141
Hallway 1	713	72.9	45.4	1	61.7
CRB	675	73.5	49.3	2	144
conference RM #1	743	73.6	46.3	2	98.9
Men RM	685	73.6	46.6	2	
Supply	663	74.3	48.6	2	70.4
Supply 2	503	73.5	47.9	2	75.9
Empty Supply 3	504	73.7	47.1	2	45.1
Cable Room	764	74.8	46.8	2	
Supply Room 4	524	74.6	43.5	2	73.4
Vault	486	74.4	42.5	2	85.9

1 non  
top  
lights

1 fixture  
non op

CO<sub>2</sub> = Carbon Dioxide

°F = Fahrenheit

RH = Relative Humidity

CO = Carbon Monoxide

STEL = Short Term Exposure Limit



24 /

**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)	Done (No drill floor) Sec Site Map
Are any weapons cleaned in the facility, if yes where are they cleaned?	yes supply area, lead spls collected
Additional lead wipe samples taken from 25% of the rest of the building - (on floor areas only)	Done
Is there a converted indoor firing range? If so collect additional wipe samples IAW the SOW.	None
Is there any peeling paint? Take bulk sample if able.	None
Are there any signs of water damage or mold?	None
Any suspected ACM? Where and what condition is it in. Bulk sample if able.	yes, see notes
Quality of housekeeping	Good
HVAC maintenance plan in place?	w/ FMO
Overall condition of HVAC system	occupants have no complaints
Obtained CO2, Temp, RH monitoring	Done
HAZMAT inventory on hand (make copies for the report), MSDS available for all materials.	unknown
HAZMAT storage, Condition of lockers, if outside storage building is used is it ventilated and does it meet OSHA standards.	None

3

Evaluate Kitchen Stove Hood Flow if Present IAW NFPA Standard 96.	None
Collect Source Noise Measurements of Kitchen Appliances and Document Using DD 2214	None
Conduct a safety walkthrough of entire facility document any safety deficiencies found.	Done
<u>Take photos</u> of outside of building, all sample points and any pertinent hazards or concerns.	Done
Name of Armory, POC, phone #, address and organizations in Armory	See Facil Info Form
(Add Checklist to Report)	(Add Checklist to Report)



## Type Sampling Summary Form

Facility: **Non-Responsive**Collected By: **Non-Responsive**Date & Time: July 17, 2014

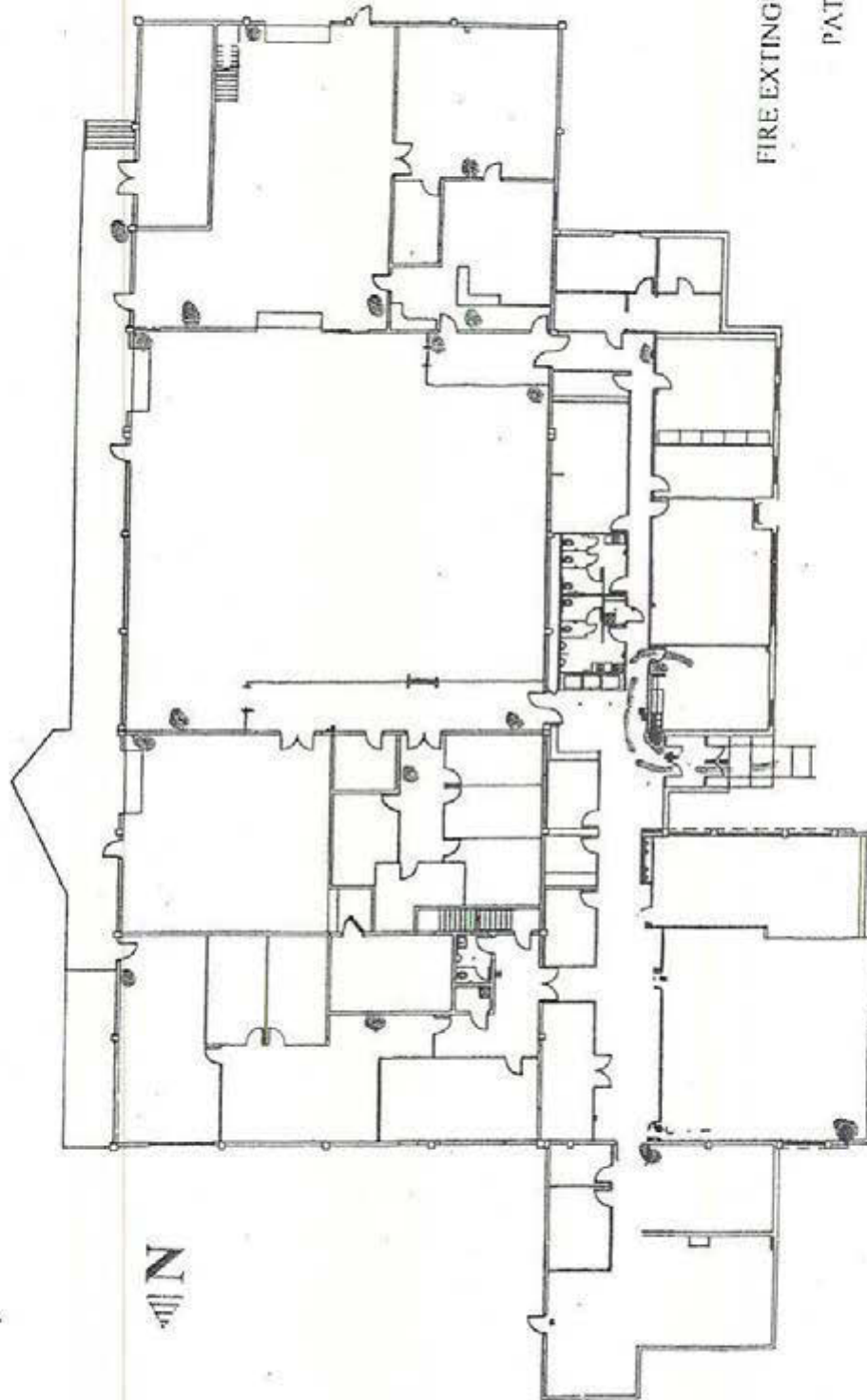
Revised: September 18, 2013



Sample Information		Sample Area	Area Units	Analyte(s)
1	Sample Number:	Floor 1	Att <sup>2</sup>	Lead
	Sample Location:			
2	Sample Number:			
	Sample Location:			
3	Sample Number:			
	Sample Location:			
4	Sample Number:			
	Sample Location:			
5	Sample Number:			
	Sample Location:			
6	Sample Number:			
	Sample Location:			
7	Sample Number:			
	Sample Location:			
8	Sample Number:			
	Sample Location:			
9	Sample Number:			
	Sample Location:			
10	Sample Number:			
	Sample Location:			
11	Sample Number:			
	Sample Location:			
12	Sample Number:			
	Sample Location:			
13	Sample Number:			
	Sample Location:			



95<sup>th</sup> Troop Command  
(Building 517)



FIRE EXTINGUISHER: ●

PATHWAY: - - - - -

FIRE EVACUATION PLAN

FIRE ASSEMBLY AREA  
BUILDING 517

# Tektronix

## Certificate of Calibration



8710195 REV1

Certificate Page 1 of 2

### Instrument Identification

Company ID: 607229  
 NETWORK ENVIRONMENTAL SYSTEMS  
**Non-Responsive**  
 1141 SIBLEY STREET  
 FOLSOM, CA 95630

PO Number: CC- **Non-Responsive**

Instrument ID: 00279019  
 Manufacturer: KONICA MINOLTA  
 Description: ILLUMINANCE METER

Model Number: TL-1  
 Serial Number: 00279019

### Certificate Information

Reason For Service: CALIBRATION  
 Type of Cal: NORMAL  
 As Found Condition: IN TOLERANCE  
 As Left Condition: IN TOLERANCE  
 Procedure: 33K4-4-475-1 JUN13

Technician: **Non-Responsive**

Cal Date: 02Jun2014  
 Cal Due Date: 02Jun2015  
 Interval: 12 MONTHS  
 Temperature: 24.0 C  
 Humidity: 43.0 %

Remarks: REV 1 ADDED: DATA REPORT ATTACHED

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: **Non-Responsive**  
 Service Representative

Issue Date: 6/2/2014

### Calibration Standards

NIST Traceable#	Inst. ID#	Description	Manufacturer	Model	Cal Date	Date Due
7302067	000800	STANDARD SHUNT	RUBICON	ABS 1	26Apr2013	28Apr2015
1700294966	17-1001076	6 STEEL RULE	STARETT	C416R-72	22Mar2013	22Mar2015
8095776	17-1001081	LUMINANCE STD	OPTRONIC LABS	OL 455-4	16Dec2013	16Dec2014



Manufacturer: KONICA MINOLTA  
 Serial Number: 00279019

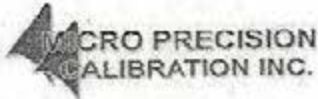
Model Number: TL-1  
 Calibration Date: 6/2/2014

Function / Range	Nominal Value	As Found	Result	As Left	Result	Min	Max	Units	UNC
ILLUMINANCE									
	10	10.04	Pass	Same	Pass	9.49	10.51	f/c	
	100	100.10	Pass	Same	Pass	94.9	105.1	f/c	
	1000	950.00	Pass	Same	Pass	940	1060	f/c	

Datasheets may contain measurements that are not covered by the Scope of Accreditation. These measurements are indicated by a pound sign (#).

\*\*\*\*\*END OF MEASUREMENT REPORT\*\*\*\*\*





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: **Non-Responsive**  
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 28, 2013	2008120224653

**Procedures Used in this Event**

Procedure Name	Description
MANUFACTURER	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/NCSL 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.

**TABLE 1**  
**LEAD WIPE SAMPLE RESULTS**  
**BUILDING 517, FORT HARRISON**  
**HELENA, MT**  
**JULY 17, 2014**

Sample Number	Sample Area	Sample Location	Results ( $\mu\text{g}/\text{ft}^2$ )	ARNG Standard ( $\mu\text{g}/\text{ft}^2$ )
071714- BLDG517-01	Break Room	Floor	2.6	$\leq 40$
071714- BLDG517-02	CIF Supply #1 – West Side	Floor	88	<200
071714- BLDG517-03	CIF Supply #1- East Side	Floor	50	<200
071714- BLDG517-04	CIF Supply #2 – East Side	Floor	54	<200
071714- BLDG517-05	CIF Supply #2 – West Side	Floor	46	<200
071714- BLDG517-06	Office #10	Desktop	32	$\leq 40$

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

ARNG = Army National Guard

ND = none detected at or above the analytical detection limit

**Bold** = Above ARNG Standard limit





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## ANALYTICAL REPORT

Report Date: July 30, 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: 34-1420591

Client Project ID: FT Harrison Bldg

Purchase Order: 013 IH1716.24

Project Manager: **Non-Responsive**

## Analytical Results

Sample ID: 071714-BLDG517-FB		Collected: 07/17/2014	
Lab ID: 1420591001		Received: 07/23/2014	
Method: NIOSH 7300 Mod.		Media: Ghost Wipe	
		Sampling Parameter: Area 1 ft <sup>2</sup>	
		Prepared: 07/30/2014	
		Analyzed: 07/30/2014	
Analyte	ug/sample	ug/ft <sup>2</sup>	RL (ug/sample)
Lead	<1.3	<1.3	1.3

Sample ID: 071714-BLDG517-01		Collected: 07/17/2014	
Lab ID: 1420591002		Received: 07/23/2014	
Method: NIOSH 7300 Mod.		Media: Ghost Wipe	
		Sampling Parameter: Area 1 ft <sup>2</sup>	
		Prepared: 07/30/2014	
		Analyzed: 07/30/2014	
Analyte	ug/sample	ug/ft <sup>2</sup>	RL (ug/sample)
Lead	2.6	2.6	1.3

Sample ID: 071714-BLDG517-02		Collected: 07/17/2014	
Lab ID: 1420591003		Received: 07/23/2014	
Method: NIOSH 7300 Mod.		Media: Ghost Wipe	
		Sampling Parameter: Area 1 ft <sup>2</sup>	
		Prepared: 07/30/2014	
		Analyzed: 07/30/2014	
Analyte	ug/sample	ug/ft <sup>2</sup>	RL (ug/sample)
Lead	88	88	1.3

Sample ID: 071714-BLDG517-03		Collected: 07/17/2014	
Lab ID: 1420591004		Received: 07/23/2014	
Method: NIOSH 7300 Mod.		Media: Ghost Wipe	
		Sampling Parameter: Area 1 ft <sup>2</sup>	
		Prepared: 07/30/2014	
		Analyzed: 07/30/2014	
Analyte	ug/sample	ug/ft <sup>2</sup>	RL (ug/sample)
Lead	50	50	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

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

Page 1 of 3  
May, 2018

Wed, 07/30/14 6:41 PM

Released by National Guard Bureau IHREP-V11.3  
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## ANALYTICAL REPORT

Workorder: 34-1420591  
Client Project ID: FT Harrison Bldg  
Purchase Order: 013 IH1716.24  
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	ACLASS (DoD ELAP)	ADE-1420	<a href="http://www.aiclasscorp.com">http://www.aiclasscorp.com</a>
	Utah (NELAC)	DATA1	<a href="http://health.utah.gov/lab/labimp/">http://health.utah.gov/lab/labimp/</a>
	Nevada	UT00009	<a href="http://ndep.nv.gov/bsdwlabservice.htm">http://ndep.nv.gov/bsdwlabservice.htm</a>
	Oklahoma	UT00009	<a href="http://www.deq.state.ok.us/CSDnew/">http://www.deq.state.ok.us/CSDnew/</a>
	Iowa	IA# 376	<a href="http://www.iowadnr.gov/InsideDNR/RegulatoryWater.aspx">http://www.iowadnr.gov/InsideDNR/RegulatoryWater.aspx</a>
	Florida (TNI)	E871067	<a href="http://www.dep.state.fl.us/labs/bars/sas/qa/">http://www.dep.state.fl.us/labs/bars/sas/qa/</a>
	Texas (TNI)	T104704456-11-1	<a href="http://www.tceq.texas.gov/field/qa/lab_accred_certif.html">http://www.tceq.texas.gov/field/qa/lab_accred_certif.html</a>
Industrial Hygiene	AIHA (ISO 17025 & AIHA IHLAP/ELLAP)	101574	<a href="http://www.aihaaccreditedlabs.org">http://www.aihaaccreditedlabs.org</a>
Lead Testing:			
CPSC	ACLASS (ISO 17025, CPSC)	ADE-1420	<a href="http://www.aiclasscorp.com">http://www.aiclasscorp.com</a>
Soil, Dust, Paint, Air	AIHA (ISO 17025, AIHA ELLAP and NLLAP)	101574	<a href="http://www.aihaaccreditedlabs.org">http://www.aihaaccreditedlabs.org</a>
Dietary Supplements	ACLASS (ISO 17025)	ADE-1420	<a href="http://www.aiclasscorp.com">http://www.aiclasscorp.com</a>

## 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.

1420591



1. ☒ REGULAR Status

☐ RUSH Status Requested - ADDITIONAL CHARGE

### RESULTS REQUIRED BY

DATE \_\_\_\_\_

CONTACT ALS SALT LAKE PRIOR TO SENDING SAMPLES

2. Date 7/17/14 Purchase Order No. 013-FH/216,24

4. Quote No.

3. Company Name NES

ALS Project Manager

Address 1141 Sibley St.

### 5. Sample Collection

Folsom CA, ~~95630~~ 95630

Sampling Site F7 Harrison Blvd St /

Person to

### Industrial Process

Telephone

Date of Collection

Fax Telep

Time Collected

E-mail Ad

Date of Shipment

Billing Address (if different from above)

Chain of Custody No. 013-FH1716,24

6. How did you first learn about ALS?

## 7. REQUEST FOR ANALYSES

[illegible]

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

\*\* 1.  $\mu\text{g}/\text{sample}$  2.  $\text{mg}/\text{m}^3$  3. ppm 4. % 5.  $\mu\text{g}/\text{m}^3$  6. \_\_\_\_\_ (other) Please indicate one or more units in the column entitled Units\*\*

### Comments

### Possible Contaminants of the Chemical Laboratory

## 7. Chain of Custody

Relinquished by

Date/Time 7/17/14

Received by

Date/Time 07/23/14 09:05

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

Non-Responsive

Posted to NGB FOIA Reading Room  
May, 2018

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FOIA Requested Record #J-15-0085 (MT)  
Released by National Guard Bureau  
Page 464 of 1990





# Industrial Hygiene Southwest

## Violation Inventory Log

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

*Troop Command, Building 517, Fort Harrison located in Helena, Montana*

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"/>									
MTBldg517- 071714-4.8	Illumination was insufficient for activities performed	Office #8 & JC-2	4	Increase illumination to provide the necessary 50 foot candles in Office #8 and repair electrical light fixture in Janitor Closet #2 (JC-2).					ANSI RP7-1991 Standard & MIL-STD-1472E
MTBldg517- 071714-5.3	Suspected Asbestos Containing Building Materials: inspection, re-inspection, and Asbestos Hazard Management Plan	Facility	3	Conduct a facility survey to identify & assess extent of asbestos hazards, prior to any renovation activities; & implement an Asbestos Hazard Management Plan					AR 420-1, 5-24b, c, & d
MTBldg517- 071714-6.1	Written Hazard Communication (HAZCOM) Program was not available	Facility	4	Develop and implement a written HAZCOM Program					29 CFR 1910.1200 (e)(1) & AR 385-10, 16-2d(2)
MTBldg517- 071714-6.2	Hazard Communication (HAZCOM) Program training was not provided	Facility	4	Ensure all appropriate personnel receive HAZCOM training and maintain documentation indicating this training has been conducted					29 CFR 1910.1200 (h)
MTBldg517- 071714-7.4.1	Portable fire extinguisher(s) were missing inspection / annual maintenance check records	Facility	3	Visually inspect fire extinguishers monthly & undergo annual maintenance checks; maintain documentation of these on the inspection tag					29 CFR 1910.157(e)
MTBldg517- 071714-7.4.2	Electrical panels were obstructed	Facility	4	Relocate materials to allow unobstructed access to electrical panels & to ensure their safe operation					29 CFR 1910.303 (g)(1)



## **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 IHSAY report for Building 517, Fort Harrison. The paragraphs are numbered to correspond to the sections where first noted. (i.e., N.3.2 describes the following: the N is Conclusions & Recommendations and the 3.2 corresponds back to Section 3 – Methods; Item 2 – Indoor Air Quality).

**N.4.8 Illumination Level Monitoring** - Increase the lighting in Office #8 to provide the necessary illumination level of 50 foot candles, within the space; repair or replace the light fixture in janitor closet #2.

**N5.3 Asbestos Management** – Conduct an asbestos survey to identify and assess extent of suspect asbestos containing materials present at the facility and evaluate any hazards. Implement an Asbestos Hazard Management Plan if asbestos is found to be present within the facility.

**N6.1 Written Programs and SOPs** – Develop and implement a written Hazard Communication (HAZCOM) Program and ensure documentation available for reference.

**N6.2 Training Documentation** - Conduct safety training for Hazard Communication Program. Be sure to maintain documentation of the training.

### **N7.4 Safety Walk-Through**

1. Perform monthly inspections of fire extinguishers and ensure they are serviced annually. Maintain documentation that these are completed.
2. Repair exposed conductors on two electrical panels located in Supply Room #4; remove obstacles located in front of electrical panel on East wall of Supply Room #4.

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 $\geq$ 85 dBA with no controls		953-01-05				0
Number of Personal Noise Dosimetry samples collected $\geq$ 85 dBA		953-01-05				0
Number of Noise Sound Level samples collected $\geq$ 140 dBP with no controls		953-01-06				0
Number of Noise Sound Level samples collected $\geq$ 140 dBP		953-01-06				0
Number of Noise Sound Level samples collected $\geq$ 140 dBP not controlled, that are recommended for control		953-01-07				0
Number of Noise Sound Level samples collected $\geq$ 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 $\geq$ 85 dBA not controlled, that are recommended for control		953-01-09				0
Number of Personal Noise Dosimetry samples collected $\geq$ 85 dBA not controlled		953-01-09				0
Total number of DOEHS-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 DOEHS-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: December 4, 2013



**General Facility Information**

Date(s) of Previous IHSAs: None Available

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

Date(s) of IHSAs: July 17, 2014

Facility Name: Building 517, 95<sup>th</sup> Troop Command

Address: Fort Harrison, Helena, MT 59636

Facility Commander: **Non-Responsive**

Name / Phone Number / email

Safety Officer: **Non-Responsive**

Name / Phone Number / email

No Person(s): 25 Admin: 25 Maint: 0 Work Sched: 7 AM – 5 PM Size of Facility: unknown

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

1- 95<sup>th</sup> Troop Command

2- 190<sup>th</sup> CRD

Co-

Unit(s): 3- Central Issue Facility (CIF)

Tenant(s):

Build Date: Unknown

Include UIC if available

List All

Renovation:

Primary work  
activities at  
Facility:

Administrative unit for other non-deployable units for the State of Montana

**Written Health & Safety Programs / SOPs**

Program	Program Needed	Have Program	Date of Last Training	# Enrolled	Comments
Confined Space	No				Admin Function (AF)
Emergency Preparedness	Yes				
Hazard Communication	Yes				Have MSDS
Hearing Conservation	No				AF
PPE	No				AF
Respiratory Protection	No				AF
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>NA</u>	Laundry	<u>NA</u>
Tools	<u>NA</u>	Pest Control	<u>Managed by Post/Fort Harrison</u>
Rags	<u>NA</u>	Hazardous Waste	<u>NA</u>
Refuse	<u>Managed by Post/Fort Harrison</u>	Crane Maintenance	<u>NA</u>
Others:			

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

Five <b>lead wipe</b> samples collected from drill floor (take samples from dusty horizontal floor surfaces)	<b>This facility does not have a drill floor</b>
Are any <b>weapons cleaned</b> in the facility, if yes where are they cleaned?	<b>Yes, in the supply area. Lead samples collected</b>
Additional <b>lead wipe</b> samples taken from 25% of the rest of the building - -(on floor areas only)	<b>Yes, 071714-Bldg517-02, 03, 04, 05, and 06</b>
Is there a <b>converted indoor firing range</b> ? If so collect additional wipe samples IAW the SOW.	<b>None</b>
Is there any peeling <b>paint</b> ? Take bulk sample if able.	<b>None</b>
Are there any signs of water damage or <b>mold</b> ?	<b>None</b>
Any suspected <b>ACM</b> ? Where and what condition is it in. Bulk sample if able.	<b>Yes, suspect ACM in VAT, Base Cove, Sheet rock and joint compound</b>
Quality of housekeeping	<b>Good</b>
HVAC maintenance plan in place?	<b>Maintained by the FMO</b>
<b>Overall condition</b> of HVAC system	<b>Occupants have no complaints</b>
Obtained <b>CO2, Temp, RH</b> monitoring	<b>Yes</b>
<b>HAZMAT inventory</b> on hand (make copies for the report), <b>MSDS</b> available for all materials.	<b>Unknown</b>
<b>HAZMAT storage</b> , Condition of lockers, if outside storage building is used is it ventilated and does it meet OSHA standards.	<b>None</b>

<b>Fire alarm</b> in working condition - -not usually in place in older armories	<b>Yes</b>
<b>Fire extinguishers</b> in place and properly identified and mounted	<b>Most, not all</b>
Evidence of <b>monthly fire extinguisher inspections</b>	<b>Yes, not all</b>
<b>Annual</b> fire extinguisher inspections tags current	<b>Yes</b>
Are <b>eye wash</b> stations available in areas where hazardous materials are used and are they inspected weekly (inspections must be documented)	<b>N/A</b>
<b>Egress</b> routes accessible and properly marked - -noted on <u>Fire Evacuation Plan</u>	<b>Yes</b>
<b>Training programs</b> in place; Hazcom, Respiratory Protection, Confined Spaces, Hearing conservation, PPE (if applicable)	<b>No</b>
Any Photo labs	<b>None</b>
Any hazardous <b>noise</b> sources	<b>None</b>
<b>Light levels</b> checked throughout building	<b>Yes</b>
<b>Breaker panels</b> properly labeled with no exposed wiring	<b>All good, except exposed conductors in Supply Room #4 (see site map in Appendix E)</b>
Check <b>building occupancy</b>  1. How many military personnel, how many civilian personnel 2. What types of units occupy facility, i.e. Administrative, Maintenance, etc.?	<b>1. Military: 25 Civilian: 0  2. Administrative</b>
Any <b>civilian activities</b> in armory (cub scouts, classes, day care, parties etc)	<b>None</b>
Obtain two <b>lead air samples</b>	<b>On IHSW Request Only</b>



Evaluate Kitchen Stove Hood Flow if Present IAW NFPA Standard 96.	None
Collect Source Noise Measurements of Kitchen Appliances and Document Using DD 2214	None
Conduct a safety walkthrough of entire facility document any safety deficiencies found.	Done
<u>Take photos</u> of outside of building, all sample points and any pertinent hazards or concerns.	Done
Name of Armory, POC, phone #, address and organizations in Armory  (Add Checklist to Report)	Fort Harrison, Building 517 95 <sup>th</sup> Troop Command <b>Non-Responsive</b>



## 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

## Fort Harrison

1049<sup>th</sup> Fire Fighting Platoon, Bldg. 1010  
Helena, MT 59636

17 July 14

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

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





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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-P

26 AUG 2014

MEMORANDUM THRU **Non-Responsive** DSS, 1956 Mt. Majo St., Room 1009, Helena, MT 59636

FOR Commander, Fort Harrison 1049<sup>th</sup> Fire Fighting Platoon, Bldg. 1010 Helena, MT 59636

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for Fort Harrison 1049<sup>th</sup> Fire Fighting Platoon, Bldg. 1010 Helena, MT on 17 JUL 2014.

1. References. See survey report.

2. General.

a. At the request of the NGB Industrial Hygiene, Southwest (IHSW) Region, an Industrial Hygiene Site Assistance Visit and cursory review of safety related items and programs was conducted at the Fort Harrison 1049<sup>th</sup> Fire Fighting Platoon, Bldg. 1010 Helena, MT on 17 JUL 2014.

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

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

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

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

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (SAV) for the Fort Harrison 1049<sup>th</sup> Fire Fighting Platoon, Bldg. 1010 Helena, MT on 17 JUL 2014

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

a. SCBA compressor trailer needs a placard, warning sign, stating this equipment is a noise hazard and hearing protection is required when operating. (para. 4.7) (RAC 3)

b. Conduct a facility survey to identify Asbestos Containing Material (ACM) within the facility and develop ACM Management Plan. Conduct awareness training to all personnel who occupy the facility regarding the findings and the ACM Management Plan. The survey may have been completed, however, at the time of this assistance visit awareness training, ACM identification, or an ACM Management Plan was not available. (para. 5.3) (RAC 3)

c. Inspect fire extinguishers monthly and undergo annual maintenance checks; maintain documentation on the extinguishers tag. (para. 7.5) (RAC 3)

d. Develop and implement a written Hazard Communication Program (HAZCOM). (para. 6.1) (RAC 4)

e. Ensure that all appropriate personnel receive HAZCOM training and maintain documentation indicating this training has been conducted. (para. 6.2) (RAC 4)

f. Dispose of disposable respirator and maintain PPE in a sanitary and reliable condition; store in areas away from potential hazards. (para. 7.5 (3)) (RAC 3)

g. Relocate materials to allow unobstructed access to electrical panels and to ensure safe operation. (para. 7.5 (2)) (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.



**SUBJECT:** Executive Summary for Industrial Hygiene Site Assistance Visit (SAV) for the Fort Harrison 1049<sup>th</sup> Fire Fighting Platoon, Bldg. 1010 Helena, MT on 17 JUL 2014

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

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

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

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

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

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

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

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

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 Montana 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.



SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (SAV) for the Fort Harrison 1049<sup>th</sup> Fire Fighting Platoon, Bldg. 1010 Helena, MT on 17 JUL 2014

8. IHSW recommends the Senior Unit Commander of this Facility and any Co-Tenant Organizations or Units, review and provide assistance with implementation of these recommendations. This will

educate the chain of command and allow the unit or co-tenant organizations to take any necessary precautions or actions required by them and their personnel.

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

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

**Non-Responsive**

NGB, IHSW, CIV  
Regional Industrial  
Hygiene Manager



**Industrial Hygiene Southwest**  
**Violation Inventory Log**  
**LOG OF SCHEDULE OF CORRECTIVE ACTION - COMPLIANCE WITH SAFETY AND HEALTH STANDARDS**  
**1049th Fire Fighting Platoon, Building 1010, Fort Harrison located in Helena, Montana**

CONTROL NUMBER <input type="checkbox"/> CLOSED	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/INCOIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
MTBldg1010-071714-4.7	The SCBA Compressor Trailer was not properly labeled to state that hearing protection is required while in operation	Fort Harrison Readiness Center (Building 1010)	3	Post warning placards on the trailer to communicate Noise Hazardous equipment & requirement for hearing protection					DA PAM 40-501, Ch 1-4(f)(1)
MTBldg1010-071714-5.3	Suspected Asbestos-Containing building materials; inspection, re-inspection, & Hazard Management Plan	Fort Harrison Readiness Center (Building 1010)	3	Conduct a facility survey to identify & assess extent of asbestos hazards; develop & implement an Asbestos Hazard Management Plan					AR 420-1, 5-24b, c, & d
MTBldg1010-071714-6.1	Written Emergency Action Program was not available	Fort Harrison Readiness Center (Building 1010)	4	Develop & implement a written Emergency Action Program					29 CFR 1910.38(b) & AR 385-10, 16-2d(5)
MTBldg1010-071714-6.1	Written Hazard Communication (HAZCOM) Program was not available	Fort Harrison Readiness Center (Building 1010)	4	Develop & implement a written HAZCOM Program					29 CFR 1910.1200 (e)(1) & AR 385-10, 16-2d(2)
MTBldg1010-071714-6.2	Emergency Action Plan / evacuation training was not provided / documented	Fort Harrison Readiness Center (Building 1010)	4	Ensure site personnel receive emergency preparedness training & maintain documentation indicating this training has been conducted					29 CFR 1910.38 (e)&(f)

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**Industrial Hygiene Southwest**  
**Violation Inventory Log**  
**LOG OF SCHEDULE OF CORRECTIVE ACTION - COMPLIANCE WITH SAFETY AND HEALTH STANDARDS**  
**1049th Fire Fighting Platoon, Building 1010, Fort Harrison located in Helena, Montana**

CONTROL NUMBER <input type="checkbox"/> CLOSED	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/INCOIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
MTBldg1010-071714-6.2	Hazard Communication (HAZCOM) Program training was not provided/ documented	Fort Harrison Readiness Center (Building 1010)	4	Ensure site personnel receive HAZCOM training & maintain documentation indicating this training has been conducted					29 CFR 1910.1200 (h)
MTBldg1010-071714-7.5 (1)	Portable fire extinguishers at the facility were not being inspected monthly.	Fort Harrison Readiness Center (Building 1010)	3	Visually inspect fire extinguishers monthly & undergo annual maintenance checks; maintain documentation of these on the inspection tag					29 CFR 1910.157(e)
MTBldg1010-071714-7.5 (2)	Access to the electrical panel in the mechanical room was blocked by buckets.	Building 1010, Mechanical Room	4	Relocate materials to allow unobstructed access to electrical panels & to ensure their safe operation					29 CFR 1910.303 (g)(1)
MTBldg1010-071714-7.5 (3)	Disposable respirator was found in the mechanical room left out in the open and stored by its strap.	Building 1010, Mechanical Room	3	Dispose of the respirator and maintain PPE in a sanitary & reliable condition; store in areas away from potential hazards					29 CFR 1910.132 (a)

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## ***ARMORY***

### **CLEANUP & FOLLOW-UP HOUSEKEEPING RECOMMENDATIONS**

#### **Materials Needed:**

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

#### **Disposal of Waste Water and Cleaning Materials:**

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

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

**Post-Cleanup Precautionary Measures:**

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

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

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

**Initial Armory Cleanup:**

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



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

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

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

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

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

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

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



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

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

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

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

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



**INDUSTRIAL HYGIENE SITE ASSISTANCE VISIT (IHSV)**

**1049<sup>TH</sup> FIRE FIGHTING PLATOON - BUILDING 1010**

**FORT HARRISON  
HELENA, MONTANA 59636**

**July 17, 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.IH1449.23**

**Non-Responsive**

*Reviewed by:*

**Non-Responsive**

**Non-Responsive**





**INDUSTRIAL HYGIENE SITE ASSISTANCE VISIT (IHSV)**

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## EXECUTIVE SUMMARY

On July 17-18, 2014, [Non-Responsive] Certified Industrial Hygienist (CIH), and [Non-Responsive] Industrial Hygiene Technician, both with Network Environmental Systems, Inc. (NES), conducted an Industrial Hygiene Site Assistance Visit (IHSAV) at the Building 1010, occupied by the 1049<sup>th</sup>, 1050<sup>th</sup>, 1051<sup>st</sup> and 1052<sup>nd</sup> Fire Fighting Detachments, and located at Fort Harrison in Montana. The primary point of contact (POC) for information gathered during this survey was [Non-Responsive] who may be reached by phone at (406) 324-3492 or by email at [Non-Responsive].

The objectives of this IHSAV were to:

- Evaluate work processes conducted within the facility;
- Review hazardous material storage and use procedures;
- Collect area and breathing zone air samples;
- Collect metal surface wipe samples;
- Measure the volumetric flow of exhaust ventilation systems;
- Assess potentially noise hazardous areas;
- Measure illumination levels;
- Collect indoor air quality (IAQ) data;
- Evaluate existing safety hazards;
- Inspect and evaluate the indoor firing range, active or converted (if present);
- Inspect and evaluate the paint booth operation and systems (if present);
- Evaluate the facility for potential asbestos, lead, and mold hazards;
- Review safety policies/programs, training, and record keeping; and
- Conduct Hazard Assessments (HA's).

Significant findings for this IHSAV 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] deserves recognition for assisting with this IHSAV. [Non-Responsive] was helpful in providing information, access to the facility and answering questions. The details within this report are a direct result of the assistance provided by the [Non-Responsive] personnel.



## 1.0 INTRODUCTION

On July 17-18, 2014, **Non-Responsive** CIH, and Andrew Durst, Industrial Hygiene Technician, both with NES, conducted an IHSAV at the Building 1010, occupied by the 1049<sup>th</sup>, 1050<sup>th</sup>, 1051<sup>st</sup> and 1052<sup>nd</sup> Fire Fighting Detachments, and located at Fort Harrison in Montana. The POC for information gathered during this survey was **Non-Responsive** who may be reached by phone at (406) 324-3492 or by email at **Non-Responsive**.

## 1.1 Objectives

The primary objective of the IHSAV was to evaluate the occupational environment of the areas within the facility 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 IHSAV 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:

- Evaluate work processes conducted within the facility;
- Review hazardous material storage and use procedures;
- Collect area and breathing zone air samples;
- Collect metal surface wipe samples;
- Measure the volumetric flow of exhaust ventilation systems;
- Assess potentially noise hazardous areas;
- Measure illumination levels;
- Collect indoor air quality (IAQ) data;
- Evaluate existing safety hazards;
- Inspect and evaluate the indoor firing range, active or converted (if present);
- Inspect and evaluate the paint booth operation and systems (if present);
- Evaluate the facility for potential asbestos, lead, and mold hazards;
- Review safety policies/programs, training, and record keeping; and
- Conduct Hazard Assessments (HA's).

## 2.0 PROCESS DESCRIPTION

The Fort Harrison Readiness Center (Building 1010) is occupied by the 1049<sup>th</sup>, 1050<sup>th</sup>, 1051<sup>st</sup> and 1052<sup>nd</sup> Fire Fighting Detachments. This facility was a single-story, masonry block constructed building consisting of the following: offices, storage room, a kitchen/break area, restrooms, and five (5) vehicle bays, each with a ceiling mounted mechanical roll-up door. General administrative duties are conducted in the offices. No vehicle maintenance is performed in bays 1-5, bays are only used for vehicle and fire support equipment trailer storage.

In addition to Building 1010, a second facility, a Quonset Hut located approximately 5 blocks from the Readiness Center, is used for vehicle storage. The Hut is a large, steel constructed structure with one mechanical roll-up door. Its primary purpose was to store fire equipment and fire fighting vehicles including: three (3) tanker trucks, three (3) Tactical Fire Fighting Trucks (TFFT) and various equipment stored in cages.

Building 1010 is located North of Highway 12 and west of Interstate 15 on the Fort Harrison Montana National Guard Installation. There are adjacent National Guard facilities to the north and east of the Readiness Center. The south has a fenced, open grassy field. To the west is a grassy field with trees.

The date the facility was constructed and square footage of the facility were not known by the personnel onsite. The primary unit assigned to the facility was the 1049<sup>th</sup> Fire Fighting Detachment. The 1050<sup>th</sup>, 1051<sup>st</sup>, and 1052<sup>nd</sup> Fire Fighting Detachments were co-tenants to the facility. The facility operates from 0800 to 1700. There were a total of two (2) full time guard members assigned to the facility.

NES was not provided with and did not observe any records indicating a previous IHSAV had been conducted at the Readiness Center.



### 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 Personal Breathing Zone Air Sampling

NES did not conduct personal breathing zone air sampling during this IHSAV as no work processes were conducted where NES could conduct such sampling.

#### 3.2 Indoor Air Quality

Carbon dioxide (CO<sub>2</sub>) 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 CO<sub>2</sub>, water vapor, and other bio effluents during respiration. The American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE), in their Standard 62.1-2013, *Ventilation for Acceptable Air Quality*, recommend maintaining CO<sub>2</sub> below a concentration that is 700 parts per million (ppm) above outdoor levels. Outside CO<sub>2</sub> concentrations are typically about 350 ppm. Providing sufficient ventilation to maintain steady-state CO<sub>2</sub> 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. According to ASHRAE, in their standard 55-2010, *Thermal Environmental Conditions for Human Occupancy*, indoor temperatures are recommended to range 68-74° Fahrenheit (F) during the winter and 73-79 °F in the summer. Relative humidity indicates the amount of moisture in the air. ASHRAE in their Standard 62.1-2013, recommends maintaining humidity levels below 65%.

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



### 3.3 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 facility using a TSI Q-Trak Meter, model 8551. A copy of the annual calibration certificate for this instrument is located in Appendix H.

### 3.4 Metal Wipe Sampling

Lead dust may be introduced into a facility from work processes, facility finishes, consumer products, or other sources. Lead wipe samples were collected from horizontal work and floor surfaces in various locations throughout the facility to evaluate the potential presence of lead-contaminated dust. Ghost Wipe™ brand wipes were used by wiping a one (1) square foot (ft<sup>2</sup>) area. 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.

### 3.5 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 observed throughout the facility were in good and intact condition. No peeling paint was observed during this IHS AV and thus no bulk samples were collected.

### 3.6 Exhaust Ventilation Survey

No exhaust ventilation systems were present in the facility to be evaluated during this IHS AV.

### 3.7 Personal Noise Dosimetry and Sound-Level Measurements

Personal noise dosimetry was not performed during this IHS AV. Sound-level measurements were collected from identified specific noise sources located within this facility by using a Quest Sound Level Meter in the A-weighted decibel (dBA) range, using the slow meter response setting. The sound level meter calibration was verified in the field using a Quest QC-10 calibrator. Copies of annual calibration certificates for these instruments are located in Appendix H.

### 3.8 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.

### 3.9 Equipment Used

The following equipment was used for this survey:

Type	Model Number	Serial Number	Calibration Date
TSI Q-Trak	8551	51380	Oct 2013
Quest Sound Level Meter	SLM-2	BIH090008	Nov 2013
Quest Sound Calibrator	QC-10	00279019	June 2014
Konica Minolta Light Meter	TL-1	00279019	June 2014

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

### 3.10 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.



summary of CO measurements collected is provided in Appendix E. The vehicle storage bay in Building 1010 had a CO alarm installed.

#### 4.4 Metal Wipe Sampling

Wipe samples for lead dust were collected from horizontal surfaces in selected areas of Building 1010 to determine if housekeeping efforts have been successful. 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. This criterion is applied to any areas of a facility that may be used by the public for nonmilitary functions. These areas include: converted indoor firing ranges; drill halls; locker rooms; and fitness areas. Areas of a facility which are not expected to be used by the public are expected to be, "maintained as free as practicable of accumulations of lead," as specified by the Occupational Safety & Health Administration (OSHA) in 29 CFR 1910.1025 (h)(1). The Army National Guard has determined lead concentrations less than 200  $\mu\text{g}/\text{ft}^2$  is practicable for maintenance type facilities. This criterion is applied to areas such as maintenance bays and tool rooms, which are not routinely accessible to the general public.

A total of five (5) lead wipe samples were collected during the IHSAV to be analyzed in accordance with NIOSH Method 7300, modified for Ghost Wipes<sup>TM</sup>. Samples were collected from the following locations: kitchen/break room floor, vehicle bay 5 floor, vehicle bay 3 floor, vehicle bay 1 floor and the commander's office floor. Photographs were taken of each sample 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 Area	Sample Location	Results ( $\mu\text{g}/\text{ft}^2$ )	ARNG/HUD Standard
71714-1010-01	Kitchen / Break room	Floor	3.5	$\leq 40 \mu\text{g}/\text{ft}^2$
71714-1010-02	Vehicle Bay 5	Floor	6.8	$< 200 \mu\text{g}/\text{ft}^2$
71714-1010-03	Vehicle Bay 3	Floor	4.7	$< 200 \mu\text{g}/\text{ft}^2$
71714-1010-04	Vehicle Bay 1	Floor	27	$< 200 \mu\text{g}/\text{ft}^2$
71714-1010-05	Commander's Office	Floor	4.6	$\leq 40 \mu\text{g}/\text{ft}^2$

**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 concentrations in the all of areas sampled, and suggest housekeeping efforts are sufficient.

#### 4.5 Painted Surface Evaluation

The painted surfaces observed throughout the facility were in good and intact condition. No peeling paint was observed during this IHS AV and thus no bulk samples were collected.

#### 4.6 Exhaust Ventilation Survey

No exhaust ventilation systems were present in the facility to be evaluated during this IHS AV.

#### 4.7 Personal Noise Dosimetry and Sound Level Measurements

Personal noise dosimetry was not performed during this IHS AV. A sound level measurement was collected during the operation of the SCBA compressor trailer. The measurement was recorded into the appropriate DD 2214 Form. A copy of the completed DD 2214 Form is provided in Appendix O of this report. A summary of measurements collected is provided in Table 2.

**Table 2:** Summary of sound level measurements

Work Activity	Noise Source	Noise Level Measurement (dBA)
SCBA Compressor Trailer Operation (~3 ft. from trailer)	Liberty I- Model 6100 SCBA Charging System.	93

There was no signage present on the mobile trailer stating that hearing protection is required while in operation.

#### 4.8 Illumination Level Monitoring

Illumination levels were measured throughout the facility. 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 eight (8) locations in Building 1010 and two (2) locations in the Quonset Hut. Based on the measurements collected in comparison to the above criteria, lighting was sufficient all 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 facility was conducted. This evaluation consisted of determining if a maintenance plan is in place and a visual inspection of the system. A written maintenance plan was not available, but it was reported that the HVAC systems was maintained by State Facility Maintenance Office (FMO) staff. The Building 1010 HVAC system helps to provide the facility with proper indoor air quality (IAQ); temperature, humidity and CO<sub>2</sub> levels. Air is supplied to office spaces via air handling units (AHU) and ducted ceiling supplies and returns. The vehicle storage bays and Quonset Hut each had radiant gas heaters along the ceiling to provide heat during the winter. The roll-up doors are opened during the summer to provide fresh air.

### **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 has been no historical water intrusion according to the POC. Small water stains were observed in some ceiling tiles. However, there were no visual signs of fungal growth or active water intrusion.

### **5.3 Asbestos Evaluation**

A cursory evaluation of the facility's interior and exterior 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 Building 1010 included: base cove mastic, formica counter tops in kitchen, vinyl floor tiles and associated mastic, and vinyl flooring and associated mastic. The Quonset Hut was a steel construction and did not contain any materials suspected to contain asbestos. Each of the suspect building materials observed were found to be in good condition.

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 TRAINING DOCUMENTS AND HAZARD ASSESSMENTS**

### **6.1 Written Programs & SOPs**

The facility was unable to produce any written programs or SOP's during the IHSAV.

The full-time personnel were reportedly administrative personnel. However, the detachments of the Building conduct firefighting and other emergency response. Further evaluation should be conducted to determine whether several programs, including: Confined Space, Emergency Preparedness, Hazard Communication, Hearing Conservation, PPE, Respiratory Protection, and Bloodborne Pathogens should be developed.

### **6.2 Training Documentation**

The following training documentation was found at the site with dates of the most recent training provided in parenthesis:

- Confined Space (6/10/2014)

Training was provided to the 20 M-day personnel, not just the two (2) full-time staff assigned to the facility. Training documentation consisted of sign-up sheets for personnel attending and summary of the topic covered. Hazard Communication (HAZCOM) and Emergency Action Plan training is required for all personnel.

Further evaluation should be conducted to determine whether training should be conducted for Hearing Conservation, PPE, Respiratory Protection, and Bloodborne Pathogens.

### 6.3 Hazard Assessments

Hazard assessments were not performed during this IHSAV as the primary work activity conducted at the facility was determined to be administrative support. No other work processes were identified to be conducted by staff on a regular basis that would be expected to result in an increased potential for exposure to biological, chemical, and/or physical hazards.



## **7.0 OBSERVATIONS & 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.

### **7.1 Hazardous Materials Inventory, Storage & Material Safety Data Sheets**

A review of the facility's chemical inventory and safety data sheet (SDS) file was conducted. Chemical storage areas (i.e., flammable storage cabinets and rooms) were also inspected as part of this IHSAV. A complete inventory of hazardous materials used at the facility was made available along with corresponding SDSs. A copy of the chemical inventory is provided in Appendix D. Hazardous materials are stored inside of flammable storage lockers. These materials are kept in small quantities and the storage lockers were in good condition during this IHSAV.

### **7.2 Petroleum, Oil, Lubricants Area (POL)**

The facility does not perform maintenance on vehicle. NES did not observe POL being stored onsite during the IHSAV.

### **7.3 General & Tool Supply Areas**

The general supply areas throughout the facility were well organized and in good visible condition. No tool supply area was present because no maintenance activities are performed onsite.

### **7.4 Contract (Non-DoD) Operations**

Contract (Non-DoD) operations were performed at this facility. Non-DoD contractors include the following: Refuse and Pest Control which were provided by Fort Harrison.

### **7.5 Safety Walk-Through**

NES conducted a walk-through of the facility 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. Fire extinguisher were last inspected March 2014, need to be inspected monthly.
2. Access to the electrical panel in the mechanical room was blocked by wash buckets.
3. A disposable respirator was observed in the mechanical room hanging on a PVC pipe by its strap.

## 8.0 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.

## 9.0 PROJECT APPROVAL

This IHSAV was reviewed and approved by:

**Non-Responsive**

August 25, 2014

Date

**Non-Responsive**

August 27, 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 Exposure 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  
BUILDING 1010, FORT HARRISON  
HELENA, MT  
JULY 17, 2014**



**Photo 1:** Exterior signage at Building 1010, Fort Harrison.



**Photo 2:** View of the front of Building 1010 and vehicle bays 2 and 3.



**PHOTO LOG**  
**BUILDING 1010, FORT HARRISON**  
**HELENA, MT**  
**JULY 17, 2014**



**Photo 3: Interior view of vehicle bay 2.**



**Photo 4: Interior view of vehicle bay 3.**

**PHOTO LOG  
BUILDING 1010, FORT HARRISON  
HELENA, MT  
JULY 17, 2014**



**Photo 7: Interior view of kitchen / break room.**



**Photo 8: Lead wipe sample (71714-1010-01) collected from floor of kitchen / break room.**

**PHOTO LOG**  
**BUILDING 1010, FORT HARRISON**  
**HELENA, MT**  
**JULY 17, 2014**



**Photo 9:** Lead wipe sample (71714-1010-02) collected from floor of vehicle bay 5.



**Photo 10:** Lead wipe sample (71714-1010-03) collected from floor of vehicle bay 3.



**PHOTO LOG  
BUILDING 1010, FORT HARRISON  
HELENA, MT  
JULY 17, 2014**



**Photo 13:** Breaker panel located in mechanical room; blocked by buckets on floor.



**Photo 14:** Improperly stored PPE in mechanical room.

**PHOTO LOG  
BUILDING 1010, FORT HARRISON  
HELENA, MT  
JULY 17, 2014**



**Photo 15: Supply and cleaning supply storage area.**



**Photo 16: View to north of Building 1010; Rome Avenue.**

**PHOTO LOG**  
**BUILDING 1010, FORT HARRISON**  
**HELENA, MT**  
**JULY 17, 2014**



**Photo 17:** View to south of building.



**Photo 18:** View to west of building.



**PHOTO LOG**  
**BUILDING 1010, FORT HARRISON**  
**HELENA, MT**  
**JULY 17, 2014**



**Photo 19: View to east of building.**

**PHOTO LOG  
QUANSET HUT, FORT HARRISON  
HELENA, MT  
JULY 17, 2014**



**Photo 1:** Exterior view of Quonset Hut located approximately 5 blocks from Building 1010.



**Photo 2:** Interior view of Quonset Hut; storage of fire fighting vehicles and equipment.

**PHOTO LOG  
QUANSET HUT, FORT HARRISON  
HELENA, MT  
JULY 17, 2014**



**Photo 3: Generator and trailer stored inside the Quonset Hut.**



**Photo 4: Tanker truck stored inside the Quonset Hut.**



**PHOTO LOG**  
**QUANSET HUT, FORT HARRISON**  
**HELENA, MT**  
**JULY 17, 2014**



**Photo 5:** Quonset Hut SCBA storage.



**Photo 6:** Storage area.

**PHOTO LOG  
QUANSET HUT, FORT HARRISON  
HELENA, MT  
JULY 17, 2014**



**Photo 7: View to north of Quonset Hut.**



**Photo 8: View to south of Quonset Hut.**

**PHOTO LOG**  
**QUANSET HUT, FORT HARRISON**  
**HELENA, MT**  
**JULY 17, 2014**



**Photo 9: View to west, adjacent building.**



## Print Inventory

Print Inventory

Cancel

Unit: 1049th FFTG

Storage: FL 02

Month: 3/1/2014

SLN	Item	NSN	Manufacturer	MSDSID	Quantity	Unit of Issue	Shelf Life	HCC
01	Fuel Cans	0000	Conoco		2	GAL		
02	Lubricant	0000	Conoco		1	5 GAL		
03	Buckets of Lubricatin oil	0000	Conoco		3	GAL		
04	Boiled Linseed Oil	0000	Conoco		3	GAL		
05	Flexable Funnels	0000	Funnels		4	EA		
06	Gass Cans	0000	Conoco		3	5 L		
07	Diesel Starting Fuel Cans	0000	Conoco		11	18 Oz		
08	Hydrolic fluid	0000	Hydrolic		2	GAL		
09	Automatic Transmission Fluis	0000	Transmision Fluid		8	QT		
10	Lighter Fluid	0000	Lighter Fluid		1	QT		
11	Engine Oil	0000	Conoco		9	QT		
12	Fluid Stabilizer	0000	Stabilizer		1	4 OZ		
13	2 Cycle Engine Oil	0000	Conoco		4	QT		
14	Weapon oil	0000	US army		1	12 Oz		

# 1049th-1052nd FFTG Fire Escape Plan

Green = First Route

Red = Alternate Route



**IAQ MEASUREMENTS**  
**BUILDING 1010, FORT HARRISON**  
**HELENA, MT**  
**JULY 17, 2014**

Location	CO <sub>2</sub> max permissible level 1,236 ppm	Temperature permissible range 68 - 75°F	RH% permissible range 30-60%	CO Max permissible 200 ppm STEL
Kitchen	536	85.2	44.2	2
Office	647	76.6	40.1	2
Vehicle Bay 5	630	76.2	42.9	2
CDR Office	640	78.3	37.6	2
Vehicle Bay 1	454	77.5	46.1	2
Storage Area 1	700	75.9	45.4	2
Storage Area 2	592	75.2	54.1	2
Vehicle Bay 3	504	73.9	57.8	2
Outside	536	85.2	44.2	2

**IAQ MEASUREMENTS**  
**QUONSET HUT, FORT HARRISON**  
**HELENA, MT**  
**JULY 17, 2014**

Location	CO <sub>2</sub> max permissible level 1,236 ppm	Temperature permissible range 68 - 75°F	RH% permissible range 30-60%	CO Max permissible 200 ppm STEL
East End	448	80.8	47.2	4
West End	507	77.5	49.4	4
Outside	536	85.2	44.2	2

**BOLD = Outside of permissible range**

CO<sub>2</sub> = Carbon Dioxide

CO = Carbon Monoxide

°F = Fahrenheit

RH = Relative Humidity



**ILLUMINATION SURVEY  
BUILDING 32, FORT HARRISON  
HELENA, MT  
JULY 17, 2014**

Room	Location	Light Measurement (FC)	Minimum Lighting Requirement (FC)
Kitchen	Table Top, Middle of room	86.5	≥30
Office	Desk Top, Middle of room	62.3	≥50
Vehicle Bay 5	Waist Level, Middle of bay (One bay door open)	75.6	≥30
CDR Office	Desk Top, Middle of room	50.9	≥50
Vehicle Bay 1	Waist Level, Middle of bay	60.2	≥30
Storage Area 1	Waist Level, Middle of room	21.0	≥10
Storage Area 2	Waist Level, Middle of room	30.4	≥10
Vehicle Bay 3	Waist Level, Middle of bay	83.1	≥30

**ILLUMINATION SURVEY  
QUONSET HUT, FORT HARRISON  
HELENA, MT  
JULY 17, 2014**

Room	Location	Light Measurement (FC)	Minimum Lighting Requirement (FC)
East End	Waist Level (One bay door open)	70.9	≥30
West End	Waist Level (One bay door open)	86.3	≥30

\*FC = foot candle measurement  
**Bold** = Insufficient Lighting



BEST AVAILABLE COPY  
Facility Information Form  
Revised: December 4, 2013



23

General Facility: **Non-Responsive**  
IH(s): **Non-Responsive**  
Date(s) of Previous IHSAs: Not Avail.  
Date(s) of IHSAs: July 17-18, 2014  
Facility Name: H. Harrison, RC/B/1010  
Address: above  
1049<sup>th</sup> Fire Fighting Platoon  
Fa: **Non-Responsive**  
Safe: Evacuation

No Person(s): 2 Admin: 2 Maint: 0 Name / Phone Number / email: Sam - 5pm  
(Include status - AGR, Fed, Tech., IDR, State or Contract Employee)  
Unit(s): 1049<sup>th</sup> Fire Fighting Platoon Co-Tenant(s): See below Build Date: unknown  
1050<sup>th</sup>, 1051<sup>st</sup>, 1052<sup>nd</sup> Fire Fighting Detachment List All: Detachment Renovation: unknown  
Primary work activities at Facility: Fire Fighting Building for 1049<sup>th</sup> FF Tactical Group (FFTG)

Written Health & Safety Programs / SOPs

Program	Program Needed	Have Program	Date of Last Training	# Enrolled	Comments
Confined Space	Yes	No	June 10, 14	20	
Emergency Preparedness	Yes	No			
Hazard Communication	Yes	No			
Hearing Conservation	Yes	No			
PPE	Yes	No			
Respiratory Protection	Yes	No			
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

BBP = prog. needed

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>NA</u>	Laundry	<u>NA</u>
Tools	<u>NA</u>	Pest Control	<u>POST</u>
Rags	<u>NA</u>	Hazardous Waste	<u>NA</u>
Refuse	<u>POST</u>	Crane Maintenance	<u>NA</u>
Others:			





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## General Safety Compliance Assessment Form

Facility: B/1010Date: 7-17-14

Revised: September 18, 2013



23

Bloodborne Pathogens (1910.1030)	<u>Applicable</u>	Not Applicable
Waste containers	<u>Yes</u>	No
PPE available	<u>Yes</u>	No
Compressed Gases (1910.101 - .105)	<u>Applicable</u>	<u>Not Applicable</u>
Labeled (contents / empty)	<u>Yes</u>	No
Good condition	<u>Yes</u>	No
Proper storage (O <sub>2</sub> vs. flam, chained, upright, etc.)	<u>Yes</u>	No
Flammable cylinders grounded	<u>Yes</u>	No
Confined Space (1910.146)	<u>Applicable</u>	Not Applicable
Labeled w/ "Danger" sign(s)	<u>Yes</u>	No
Calibrated direct reading instruments	<u>Yes</u>	No
Entry materials / supplies	<u>Yes</u>	No
Electrical Safety (1910.301 - .335)	<u>Applicable</u>	<u>Not Applicable</u>
GFCI plugs	<u>Yes</u>	No
Loose / hazardous wires	<u>Yes</u>	No
Electrical panels unobstructed & labeled	<u>Yes</u>	No
High voltage (>600V); signage / work	<u>Yes</u>	No
Emergency Eyewash / Shower (1910.151)	<u>Applicable</u>	<u>Not Applicable</u>
Inspection records	<u>Yes</u>	No
Unobstructed	<u>Yes</u>	No
Properly protected (caps over eyewash, etc.)	<u>Yes</u>	No
Emergency Preparedness (1910.34 - .38)	<u>Applicable</u>	Not Applicable
Alarm system	<u>Yes</u>	No
Exits marked / free of obstruction	<u>Yes</u>	No
Ergonomics (Gen. Duty Clause)	<u>Applicable</u>	<u>Not Applicable</u>
Workplace evaluation conducted	<u>Yes</u>	No
Hazard control / precautions in place	<u>Yes</u>	No
Fall Protection (1910.23 - .28 & 1926.501-.503)	<u>Applicable</u>	<u>Not Applicable</u>
Elevations of 4ft have railings / toeboard	<u>Yes</u>	No
Fall protection is in good condition	<u>Yes</u>	No
Training received / documented	<u>Yes</u>	No
Fire Safety (1910.39 & 1910.157)	<u>Applicable</u>	Not Applicable
Fire extinguishers present	<u>Yes</u>	No
Fire extinguishers properly inspected	<u>Yes</u>	No
Sprinklers unobstructed	<u>Yes</u>	No
Training received / documented	<u>Yes</u>	No
Forklift, Jacks & Industrial Trucks (1910.178)	<u>Applicable</u>	<u>Not Applicable</u>
Labeled with inspection / service date	<u>Yes</u>	No
Training received / documented	<u>Yes</u>	No
Overhead protection	<u>Yes</u>	No
Hand & Powered Tools (1910.241 - .244)	<u>Applicable</u>	<u>Not Applicable</u>
Proper guarding & controls	<u>Yes</u>	No
3-prong power cord	<u>Yes</u>	No
Inspections	<u>Yes</u>	No
Hazard Communication (1910.1200)	<u>Applicable</u>	Not Applicable
Chemical inventory	<u>Yes</u>	No
Materials labeled	<u>Yes</u>	No
MSDS available	<u>Yes</u>	No



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

23

Five lead wipe samples collected from drill floor (take samples from dusty horizontal floor surfaces)	Done
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)	None
Is there a converted indoor firing range? If so collect additional wipe samples IAW the SOW.	None
Is there any peeling paint? Take bulk sample if able.	None
Are there any signs of water damage or mold?	yes, water staining on 2x4 CTs observed
Any suspected ACM? Where and what condition is it in. Bulk sample if able.	yes, see notes
Quality of housekeeping	Good
HVAC maintenance plan in place?	Resides w/ FMO
Overall condition of HVAC system	Good, no occupant complaints
Obtained CO2, Temp, RH monitoring	Done
HAZMAT inventory on hand (make copies for the report), MSDS available for all materials.	Recd. Copy
HAZMAT storage, Condition of lockers, if outside storage building is used is it ventilated and does it meet OSHA standards.	yes, see pic

Evaluate Kitchen Stove Hood Flow if Present IAW NFPA Standard 96.	NA
Collect Source Noise Measurements of Kitchen Appliances and Document Using DD 2214	NA
Conduct a safety walkthrough of entire facility document any safety deficiencies found.	Done
<u>Take photos</u> of outside of building, all sample points and any pertinent hazards or concerns.	Done
Name of Armory, POC, phone #, address and organizations in Armory	See FIF
(Add Checklist to Report)	(Add Checklist to Report)

Fire alarm in working condition - -not usually in place in older armories	None
Fire extinguishers in place and properly identified and mounted	yes
Evidence of monthly fire extinguisher inspections	only No, last monthly inspection was March 2014
Annual fire extinguisher inspections tags current	yes
Are eye wash stations available in areas where hazardous materials are used and are they inspected weekly (inspections must be documented)	N/A
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)	Training Recd at AT
Any Photo labs	None
Any hazardous noise sources	
Light levels checked throughout building	Done
Breaker panels properly labeled with no exposed wiring	No Panels Observed
Check building occupancy 1. How many military personnel, how many civilian personnel 2. What types of units occupy facility, i.e. Administrative, Maintenance, etc.?	Military (Full time) = 2 Civ. = 0 Units: 8 Fire Fighting
Any civilian activities in armory (cub scouts, classes, day care, parties etc)	None
Obtain two lead air samples	On IHSW Request Only N/A





## Type Sampling Summary Form

Facility: 8/1010

Collected By: Non-Responsive

Date &amp; Time: 7-17-14 2pm

Revised: September 18, 2013



Note See Site Map

Sample Information		Sample Area	Area Units	Analyte(s)
1	Sample Number:	71714-1010-01	1 ft <sup>2</sup>	Lead
	Sample Location:	Breaker Room Floor		
2	Sample Number:	71714-1010-02		
	Sample Location:	Vehicle Bay #3, concrete floor		
3	Sample Number:	71714-1010-03		
	Sample Location:	Vehicle Bay #3, concrete floor		
4	Sample Number:	71714-1010-04		
	Sample Location:	Vehicle Bay #1, concrete floor		
5	Sample Number:	71714-1010-05	↓	↓
	Sample Location:	Commander's Office, VAF Floor		
6	Sample Number:	71714-1010-FB	↓	↓
	Sample Location:	Field Blank		
7	Sample Number:			
	Sample Location:			
8	Sample Number:			
	Sample Location:			
9	Sample Number:			
	Sample Location:			
10	Sample Number:			
	Sample Location:			
11	Sample Number:			
	Sample Location:			
12	Sample Number:			
	Sample Location:			
13	Sample Number:			
	Sample Location:			

7/17/14 B/1010  
18

-23

Liberty I - Model 600 B.A. Charging  
System  
- Now survey of diesel engine

Eagle Safe Station SCBA Charging  
Station (Blue), electric & diesel operation,  
- currently out of service

B/3 Fire Fighting Vehicle Quonset Hut  
↳ No Bldg # Now

# Trucks

3 = Hewlett - Tender Truck

3 = TFFT - Tactical Fire Fighting Truck

Overhead natural gas radiant heater

No personnel reside in bldg, equip storage only

Steel construction Quonset hut w/  
1 mechanical roll up door at each end

Atty to **Non-Responsive** for assisting w/ the 11/5/14



July 14 B/1010  
1718

23

Vehicle bays #1-5 are used for vehicle and/or support trailer storage. No maintenance or repairs are performed in the vehicle bays, no vehicle exhaust ventilation is present.

Vehicle bays have ceiling mounted radiant heaters. Each bay is equipped with a mechanically operated roll up doors.

Five extinguishers are to be inspected monthly by the Post Engineers  
— currently no. inspection is not current



July 17, <sup>18</sup>2014

.23

Ft. Harrison, Readiness Center (RC)  
B/1010  
1049<sup>th</sup> Fire Fighting Platoon

**Non-Responsive** - 324-349.

Base core mastic  
Formica Counter tops in kitchen  
Suspect ACM = VAT, Vinyl floor in latrine  
F) Breaker panel, labeled & no exposed  
conductors, Location: Mechanical Room  
Floor  
- Panel was blocked by wash buckets  
- see pic

Mechanical Room -

- disposable respirator hanging on PVC pipe  
(see pic)

CO Alarm located in Vehicle storage bay

B/1010 is a single story, masonry block  
construction of an office, male & female latrines,  
kitchen and storage bay.

AD 7117218

- FT Harrison Bldg 1010

.2.

## Photo log -

phone

1. FT Harrison Entry

2. Mechanical RM Breaker panel

3. improper PPE storage Mechanical RM

4. PB sample #4

pics

5. " " #3

6. PB sample #2

7. " " #05

8. " " #01

9. Mobile SCBA compressor in shop -

~~Sunday - Morning~~  
~~Here~~

AD 7/17 + 18

PT Harrison Bldg 1070 123

## Findings

- mobile compressor above 85 dBA  
hearing protection required— No signage on  
compressor for hearing protection— since January
- fire extinguisher inspected once ~~needs~~  
monthly inspection

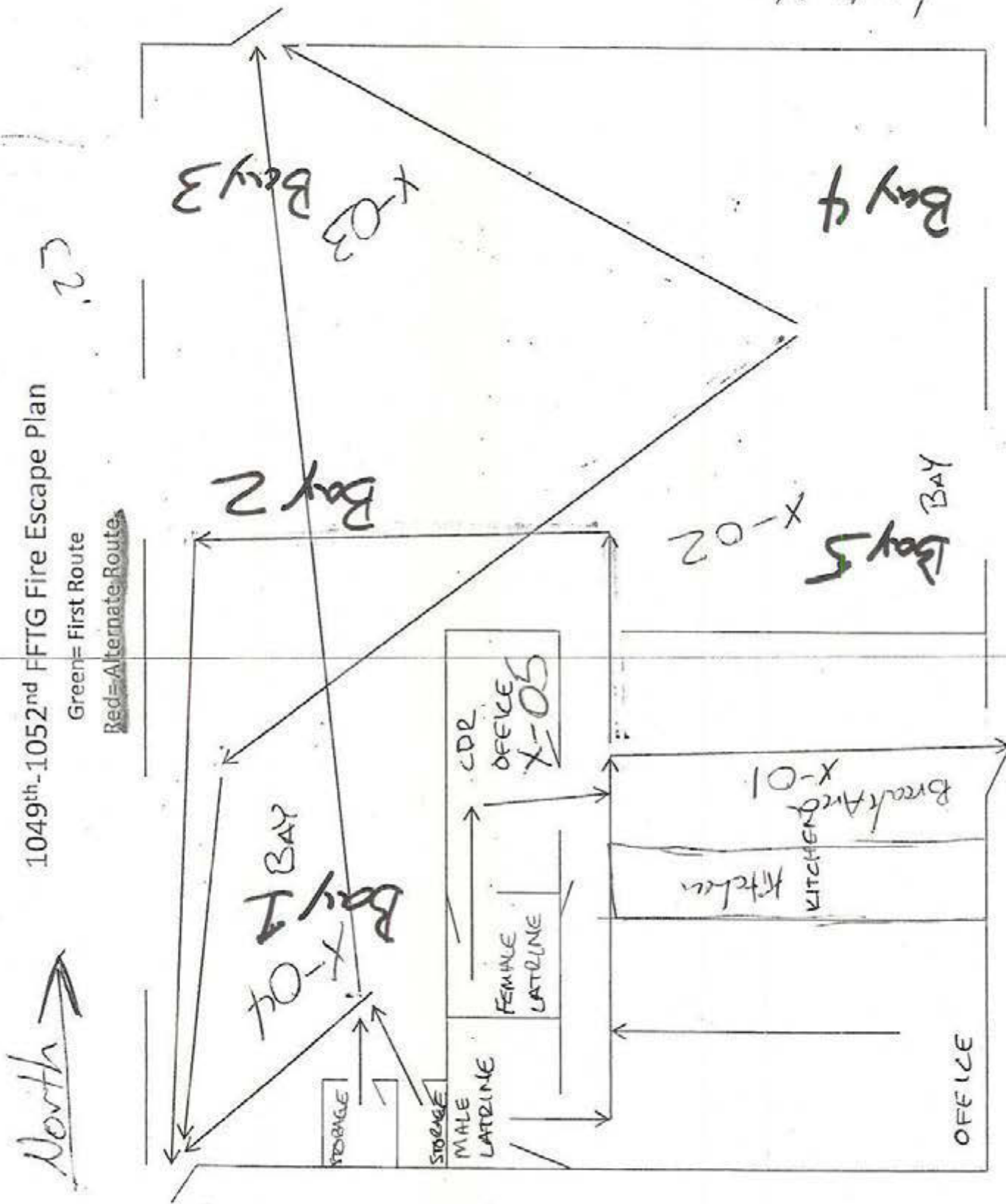


<b>Noise Survey (Sound Level Meter Survey)</b>									
1. DATE (YYYYMMDD) <b>2014/07/17</b>					2. TYPE SURVEY (ENTER CODE) 1 - INITIAL SURVEY    2 - RE-SURVEY    3 - OTHER				
3. SOUND LEVEL METER A. MANUFACTURE <b>Quest Noise pro</b>			4. MICROPHONE A. MANUFACTURE <b>Quest</b> ATTACHED TO SOUND LEVEL METER			5. CALIBRATOR A. MANUFACTURE <b>Quest</b>			
B. MODEL		C. SERIAL NO.		B. MODEL		C. SERIAL NO.		D. LAST ELECTROACOUSTIC CALIB. DATE (YYYYMMDD) <b>11-27-13</b>	
		<b>BTH 090008</b>		<b>QE 7052</b>		<b>43907</b>		<b>QC-10 BTH 090203</b>	
6. WIND SCREEN (X ONE) <input type="checkbox"/> USED <input checked="" type="checkbox"/> NOT USED					7. MEASUREMENTS OBTAINED (X ONE) <input checked="" type="checkbox"/> INDOORS <input type="checkbox"/> OUTDOORS				
8. DESCRIPTION OF AREA/DUTIES WHERE NOISE SURVEY CONDUCTED (Illustrate on additional sheet and attach to form) <b>SCBA Compressor - Mobile tailored version</b>					9. PRIMARY SOURCE OF NOISE <b>Item measured</b>				
					10. SECONDARY SOURCE OF NOISE <b>None</b>				
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 (<85 dBA)	B. PLUG OR MUFF (95-109)	C. PLUG AND MUFF (108-118)	D. PLUG + MUFF + TIME LIMIT (>118)	
<b>#1 Vehicle Bay - SCBA compressor - 3 ft from engine (Liberty F)</b>	<b>S</b>		<b>✓</b>			<b>93</b>			
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.) AREA POSTED WITH WARNING SIGN EAR MUFFS WORN <b>NO ear protection signage posted</b>									
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 OF OPERATION					Non-Responsive				

Non-Responsive

# Lead Wipe Sample Site Map .23 7/17/14

BEST AVAILABLE COPY





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Equipment List



Facility: \_\_\_\_\_  
Date: \_\_\_\_\_

Revised: September 18, 2013

Type	Model Number	Serial Number	Calibration Date
TSI Velocirac Plus	8385	02110331	July 19, 2013
TST Q-Track	8551	51380	Oct 2013
Quest Sound Level Meter	Soundpro SE/DL	BIH090008	NOV 2013
Konica Minolta Light Meter	Illuminance Meter TL-1	00279019	Jun 2014
Quest Sound Calibrator	QC-10 Calibrator	QIH090203	NOV 2013





## Certificate of Calibration



8710195 REV1

Certificate Page 1 of 2

## Instrument Identification

Company ID: 607229

PO Number: CC

Non-Responsive

NETWORK ENVIRONMENTAL SYSTEMS

Non-Responsive

1141 SIBLEY STREET

FOLSOM, CA 95630

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: IN TOLERANCE

Procedure: 33K4-4-475-1 JUN13

Remarks: REV 1 ADDED: DATA REPORT ATTACHED

Technician:

Non-Responsive

Cal Date: 02Jun2014

Cal Due Date: 02Jun2015

Interval: 12 MONTHS

Temperature: 24.0 C

Humidity: 43.0 %

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:

Non-Responsive

Service Representative

Issue Date: 0/2/2014

## Calibration Standards

NIST Traceable#	Inst. ID#	Description	Manufacturer	Model	Cal Date	Date Due
7302067	000800	STANDARD SHUNT	RUBICON	ABS 1	26Apr2013	28Apr2015
1700294966	17-1001076	6 STEEL RULE	STARETT	C416R-72	22Mar2013	22Mar2015
8095778	17-1001081	LUMINANCE STD	OPTRONIC LABS	OL 455-4	16Dec2013	16Dec2014

4570 Rivergreen Parkway • Duluth, GA 30096 • Phone: 770-813-2260 • Fax: 770-813-2262

Posted to NGB FOIA Reading Room  
May, 2018

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FOIA Requested Record #J-15-0085 (MT)  
Released by National Guard Bureau  
Page 538 of 1990



Manufacturer: KONICA MINOLTA  
 Serial Number: 00279019

Model Number: TL-1  
 Calibration Date: 6/2/2014

Function / Range	Nominal Value	As Found	Result	As Left	Result	Min	Max	Units	UNC
ILLUMINANCE									
	10	10.04	Pass	Same	Pass	9.49	10.51	fc	
	100	100.10	Pass	Same	Pass	94.9	105.1	fc	
	1000	980.00	Pass	Same	Pass	940	1060	fc	

Datasheets may contain measurements that are not covered by the Scope of Accreditation. These measurements are indicated by a pound sign (#).

\*\*\*\*\*END OF MEASUREMENT REPORT\*\*\*\*\*

Tektronix

Data Page 1 of 1



## Certificate of Calibration

Certificate No: 5502113QIH090203

Submitted By: IHSW-NGB  
10510 SUPERFORTRESS AVE  
MATHER, CA 95655

Serial Number: QIH090203  
Customer ID:  
Model: OC-10 CALIBRATOR

Date Received: 10/30/2013  
Date Issued: 11/27/2013  
Valid Until: 11/27/2014

Test Conditions:  
Temperature: 18°C to 29°C  
Humidity: 20% to 80%  
Barometric Pressure: 890 mbar to 1050 mbar

Model Conditions:  
As Found: IN TOLERANCE  
As Left: IN TOLERANCE

SubAssemblies:  
Description:

Serial Number:

Calibration Procedure: 56V981

### Reference Standard(s):

I.D. Number	Device
ET0000556	B&K ENSEMBLE
T00230	FLUKE 45 MULTIMETER

Last Calibration Date	Calibration Due
5/10/2013	5/10/2014
2/2/2012	2/2/2014

### Measurement Uncertainty:

+/- 1.1% ACOUSTIC (0.108) +/- 1.4% VAC +/- 0.012% HZ  
Estimated at 95% Confidence Level (k=2)

Calibrated By:

**Non-Responsive**

11/27/2013

Reviewed/Approved By:

11/27/2013

This report certifies that all calibration equipment used in the test is traceable to NIST or other NMI, and applies only to the unit identified under equipment above. This report must not be reproduced except in its entirety without the written approval of 3M Detection Solutions.





## Certificate of Calibration

Certificate No: 5502113BIH090008

Submitted By: INSW-NGB  
10510 SUPERFORTRESS AVE  
MATHER, CA 95055

Serial Number: BIH090008  
Customer ID:  
Model: SOUNDERO DL-2-1/3 SLM  
Test Conditions:  
Temperature: 18°C to 29°C  
Humidity: 20% to 80%  
Barometric Pressure: 890 mbar to 1050 mbar

Date Received: 10/30/2013  
Date Issued: 11/27/2013  
Valid Until: 11/27/2014

Model Conditions:  
As Found: OUT OF TOLERANCE  
As Left: IN TOLERANCE

SubAssemblies:  
Description:  
MICROPHONE Q5 7052 1/2 IN. ELECTRET  
TYPE 2 PREAMP

Serial Number:  
43907  
0908 2546

Calibration Procedure: 53V899

### Reference Standard(s):

I.D. Number	Device
ET0000556	B&K ENSEMBLE

Last Calibration Date	Calibration Due
5/10/2013	5/10/2014

### Measurement Uncertainty:

± 2.2% ACOUSTIC (0.19dB)  
Estimated at 95% Confidence Level (k=2)

**Non-Responsive**

Calibrated By: 11/27/2013

Reviewed/Approved By: 11/27/2013

This report certifies that all calibration equipment used in the test is traceable to NIST or other NMI, and applies only to the unit identified under equipment above. This report must not be reproduced except in its entirety without the written approval of 3M Detection Solutions.



## Certificate of Calibration

Certificate No: 5502113BIH090008

(A) indicates out of tolerance condition

Test Type	Nominal	Tolerance-	Tolerance+	As Found	As Left	Unit
(1/3) 315Hz	114.0	113.8	114.2		114.0	dB
(1/3) 400Hz	114.0	113.8	114.2		114.0	dB
(1/3) 500Hz	114.0	113.8	114.2		114.0	dB
(1/3) 630Hz	114.0	113.8	114.2		114.0	dB
(1/3) 800Hz	114.0	113.8	114.2		114.0	dB
(1/3) 1000Hz	114.0	113.8	114.2		114.0	dB
(1/3) 1250Hz	114.0	113.8	114.2		114.0	dB
(1/3) 1600Hz	114.0	113.8	114.2		113.9	dB
(1/3) 2000Hz	114.0	113.8	114.2		114.0	dB
(1/3) 2500Hz	114.0	113.8	114.2		114.0	dB
(1/3) 3150Hz	114.0	113.8	114.2		114.0	dB
(1/3) 4000Hz	114.0	113.8	114.2		114.0	dB
(1/3) 5000Hz	114.0	113.8	114.2		114.0	dB
(1/3) 6300Hz	114.0	113.8	114.2		114.0	dB
(1/3) 8000Hz	114.0	113.8	114.2		114.0	dB
(1/3) 10000Hz	114.0	113.8	114.2		113.9	dB
(1/3) 12500Hz	114.0	113.8	114.2		113.8	dB
(1/3) 16000Hz	114.0	113.8	114.2		113.8	dB
(1/3) 20000Hz	114.0	113.7	114.3		113.7	dB

\* indicates non accredited



MICRO PRECISION CALIBRATION  
22635 INDUSTRIAL PLACE  
GRASS VALLEY CA 95949  
530-268-1860

## Certificate of Calibration

Date: Oct 10, 2013

Cert No. 220081202165631

**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: **Non-Responsive**  
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  
**Non-Responsive**

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 C8D 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 whole without the prior written approval of the issuing MPC lab.





## Certificate of Calibration



7583129

Certificate Page 1 of 3

## Instrument Identification

PO Number

Non-Responsive

Company ID: 607229

INDUSTRIAL HYGIENE SW

Non-Responsive

10510 SUPERFORTRESS AVE  
SUITE C  
MATHER, CA 95655

Instrument ID: 02110331

Manufacturer: TSI INCORPORATED

Description: AIR VELOCITY METER

Model Number: 8385A

Serial Number: 02110331

Air Velocity Accuracy:  $\pm 3.0\%$  Rdg. or  $\pm 3$  FPM whichever is greaterTemperature Accuracy:  $\pm 0.3^\circ\text{C}$  ( $\pm 0.5^\circ\text{F}$ )Pressure Accuracy:  $\pm 1.0\%$  of Reading + 0.005 inch water

## Certificate Information

Reason For Service: CALIBRATION

Type of Cal: NORMAL

As Found Condition: IN TOLERANCE

As Left Condition: LEFT AS FOUND

Procedure: 33K6-4-1769-1 AIR VELOCITY, TEMPERATURE, FLOW  
METERS

Remarks: A test uncertainty ratio (TUR) of 3:1 was maintained for air velocity. Data report attached.

Technician:

Non-Responsive

Cal Date: 19Jul2013

Cal Due Date: 19Jul2014

Interval: 12 MONTHS

Temperature: 23.6 C

Humidity: 48.2 %

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).

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Approved By

Service Representative

Non-Responsive

## Calibration Standards

NIST Traceable#	Inst. ID#	Description	Manufacturer	Model	Cal Date	Date Due
8840333	01-0287	RESONANT SENSOR BAROMETER	DRUCK	DPI 141	10Dec2012	10Dec2013
7099475	01-0818	HUMIDITY & TEMPERATURE METER	VAISALA	HM34C	01Mar2013	01Mar2014
7048264	01-0858	PRESSURE MODULE (10 INCH H <sub>2</sub> O $\pm 0.08\%$ FS)	ASHCROFT	AQS-1	07Feb2013	07Feb2014

**TABLE 1**  
**LEAD WIPE SAMPLE RESULTS**  
**BUILDING 1010, FORT HARRISON**  
**HELENA, MT**  
**JULY 17, 2014**

Sample Number	Sample Area / Location	Results ( $\mu\text{g}/\text{ft}^2$ )	ARNG Standard ( $\mu\text{g}/\text{ft}^2$ )
71714-1010-01	Kitchen / Break room; floor	3.5	$\leq 40 \mu\text{g}/\text{ft}^2$
71714-1010-02	Vehicle Bay 5; concrete floor	6.8	$< 200 \mu\text{g}/\text{ft}^2$
71714-1010-03	Vehicle Bay 3; concrete floor	4.7	$< 200 \mu\text{g}/\text{ft}^2$
71714-1010-04	Vehicle Bay 1; concrete floor	27	$< 200 \mu\text{g}/\text{ft}^2$
71714-1010-05	Commander's Office; floor	4.6	$\leq 40 \mu\text{g}/\text{ft}^2$

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

ARNG = Army National Guard

ND = none detected at or above the analytical detection limit

**Bold** = Above ARNG Standard limit



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## ANALYTICAL REPORT

Report Date: July 30, 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: 34-1420593

Client Project ID: Ft Harrison Bldg 1010

Purchase Order: 013 IH1716.23

Project Manager: **Non-Responsive**

## Analytical Results

Sample ID: <b>71714-1010-01</b>		Collected: 07/17/2014	
Lab ID: 1420593001	Sampling Location: Ft Harrison Bldg 1010		Received: 07/23/2014
Method: NIOSH 7300 Mod.	Media: Ghost Wipe		Prepared: 07/30/2014
		Sampling Parameter: Area 1 ft <sup>2</sup>	Analyzed: 07/30/2014
Analyte	ug/sample	ug/ft <sup>2</sup>	RL (ug/sample)
Lead	3.5	3.5	1.3

Sample ID: <b>71714-1010-02</b>		Collected: 07/17/2014	
Lab ID: 1420593002	Sampling Location: Ft Harrison Bldg 1010		Received: 07/23/2014
Method: NIOSH 7300 Mod.	Media: Ghost Wipe		Prepared: 07/30/2014
		Sampling Parameter: Area 1 ft <sup>2</sup>	Analyzed: 07/30/2014
Analyte	ug/sample	ug/ft <sup>2</sup>	RL (ug/sample)
Lead	6.8	6.8	1.3

Sample ID: <b>71714-1010-03</b>		Collected: 07/17/2014	
Lab ID: 1420593003	Sampling Location: Ft Harrison Bldg 1010		Received: 07/23/2014
Method: NIOSH 7300 Mod.	Media: Ghost Wipe		Prepared: 07/30/2014
		Sampling Parameter: Area 1 ft <sup>2</sup>	Analyzed: 07/30/2014
Analyte	ug/sample	ug/ft <sup>2</sup>	RL (ug/sample)
Lead	4.7	4.7	1.3

Sample ID: <b>71714-1010-04</b>		Collected: 07/17/2014	
Lab ID: 1420593004	Sampling Location: Ft Harrison Bldg 1010		Received: 07/23/2014
Method: NIOSH 7300 Mod.	Media: Ghost Wipe		Prepared: 07/30/2014
		Sampling Parameter: Area 1 ft <sup>2</sup>	Analyzed: 07/30/2014
Analyte	ug/sample	ug/ft <sup>2</sup>	RL (ug/sample)
Lead	27	27	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](http://www.alsglobal.com)

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## ANALYTICAL REPORT

Workorder: 34-1420593  
Client Project ID: Ft Harrison Bldg 1010  
Purchase Order: 013.IH1716.23  
Project Manager: Non-Responsive

## Analytical Results

Sample ID: 71714-1010-05		Collected: 07/17/2014	
Lab ID: 1420593005		Received: 07/23/2014	
Method: NIOSH 7300 Mod.		Media: Ghost Wipe	
		Sampling Parameter: Area 1 ft <sup>2</sup>	
		Prepared: 07/30/2014	
		Analyzed: 07/30/2014	
Analyte	ug/sample	ug/ft <sup>2</sup>	RL (ug/sample)
Lead	4.6	4.6	1.3

Sample ID: 71714-1010-FB		Collected: 07/17/2014	
Lab ID: 1420593006		Received: 07/23/2014	
Method: NIOSH 7300 Mod.		Media: Ghost Wipe	
		Sampling Parameter: Area 1 ft <sup>2</sup>	
		Prepared: 07/30/2014	
		Analyzed: 07/30/2014	
Analyte	ug/sample	ug/ft <sup>2</sup>	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 Levoe Drive  
Salt Lake City, Utah 84123

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



## ANALYTICAL REPORT

Workorder: 34-1420593

Client Project ID: Ft Harrison Bldg 1010

Purchase Order: 013.IH1716.23

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

## 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.

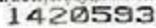
ND = Not Detected, Testing result not detected above the LOD or LOQ.

NA = Not Applicable.

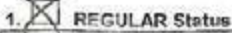
\*\* No result could be reported, see sample comments for details.

< 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.



ANALYTICAL REQUEST FORM

☐ RUSH Status Requested - ADDITIONAL CHARGE

### RESULTS REQUIRED BY

DATE \_\_\_\_\_

CONTACT ALS SALT LAKE PRIOR TO SENDING SAMPLES

2. Date 7-17-14 Purchase Order No. 013.441716.23

3. Company Name NES

Address 1141 Sibley St.  
Folsom CA 95630

Person

Telepho

Fax Tele

E-mail A

Billing A

4. Quote No.

ALS Project Manager

## 5. Sample Collection

Sampling Site F1 Harrison Bldg 1010

### Industrial Process

Date of Collection 7/17/19

Time Collected

Date of Shipment

Chain of Custody No. 013.IH1716.23

6. How did you first learn about ALS?

## 7. REQUEST FOR ANALYSES

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

\*\* 1. µg/sample 2. mg/m<sup>3</sup> 3. ppm 4. % 5. µg/m<sup>3</sup> 6. \_\_\_\_\_ (other) Please indicate one or more units in the column entitled Units\*\*

### Comments

### Possible Contamination and/or Chemical Hazards

## 7. Chain of Custody

Relinquished by

Received by

Reinquished by

Received by

Date/Time 7/17/14

Date/Time 07/23/14 09:05

Date/Time

Date/Time

960 West LeVoy Drive / Salt Lake City, UT 84123

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

ALS Environmental

Non-Responsive





# Industrial Hygiene Southwest

## Violation Inventory Log

### LOG OF SCHEDULE OF CORRECTIVE ACTION - COMPLIANCE WITH SAFETY AND HEALTH STANDARDS 1049th Fire Fighting Platoon, Building 1010, Fort Harrison located in Helena, Montana

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CONTROL NUMBER	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/NCOIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
MTBldg1010-071714-4.7	The SCBA Compressor Trailer was not properly labeled to state that hearing protection is required while in operation	Fort Harrison Readiness Center (Building 1010)	3	Post warning placards on the trailer to communicate Noise Hazardous equipment & requirement for hearing protection					DA PAM 40-501, Ch 1-4(f)(1)
MTBldg1010-071714-5.3	Suspected Asbestos-Containing building materials; inspection, re-inspection, & Hazard Management Plan	Fort Harrison Readiness Center (Building 1010)	3	Conduct a facility survey to identify & assess extent of asbestos hazards; develop & implement an Asbestos Hazard Management Plan					AR 420-1, 5-24b, c, & d
MTBldg1010-071714-6.1	Written Emergency Action Program was not available	Fort Harrison Readiness Center (Building 1010)	4	Develop & implement a written Emergency Action Program					29 CFR 1910.38(b) & AR 385-10, 16-2d(8)
MTBldg1010-071714-6.1	Written Hazard Communication (HAZCOM) Program was not available	Fort Harrison Readiness Center (Building 1010)	4	Develop & implement a written HAZCOM Program					29 CFR 1910.1200 (e)(1) & AR 385-10, 16-2d(2)
MTBldg1010-071714-6.2	Emergency Action Plan / evacuation training was not provided / documented	Fort Harrison Readiness Center (Building 1010)	4	Ensure site personnel receive emergency preparedness training & maintain documentation indicating this training has been conducted					29 CFR 1910.38 (e)&(f)



# Industrial Hygiene Southwest

## Violation Inventory Log

### LOG OF SCHEDULE OF CORRECTIVE ACTION - COMPLIANCE WITH SAFETY AND HEALTH STANDARDS 1049th Fire Fighting Platoon, Building 1010, Fort Harrison located in Helena, Montana

BEST AVAILABLE COPY

CONTROL NUMBER CLOSED <input type="checkbox"/>	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/NCOIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
MTBldg1010-071714-6.2	Hazard Communication (HAZCOM) Program training was not provided/ documented	Fort Harrison Readiness Center (Building 1010)	4	Ensure site personnel receive HAZCOM training & maintain documentation indicating this training has been conducted					29 CFR 1910.1200 (h)
MTBldg1010-071714-7.5 (1)	Portable fire extinguishers at the facility were not being inspected monthly.	Fort Harrison Readiness Center (Building 1010)	3	Visually inspect fire extinguishers monthly & undergo annual maintenance checks; maintain documentation of these on the inspection tag					29 CFR 1910.157(e)
MTBldg1010-071714-7.5 (2)	Access to the electrical panel in the mechanical room was blocked by buckets.	Building 1010, Mechanical Room	4	Relocate materials to allow unobstructed access to electrical panels & to ensure their safe operation					29 CFR 1910.303 (g)(1)
MTBldg1010-071714-7.5 (3)	Disposable respirator was found in the mechanical room left out in the open and stored by its strap.	Building 1010, Mechanical Room	3	Dispose of the respirator and maintain PPE in a sanitary & reliable condition; store in areas away from potential hazards					29 CFR 1910.132 (a)



## 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 Building 1010 and Quonset Hut, Fort Harrison. The paragraphs are numbered to correspond to the sections where first noted. (i.e., N.4.2 describes the following: the N is Conclusions & Recommendations and the 4.2 corresponds back to Section 4 – Sampling Results; Item 2 – Indoor Air Quality).

**N4.2 Indoor Air Quality** – Decrease temperature throughout the facility to fall within the ASHRAE recommended range of 68-75°F, unless occupants are comfortable at the temperatures measured.

**N.4.7 SCBA Compressor Trailer** - Affix a sign to the compressor trailer stating that the machine produces hazardous noise and hearing protection is required while in operation.

**N5.3 Asbestos Management** – Conduct an asbestos survey to identify and assess extent of suspect asbestos containing materials present at the facility and evaluate any hazards. Implement an Asbestos Hazard Management Plan if asbestos is found to be present within the facility.

**N6.1 Written Programs and SOPs** – The full-time personnel were reportedly administrative personnel. However, the detachments of the Building conduct firefighting and other emergency response. Further evaluation should be conducted to determine whether several programs, including: Confined Space, Emergency Preparedness, Hazard Communication, Hearing Conservation, PPE, Respiratory Protection, and Bloodborne Pathogens should be developed.

**N6.2 Training Documentation** - Conduct safety training for Emergency Action Plan / Evacuation and Hazard Communication Program. Be sure to maintain documentation of the training. Further evaluation should be conducted to determine whether training should be conducted for Hearing Conservation, PPE Respiratory Protection and Bloodborne Pathogens.

**N.7.5 (1) Portable Fire Extinguishers** - Inspect portable fire extinguishers monthly, and maintain documentation of inspections.

**N.7.5 (2) Blocked Electrical Panel** - Relocate the buckets being stored in front of the electrical panel to allow at least a 36 inch clearance in front of the panel.



<b>NOISE SURVEY</b> <b>(SOUND LEVEL METER SURVEY)</b>									
1. DATE (YYYYMMDD) 20140714				2. TYPE SURVEY (ENTER CODE) 1 1 - INITIAL SURVEY 2 - RE-SURVEY 3 - OTHER					
3. SOUND LEVEL METER A. MANUFACTURE  QUEST NOISE PRO			4. MICROPHONE A. MANUFACTURE  ATTACHED TO SOUND LEVEL METER			5. CALIBRATOR A. MANUFACTURE  QUEST			
B. MODEL SOUND PRO SE/DL		C. SERIAL NO. BIH090003		B. MODEL QE7052		C. SERIAL NO. 43907		D. MODEL QC-10	
D. LAST ELECTROACOUSTIC CALIB. DATE (YYYYMMDD) 120131127		D. LAST ELECTROACOUSTIC CALIB. DATE (YYYYMMDD) 120131127		D. LAST ELECTROACOUSTIC CALIB. DATE (YYYYMMDD) 120131127		E. SERIAL NO. QIH090203		D. LAST ELECTROACOUSTIC CALIB. DATE (YYYYMMDD) 120131127	
6. WIND SCREEN (X ONE)  USED <input type="checkbox"/> X NOT USED <input type="checkbox"/>						7. MEASUREMENTS OBTAINED (X ONE)  X INDOORS <input type="checkbox"/> OUTDOORS <input type="checkbox"/>			
8. DESCRIPTION OF AREA/DUTIES WHERE NOISE SURVEY CONDUCTED  SCBA Compressor engine (Liberty I); Mobile trailered equipment						9. PRIMARY SOURCE OF NOISE  Diesel engine			
						10. SECONDARY SOURCE OF NOISE  NONE			
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 (<85 dBA)	B. PLUG OR MUFF (85-108)	C. PLUG AND MUFF (108-118)	D. PLUG + MUFF + TIME LIMIT (>118)
3 feet from operator hearing level				X			93		

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 $\geq$ 85 dBA with no controls		953-01-05				0
Number of Personal Noise Dosimetry samples collected $\geq$ 85 dBA		953-01-05				0
Number of Noise Sound Level samples collected $\geq$ 140 dBP with no controls		953-01-06				0
Number of Noise Sound Level samples collected $\geq$ 140 dBP		953-01-06				0
Number of Noise Sound Level samples collected $\geq$ 140 dBP not controlled, that are recommended for control		953-01-07				0
Number of Noise Sound Level samples collected $\geq$ 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 $\geq$ 85 dBA not controlled, that are recommended for control		953-01-09				0
Number of Personal Noise Dosimetry samples collected $\geq$ 85 dBA not controlled		953-01-09				0
Total number of DOEHS-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 DOEHS-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: December 4, 2013



**General Facility Information**

Date(s) of Previous IHSAs: \_\_\_\_\_

Information not available

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

Date(s) of IHSAs: July 17, 2014

Facility Name: Building 1010, Fort Harrison

Address: \_\_\_\_\_

Facility Commander: **Non-Responsive**

Name / Phone Number / email

Safety Officer: Position vacant

Name / Phone Number / email

No Person(s): 2 Admin: 2 Maint: 0 Work Sched: 8 am – 5 pm Size of Facility: Unknown

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

Unit(s): 1049<sup>th</sup> Fire Fighting Tactical Group (FFTG)

Co-Tenant(s): 1050<sup>th</sup>, 1051<sup>st</sup>, & 1052<sup>nd</sup> FFTG

Include UIC if available

List All

Primary work  
activities at  
Facility:

Administrative activities for 1049<sup>th</sup> Fire Fighting Tactical Group; vehicle and equipment storage for fire fighting.

**Written Health & Safety Programs / SOPs**

Program	Program Needed	Have Program	Date of Last Training	# Enrolled	Comments
Confined Space	No	No	June 10, 2014	20	
Emergency Preparedness	Yes	No			
Hazard Communication	Yes	No			
Hearing Conservation	No	No			
PPE	No	No			
Respiratory Protection	No	No			
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	Post Responsibility
Rags	NA	Hazardous Waste	NA
Refuse	Post responsibility	Crane Maintenance	NA
Others:			

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

**Building 1010, Fort Harrison**

Five <b>lead wipe</b> samples collected from drill floor (take samples from dusty horizontal floor surfaces)	<b>Done; Samples 71714-1010-01, 02, 03, 04 &amp; 05</b>
Are any <b>weapons cleaned</b> in the facility, if yes where are they cleaned?	<b>No</b>
Additional <b>lead wipe</b> samples taken from 25% of the rest of the building - <b>-(on floor areas only)</b>	<b>None</b>
Is there a <b>converted indoor firing range</b> ? If so collect additional wipe samples LAW the SOW.	<b>None</b>
Is there any <b>peeling paint</b> ? Take bulk sample if able.	<b>None</b>
Are there any signs of water damage or <b>mold</b> ?	<b>Yes, water staining on 2x4 ceiling tiles observed.</b>
Any suspected <b>ACM</b> ? Where and what condition is it in. Bulk sample if able.	<b>Yes, throughout building in flooring base cove mastic; formica countertops in kitchen; Vinyl flooring in latrines; VAT</b>
Quality of housekeeping	<b>Good</b>
HVAC maintenance plan in place?	<b>Resides with FMO</b>
<b>Overall condition</b> of HVAC system	<b>Good, no occupant complaints</b>
Obtained <b>CO2, Temp, RH</b> monitoring	<b>Done</b>
<b>HAZMAT inventory</b> on hand (make copies for the report), <b>MSDS</b> available for all materials.	<b>Yes, received copy</b>

<b>HAZMAT storage.</b> Condition of lockers, if outside storage building is used is it ventilated and does it meet OSHA standards.	<b>Yes. Refer to the photo log in Appendix C for a picture.</b>
<b>Fire alarm</b> in working condition - -not usually in place in older armories	<b>None</b>
<b>Fire extinguishers</b> in place and properly identified and mounted	<b>Yes</b>
Evidence of <b>monthly fire extinguisher inspections</b>	<b>No, last monthly inspection was March 2014.</b>
<b>Annual fire extinguisher inspections</b> tags current	<b>Yes</b>
Are <b>eye wash stations</b> available in areas where hazardous materials are used and are they inspected weekly (inspections must be documented)	<b>Not applicable to this facility</b>
<b>Egress routes</b> accessible and properly marked - -noted on <u>Fire Evacuation Plan</u>	<b>Yes</b>
<b>Training programs</b> in place; Hazcom, Respiratory Protection, Confined Spaces, Hearing conservation, PPE (if applicable)	<b>No</b>
Any Photo labs	<b>None</b>
Any hazardous <b>noise</b> sources	<b>Yes, Mobile Compressor. Refer to Appendix O.</b>
<b>Light levels</b> checked throughout building	<b>Yes</b>
<b>Breaker panels</b> properly labeled with no exposed wiring	<b>No electrical panels observed.</b>
<b>Check building occupancy</b>  1. How many military personnel, how many civilian personnel 2. What types of units occupy facility, i.e. Administrative, Maintenance, etc.?	<b>1. Military (Full-time) = 2 Civilians = 0 2. Units: Fire Fighting</b>



Any <b>civilian activities</b> in armory (cub scouts, classes, day care, parties etc)	None
Obtain two <b>lead air samples</b>	On IHSW Request Only
Evaluate Kitchen Stove Hood Flow if Present IAW NFPA Standard 96.	<b>Not applicable to this facility</b>
Collect Source Noise Measurements of Kitchen Appliances and Document Using DD 2214	<b>Not applicable to this facility</b>
Conduct a safety walkthrough of entire facility document any safety deficiencies found.	Done
<b>Take photos</b> of outside of building, all <b>sample points</b> and any <b>pertinent hazards</b> or concerns.	Done
Name of Armory, POC, phone #, address and <b>organizations</b> in Armory  (Add Checklist to Report)	<b>Non-Responsive</b> 1049 <sup>th</sup> Fire Fighting Detachment 406-324-3535 Building 1010, Fort Harrison Helena, MT



## 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

## Fort Harrison

Public Affairs Detachment, Bldg. 32

Helena, MT 59636

17 July 14

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

26 AUG 2014

MEMORANDUM THRU **Non-Responsive** DSS, 1956 Mt. Majo St., Room 1009, Helena, MT  
59636

FOR Commander, Fort Harrison, Public Affairs Detachment, Bldg. 32 Helena, MT 59636

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for Fort  
Harrison, Public Affairs Detachment, Bldg. 32 Helena, MT on 17 JUL 2014.

1. References. See survey report.

2. General.

a. At the request of the NGB Industrial Hygiene, Southwest (IHSW) Region, an Industrial Hygiene Site Assistance Visit and cursory review of safety related items and programs was conducted at the Fort Harrison, Public Affairs Detachment, Bldg. 32 Helena, MT on 17 JUL 2014.

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

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

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

3. Findings. See survey report.

4. Commendable.

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

5. Observations / Recommendations.

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



ARNG-CSG-P

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHS AV) for Fort Harrison, Public Affairs Detachment, Bldg. 32 Helena, MT on 17 JUL 2014

2.1a located within the contractors report.

- a. Increase illumination to provide the necessary 50 foot candles for office # 2. (para. 4.8) (RAC 4)
- b. Conduct a facility survey to identify Asbestos Containing Material (ACM) within the facility and develop ACM Management Plan. Conduct awareness training to all personnel who occupy the facility regarding the findings and the ACM Management Plan. The survey may have been completed, however, at the time of this assistance visit awareness training, ACM identification, or an ACM Management Plan was not available. (para.5.3) (RAC 3)
- c. Visually inspect fire extinguishers monthly and undergo annual maintenance checks; maintain documentation on the extinguishers tag. (para. 7.4.3) (RAC3)
- d. Develop and implement a written Hazard Communication Program (HAZCOM). (para. 6.1) (RAC 4)
- e. Ensure that all appropriate personnel receive HAZCOM training and maintain documentation indicating this training has been conducted. (para. 6.2) (RAC 4)
- f. Maintain an inventory of chemicals currently on-site; revise as necessary. (para. 7.1.1) (RAC 4)
- g. Post signs along the exit route indicating direction of travel to nearest exit. (para. 7.4.1) (RAC 4)
- h. Inspect, update, remove, and replace expired material found in the first aid kit(s). (para. 7.4.2) (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.

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for Fort Harrison, Public Affairs Detachment, Bldg. 32 Helena, MT on 17 JUL 2014

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

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

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

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

**Non-Responsive**

NGB, IHSW, CIV  
Regional Industrial  
Hygiene Manager



# Industrial Hygiene Southwest

## Violation Inventory Log

LOG OF SCHEDULE OF CORRECTIVE ACTION - COMPLIANCE WITH SAFETY AND HEALTH STANDARDS  
Building 32, Fort Harrison located in Helena, Montana

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CONTROL NUMBER <input type="checkbox"/> CLOSED	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/NCOIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
MTFHBLDG32-071714-4.8	Illumination was insufficient for activities performed	Office #2	4	Increase illumination to provide the necessary 50 foot candles in Office #2					ANSI RP7-1991 Standard & MIL-STD-1472E 5.8.2
MTFHBLDG32-071714-5.3	Suspected Asbestos Containing Building Materials: inspection, re-inspection, and Asbestos Hazard Management Plan	Facility	3	Conduct a facility survey to identify & assess extent of asbestos hazards; & implement an Asbestos Hazard Management Plan					AR 420-1, 5-24b, c, & d
MTFHBLDG32-071714-6.1	Written Emergency Action Plan was not available	Facility	4	Develop and implement a written Emergency Action Plan					1910.38 (b) & AR 385-10, 16-2d(8)
MTFHBLDG32-071714-6.1	Written Hazard Communication (HAZCOM) Program was not available	Facility	4	Develop & implement a written HAZCOM Program					29 CFR 1910.1200 (e)(1) & AR 385-10, 16-2d(2)
MTFHBLDG32-071714-6.2	Emergency Action Plan / evacuation training was not provided / documented	Facility	4	Ensure site personnel receive emergency preparedness training & maintain documentation indicating this training has been conducted					29 CFR 1910.38 (e)&(f)





# Industrial Hygiene Southwest

## Violation Inventory Log

LOG OF SCHEDULE OF CORRECTIVE ACTION - COMPLIANCE WITH SAFETY AND HEALTH STANDARDS  
Building 32, Fort Harrison located in Helena, Montana

BEST AVAILABLE COPY

CONTROL NUMBER CLOSED <input type="checkbox"/>	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/NCOIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
MTFHBLDG32- 071714-6.2	Hazard Communication (HAZCOM) Program training was not provided	Facility	4	Ensure all appropriate personnel receive HAZCOM training and maintain documentation indicating this training has been conducted					29 CFR 1910.1200 (h)
MTFHBLDG32- 071714-7.1	Chemical inventory outdated	Facility	4	Maintain an inventory of chemicals currently on-site; revise as necessary					29 CFR 1910.1200 (e)(1)(i)
MTFHBLDG32- 071714-7.4.1	The exit route was not immediately apparent and no signs were posted	Facility	4	Post signs along the exit route indicating direction of travel to nearest exit					29 CFR 1910.37 (b)(4)
MTFHBLDG32- 071714-7.4.2	First aid kit had expired materials	Locker Room #2	4	Per the ANSI First Aid Kit Standard, inspect first aid kits, update inventory, remove and replace expired materials					ANSI Z308.1-2009 6
MTFHBLDG32- 071714-7.4.3	<input type="checkbox"/> Portable fire extinguishers at the facility were not being inspected monthly	Facility	3	Visually inspect fire extinguishers monthly & undergo annual maintenance checks; maintain documentation of these on the inspection tag					29 CFR 1910.157(e)

## ***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.

**Industrial Hygiene Site Assistance Visit  
Building 32, Fort Harrison  
Helena, Montana  
July 17, 2014**







**INDUSTRIAL HYGIENE SITE ASSISTANCE VISIT (IHSAV)**

**PUBLIC AFFAIRS DETACHMENT - BUILDING 32**

FORT HARRISON  
HELENA, MONTANA 59636

**July 17, 2014**

*Prepared for:*  
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*Prepared by:*  
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**NES Job Number: 013.IH1716.25**

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*Senior Industrial Hygienist*

**Non-Responsive**

*Principle-In-Charge*



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## EXECUTIVE SUMMARY

On July 17, 2014, [Non-Responsive] Industrial Hygiene Technician and [Non-Responsive] Certified Industrial Hygienist (CIH) with Network Environmental Systems, Inc. (NES), conducted an Industrial Hygiene Site Assistance Visit (IHSAV) at the Public Affairs Detachment - Building 32 at Fort Harrison in Helena, Montana. The primary point of contact (POC) was unavailable at the time of the IHSAV, however [Non-Responsive] served as the POC to assist with site access. [Non-Responsive] may be reached by phone at (406) 324-3640 or by email at [Non-Responsive]

The objectives of this IHSAV were to:

- Evaluate work processes conducted within the facility;
- Review hazardous material storage and use procedures;
- Collect area and breathing zone air samples;
- Collect metal surface wipe samples;
- Measure the volumetric flow of exhaust ventilation systems;
- Assess potentially noise hazardous areas;
- Measure illumination levels;
- Collect indoor air quality data;
- Evaluate existing safety hazards;
- Inspect and evaluate the indoor firing range, active or converted (if present);
- Inspect and evaluate the paint booth operation and systems (if present);
- Evaluate the facility for potential asbestos, lead, and mold hazards;
- Review safety policies/programs, training, and record keeping; and
- Conduct Hazard Assessments (HA's).

Significant findings for this IHSAV 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: SGT Scott Breeton served as the alternate POC who stepped in at the last minute. He was very helpful during the IHSAV and assisted with providing access to all area of the facility.

## 1.0 Introduction

On July 17, 2014, [Non-Responsive] Industrial Hygiene Technician and [Non-Responsive] CIH with NES, conducted an IHSAV at the Public Affairs Detachment in Building 32 at Fort Harrison in Helena, Montana. The primary point of contact (POC) was unavailable at the time of the IHSAV, however, [Non-Responsive] served as the POC to assist with site access. [Non-Responsive] may be reached by phone at (406) 324-3640 or by email at [Non-Responsive]

## 1.1 Objectives

The primary objective of the IHSAV was to evaluate the occupational environment of the areas within the Public Affairs Detachment - Building 32 in order to determine the presence of health and safety risks. Processes and activities at the facility 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 IHSAV 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:

- Evaluate work processes conducted within the facility;
- Review hazardous material storage and use procedures;
- Collect area and breathing zone air samples;
- Collect metal surface wipe samples;
- Measure the volumetric flow of exhaust ventilation systems;
- Assess potentially noise hazardous areas;
- Measure illumination levels;
- Collect indoor air quality data;
- Evaluate existing safety hazards;
- Inspect and evaluate the indoor firing range, active or converted (if present);
- Inspect and evaluate the paint booth operation and systems (if present);
- Evaluate the facility for potential asbestos, lead, and mold hazards;
- Review safety policies/programs, training, and record keeping; and
- Conduct Hazard Assessments (HA's).



## 2.0 PROCESS DESCRIPTION

The Public Affairs operates in Building 32, which consisted of the following: administrative offices, conference room, locker rooms, storage room, restrooms, and janitorial closets. General administrative duties for the Montana Army National Guard were conducted in the offices.

The facility was located along Frederick Drive and Central Avenue in Fort Harrison. Adjacent Fort buildings bordered the facility to the north and west. An open grassy area bordered to the east and south.

The date the facility was constructed and total size of the facility was unknown at the time of the IHSAB. The facility operated one weekend per month from 0700 to 1700. The 103<sup>rd</sup> Public Affairs Detachment (PAD) was assigned to the facility whose primary work activities included administrative support for the Montana Army National Guard. There were a total of six (6) guard members assigned to the facility. An employee list was not available at the time of the IHSAB as the 103<sup>rd</sup> PAD was off-site.

There were no records available at the site indicating that a previous IHSAB had been conducted. Thus, this IHSAB should serve as the baseline IH survey for the facility.

During the Opening Conference meeting, NES was informed of the following:

- There was no active or converted indoor firing range (IFR) at the facility.
- The facility was not used for public functions.
- Weapon cleaning was not performed 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 Personal Breathing Zone Air Sampling

NES did not conduct personal breathing zone air sampling during this IHS AV as no work processes were performed where NES could conduct such sampling.

#### 3.2 Indoor Air Quality

Carbon dioxide (CO<sub>2</sub>) 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 CO<sub>2</sub>, water vapor, and other bio effluents during respiration. The American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE), in their Standard 62.1-2013, *Ventilation for Acceptable Air Quality*, recommend maintaining CO<sub>2</sub> below a concentration that is 700 parts per million (ppm) above outdoor levels. Outside CO<sub>2</sub> concentrations are typically about 350 ppm. Providing sufficient ventilation to maintain steady-state CO<sub>2</sub> 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. According to ASHRAE, in their standard 55-2010, *Thermal Environmental Conditions for Human Occupancy*, indoor temperatures are recommended to range 68-74° Fahrenheit (F) during the winter and 73-79 °F in the summer. Relative humidity indicates the amount of moisture in the air. ASHRAE in their Standard 62.1-2013, recommends maintaining humidity levels below 65%.

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

#### 3.3 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 facility using a TSI Q-Trak IAQ Meter, model 8385. A copy of the annual calibration certificate for this instrument is located in Appendix H.

### **3.4 Metal Wipe Sampling**

Lead dust may be introduced into a facility from work processes, facility finishes, consumer products, or other sources. Lead wipe samples were not collected at this facility as possible sources of lead were not identified.

### **3.5 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 throughout the facility were in good and intact condition. Peeling paint was not identified at the facility therefore a paint sample was not collected.

### **3.6 Exhaust Ventilation Survey**

Exhaust ventilation systems were not assessed during this IHS AV as there were no systems present within the facility.

### **3.7 Personal Noise Dosimetry and Sound-Level Measurements**

Personal noise dosimetry and sound-level measurements were not collected during this IHS AV as no hazardous noise sources were identified.

### **3.8 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.

### 3.9 Equipment Used

The following equipment was used for this survey:

Equipment Type	Model Number	Serial Number	Calibration Date
TSI Q-Trak IAQ Meter	8551	51380	October 2013
Konica Minolta Light Meter	TL-1	00279019	June 2014

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

### 3.10 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 Personal Breathing Zone Air Sampling**

NES did not conduct personal breathing zone air sampling during this IHSAB as no work processes were performed where NES could conduct such sampling.

### **4.2 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 the 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 CO<sub>2</sub> concentration was measured to be 483 ppm; therefore, the maximum indoor CO<sub>2</sub> concentration recommended by ASHRAE was 1,183 ppm. The CO<sub>2</sub> concentrations from inside Building 32 ranged from 484 to 597 ppm and. The areas measured were within the ASHRAE recommended range.

ASHRAE recommends maintaining temperatures between 68 and 75°F and relative humidity below 65% relative humidity to minimize the growth of allergenic or pathogenic organisms. Temperatures inside Building 32 ranged between 72.6 and 75.1°F. Relative humidity in Building 32 ranged from 30.7 to 48.4%. The locations measured exceeded ASHRAE's recommended maximum temperature, but were below the recommended limit of 65% relative humidity.

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

### **4.3 Air Monitoring – Carbon Monoxide**

Carbon monoxide concentrations were measured at a total of 11 locations throughout Building 32 using a TSI Q-Trak, model 8551. The concentration of CO inside measured 2 ppm throughout the facility and was equal to the outdoor CO concentration. These concentrations were below the exposure limit ceiling of 200 ppm set forth by OSHA. A summary of CO measurements collected is provided in Appendix E.

### **4.4 Metal Wipe Sampling**

Lead wipe samples were not collected at this facility as possible sources of lead were not identified.

#### 4.6 Exhaust Ventilation Survey

#### 4.7 Personal Noise Dosimetry and Sound Level Measurements

#### 4.8 Illumination Level Monitoring

Lighting measurements were collected in a total of 11 locations in Building 32. Based on the above criteria, lighting was sufficient in all but one (1) of the measured locations. Lighting was insufficient for activities performed in Office #2. See Appendix E for a table 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 facility was conducted. This evaluation consisted of determining if a maintenance plan was in place and a visual inspection of the system. **Non-Responsive** indicated that a maintenance plan was in place and is maintained by the Field Management Office (FMO). The HVAC systems are maintained by State Facility Maintenance personnel. The administrative areas were serviced by ducted supply and return vents. The facility HVAC systems were in good visible condition. No exposed hazards or defects were observed during the IHS AV.

### 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 or water staining during the IHS AV.

### 5.3 Asbestos Evaluation

A cursory evaluation of the facility's interior and exterior 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 Building 32 included: base cove mastic, carpet mastic, and drywall and associated joint compound. The suspect building materials observed were found to be in good condition.

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 TRAINING DOCUMENTS AND HAZARD ASSESSMENTS**

### **6.1 Written Programs & SOPs**

Written programs were not available for review at the time of the IHS AV. The facility should have the following written programs developed and implemented at the facility: Emergency Preparedness and Hazard Communication.

**Note:** NES did not evaluate the contents or quality of any of the documents identified during this visit as the 103<sup>rd</sup> PAD was not available to produce the documentation, at the time of the IHS AV.

### **6.2 Training Documentation**

Training documentation was not available at the time of the IHS AV. Facility personnel should be trained regarding: Emergency Preparedness and Hazard Communication, .

**Note:** NES did not evaluate the contents or quality of any of the training as the 103<sup>rd</sup> PAD was not available to produce the documentation, at the time of the IHS AV.

### **6.3 Hazard Assessments**

Hazard assessments were not performed during this IHS AV as the primary work activity conducted at the facility was determined to be administrative support in an office setting. No other work processes were identified to be conducted by staff on a regular basis that would be expected to result in an increased potential for exposure to biological, chemical, and/or physical hazards.

## **7.0 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.

### **7.1 Hazardous Materials Inventory, Storage & Material Safety Data Sheets**

The facility had a material safety data sheet (MSDS) binder at the time of the IHSAB. The binder was out of date and included information for chemicals which were not onsite.

### **7.2 General Supply Areas**

General supply areas throughout the facility were well organized and in good visible condition.

### **7.3 Contract (Non-DoD) Operations**

Contract (non-DoD) operations were performed at this facility and include refuse and pest control operations, both of which are conducted by Post – Fort Harrison.

### **7.4 Safety Walk-Through**

NES conducted a walk-through of the facility 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 facility did not have egress routes posted.
2. The first aid cabinet in locker room #2 contained expired medications.
3. Fire extinguishers were past due for monthly inspections. The last documented inspection was in February 2014.

Non-Disparaging

## APPENDIX A

### REFERENCES



## 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

## **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

PHOTO LOG  
BUILDING 32, FORT HARRISON  
HELENA, MT  
JULY 17, 2014



Photo 1: Fort Harrison Building 32 front exterior.



Photo 2: View of office area.

PHOTO LOG  
BUILDING 32, FORT HARRISON  
HELENA, MT  
JULY 17, 2014



**Photo 3:** Conference Room



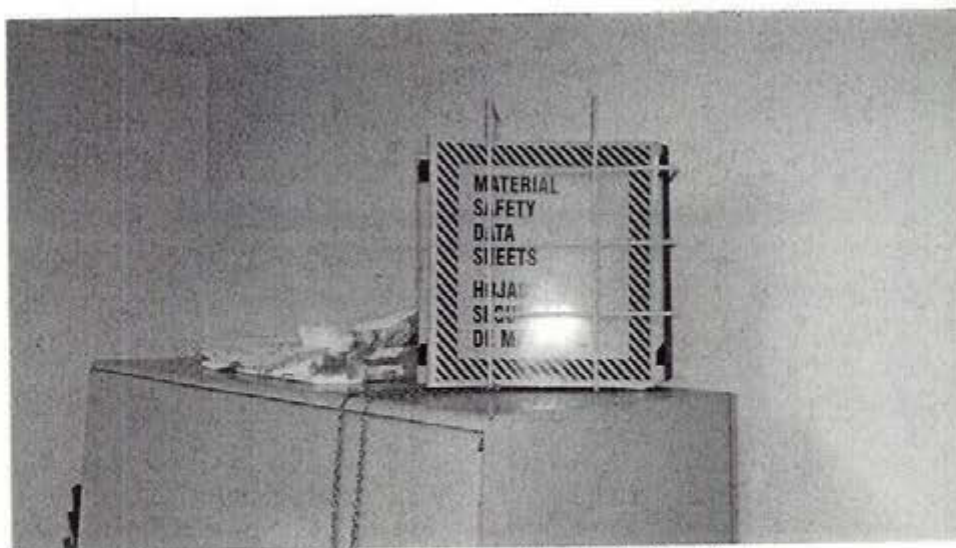
**Photo 4:** Fire extinguisher in front office with outdated inspection tag; dated February 2014.



**PHOTO LOG  
BUILDING 32, FORT HARRISON  
HELENA, MT  
JULY 17, 2014**



**Photo 5:** Fire extinguisher in locker room with outdated inspection tag; dated February 2014.



**Photo 6:** MSDS binder located in administrative area.

**PHOTO LOG  
BUILDING 32, FORT HARRISON  
HELENA, MT  
JULY 17, 2014**



**Photo 7:** First aid kit in locker room with expired supplies.



**Photo 8:** View of back exterior of building.

**PHOTO LOG**  
**BUILDING 32, FORT HARRISON**  
**HELENA, MT**  
**JULY 17, 2014**



**Photo 9:** View to east, adjacent to the building.



**Photo 10:** View to north, adjacent to the building.



**PHOTO LOG  
BUILDING 32, FORT HARRISON  
HELENA, MT  
JULY 17, 2014**



**Photo11:** View to south, adjacent to the building.



**Photo 12:** View to west, across the street.

APPENDIX D

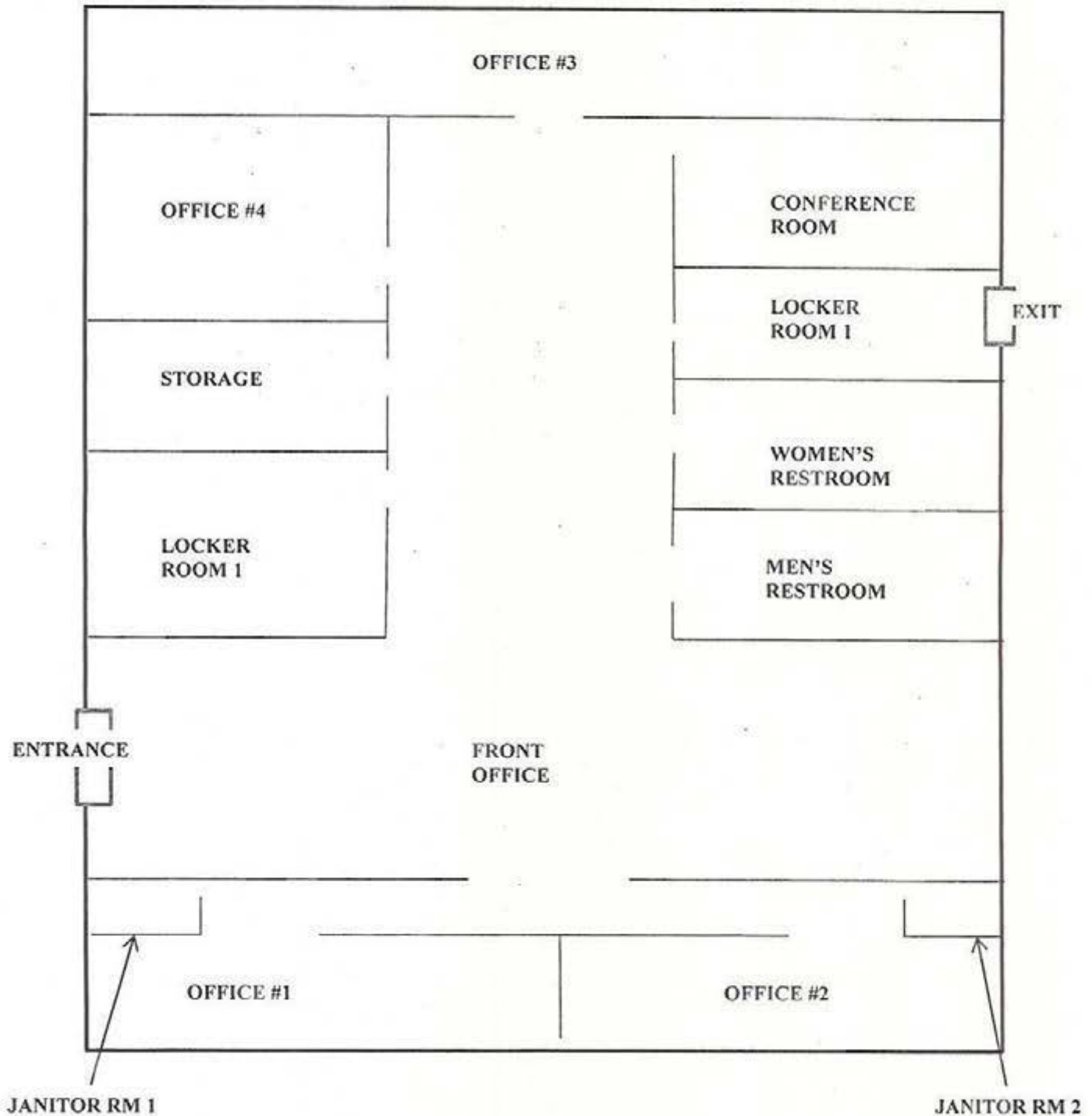
CHEMICAL INVENTORY

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SUPPORTING DOCUMENTATION NOT RECEIVED



FACILITY MAP  
BUILDING 32, FORT HARRISON  
HELENA, MT  
JULY 17, 2014



**IAQ MEASUREMENTS**  
**BUILDING 32, FORT HARRISON**  
**HELENA, MT**  
**JULY 17, 2014**

Location	CO <sub>2</sub> max permissible level 1,183 ppm	Temperature permissible range 68 - 75°F	RH% permissible range 30-60%	CO Max permissible 200 ppm STEL
Front Office	498	75.1	48.4	2
Office #1	495	75.1	46.8	2
Office #2	484	75.0	46.4	2
Hallway	499	74.8	45.5	2
Locker Room #1	544	73.5	45.0	2
Men's Restroom	533	77.8	44.2	2
Storage Room	545	73.5	42	2
Locker Room #2	597	73.9	43.7	2
Conference Room	556	73	40.8	2
Office #4	590	72.6	40.1	2
Office #3	557	72.7	39.7	2
Outside	483	74.6	49.2	2

**BOLD = Outside of permissible range**

CO<sub>2</sub> = Carbon Dioxide

CO = Carbon Monoxide

°F = Fahrenheit

RH = Relative Humidity

**ILLUMINATION SURVEY**  
**BUILDING 32, FORT HARRISON**  
**HELENA, MT**  
**JULY 17, 2014**

Room	Location	Light Measurement (FC)	Minimum Lighting Requirement (FC)
Front Office	Center of Room	85.3	≥50
Office #1	Desk Top	67.8	≥50
<b>Office #2</b>	<b>Desk Top</b>	<b>36.3</b>	≥50
Hallway	Center of Room	40.3	≥30
Locker Room #1	Center of Room	34.1	≥30
Men's Restroom	Center of Room	90.5	≥30
Storage Room	Center of Room	80.1	≥30
Locker Room #2	Center of Room	78.3	≥30
Conference Room	Table Top	123.9	≥50
Office #4	Desk Top	127.1	≥50
Office #3	Desk Top	103.4	≥50

\*FC = foot candle measurement

**Bold = Insufficient Lighting**



APPENDIX F

VENTILATION DATA

BEST AVAILABLE COPY

NOT PERFORMED AT THIS FACILITY



## Facility Information Form

Revised: December 4, 2013

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General: **Non-Responsive** Date(s) of Previous IHSAs: None Avail.

IH(s): **Non-Responsive** Date(s) of IHSAs: 7-17-14

Facility Name: Ft. Harrison, B/32 Public Affairs Dept. Det

Address: above

Facility Commander: **Non-Responsive**

Safety Officer: unknown

No Person(s): 6 Admin: 6 Maint: 0 Name / Phone Number / email: 1 Weekend Size of Facility: ? unit ft²

(Include status -AGR, Fed, Tech., IDR, State or Contract Employee) 7am-5pm

Unit(s): 103rd Public Affairs Co-Tenant(s): None Build Date: unk

Include UIC if available List All Renovation: unk

Primary work activities at Facility: Public Affairs for MT Natl. Guard

## Written Health &amp; Safety Programs / SOPs

Program	Program Needed	Have Program	Date of Last Training	# Enrolled	Comments
Confined Space	NA				
Emergency Preparedness		unk	unk		
Hazard Communication		unk	unk		
Hearing Conservation		unk	unk		
PPE	NA				
Respiratory Protection	NA				
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

Up + Down Facility floor plan / evacuation map NA

NA List of equipment serviced / maintained NA Hazardous Materials inventory

NA Previous IH reports Not Avail. Not Avail. Personnel list

NA = Not Applicable to this site Others (List):

## Non - DoD Contractors

Service	Provider	Service	Provider
Oil / Water Separator	<u>NA</u>	Laundry	<u>NA</u>
Tools	<u>NA</u>	Pest Control	<u>Post - Ft. Harrison</u>
Rags	<u>NA</u>	Hazardous Waste	<u>NA</u>
Refuse	<u>Post - Ft. Harrison</u>	Crane Maintenance	<u>NA</u>
Others:			





## General Safety Compliance Assessment Form

Facility: Ft. Hamis, B/32Date: 7-17-14

Revised: September 18, 2013



## Bloodborne Pathogens (1910.1030)

Applicable

Not Applicable

Waste containers

☐ Yes☒ No

PPE available

☐ Yes☒ No

unknown if program exists

## Compressed Gases (1910.101 - .105)

Applicable

Not Applicable

Labeled (contents / empty)

☐ Yes☐ No

Good condition

☐ Yes☐ NoProper storage (O<sub>2</sub> vs. flam, chained, upright, etc.)☐ Yes☐ No

Flammable cylinders grounded

☐ Yes☐ No

## Confined Space (1910.146)

Applicable

Not Applicable

Labeled w/ "Danger" sign(s)

☐ Yes☐ No

Calibrated direct reading instruments

☐ Yes☐ No

Entry materials / supplies

☐ Yes☐ No

## Electrical Safety (1910.301 - .335)

Applicable

Not Applicable

GFCI plugs

☒ Yes☐ No

Loose / hazardous wires

☐ Yes☒ No

Electrical panels unobstructed &amp; labeled

☐ Yes☒ No

High voltage (&gt;600V); signage / work

☐ Yes☒ No

No elect panel observed

## Emergency Eyewash / Shower (1910.151)

Applicable

Not Applicable

Inspection records

☐ Yes☐ No

Unobstructed

☐ Yes☐ No

Properly protected (caps over eyewash, etc.)

☐ Yes☐ No

## Emergency Preparedness (1910.34 - .38)

Applicable

Not Applicable

Alarm system

☐ Yes☒ No

Exits marked / free of obstruction

☐ Yes☒ No

## Ergonomics (Gen. Duty Clause)

Applicable

Not Applicable

Workplace evaluation conducted

☐ Yes☐ No

Hazard control / precautions in place

☐ Yes☐ No

## Fall Protection (1910.23 - .28 &amp; 1926.501-.503)

Applicable

Not Applicable

Elevations of 4ft have railings / toeboard

☐ Yes☐ No

Fall protection is in good condition

☐ Yes☐ No

Training received / documented

☐ Yes☐ No

## Fire Safety (1910.39 &amp; 1910.157)

Applicable

Not Applicable

Fire extinguishers present

☒ Yes☐ No

Fire extinguishers properly inspected

☐ Yes☒ No

Sprinklers unobstructed

☐ Yes☒ No

Training received / documented

☐ Yes☐ NoLast inspection in Feb  
No sprinklers  
unknown

## Forklift, Jacks &amp; Industrial Trucks (1910.178)

Applicable

Not Applicable

Labeled with inspection / service date

☐ Yes☐ No

Training received / documented

☐ Yes☐ No

Overhead protection

☐ Yes☐ No

## Hand &amp; Powered Tools (1910.241 - .244)

Applicable

Not Applicable

Proper guarding &amp; controls

☐ Yes☐ No

3-prong power cord

☐ Yes☐ No

Inspections

☐ Yes☐ No

## Hazard Communication (1910.1200)

Applicable

Not Applicable

Chemical inventory

☐ Yes☐ No

Materials labeled

☐ Yes☐ No

MSDS available

☐ Yes☐ Nounknown if chemicals are  
used  
No chemicals used



## General Safety Compliance Assessment Form

Facility: Et. Hannon, B/3EDate: 7-17-14

Revised: September 18, 2013



## Hazardous Materials (1910.106 -- .107)

Applicable

Not Applicable

- Storage (quantity, upright, sealed) ☐ Yes ☐ No
- Storage cabinet (flammable & corrosive) ☐ Yes ☐ No
- Safety equip. present (eyewash / shower/spill kit) ☐ Yes ☐ No
- Hazard signs at entrance (NFPA, etc.) ☐ Yes ☐ No
- Proper segregation ☐ Yes ☐ No

## Hearing Conservation / Noise (1910.95)

Applicable

Not Applicable

- Audiometric testing ☐ Yes ☐ No
- Noise haz. areas (>85dBA) present / labeled ☐ Yes ☐ No
- Exposure monitoring ☐ Yes ☐ No

## Heat Stress (General Duty Clause)

Applicable

Not Applicable

- Worksite evaluation ☐ Yes ☐ No
- Precaution / control measures ☐ Yes ☐ No

## Ladders (1910.25 -- .27)

Applicable

Not Applicable

- Sturdy / good condition ☐ Yes ☐ No
- Training received / documented ☐ Yes ☐ No

## Overhead Crane (1910.179)

Applicable

Not Applicable

- Written procedures ☐ Yes ☐ No
- Training received / documented ☐ Yes ☐ No
- Rated load markers ☐ Yes ☐ No
- Warning devices (power travel mechanism) ☐ Yes ☐ No
- Inspection / testing / certification ☐ Yes ☐ No

## PPE (1910.132, .133, &amp; .135 -- .138)

Applicable

Not Applicable

- Proper type / selection / use ☐ Yes ☐ No
- Hazard assessment conducted ☐ Yes ☐ No

## Respiratory Protection (1910.134)

Applicable

Not Applicable

- Proper type / selection / use ☐ Yes ☐ No
- Medical surveillance / fit-testing ☐ Yes ☐ No

## Walking / Working Surfaces (1910.22)

Applicable

Not Applicable

- Floors / aisles dry ☐ Yes ☐ No
- Floors / aisles unobstructed ☐ Yes ☐ No
- Openings guarded ☐ Yes ☐ No

## Welding, Cutting, Brazing (1910.94 &amp; 251 -- .255)

Applicable

Not Applicable

- Local exhaust ventilation ☐ Yes ☐ No
- Exposure assessment conducted ☐ Yes ☐ No
- Guards / barriers ☐ Yes ☐ No

## Building Material Hazards

## Asbestos

- Suspect materials present ☒ Yes ☒ No
- Is there an ACM Inspection Report ☐ Yes ☒ No

If yes, obtain copy

## Lead

- Peeling paint present ☐ Yes ☒ No

If yes, collect bulk sample

## Mold

- Is there evidence of moisture intrusion? ☐ Yes ☒ No
- Is there current moisture intrusion? ☐ Yes ☒ No
- Is there visible mold growth? ☐ Yes ☒ No



251

**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)	Admin Function None
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)	None
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?	None
Any suspected ACM? Where and what condition is it in. Bulk sample if able.	Yes, see notes
Quality of housekeeping	Good
HVAC maintenance plan in place?	Resides w/ FMO
Overall condition of HVAC system	Good
Obtained CO2, Temp, RH monitoring	Done
HAZMAT inventory on hand (make copies for the report), MSDS available for all materials.	None
HAZMAT storage, Condition of lockers, if outside storage building is used is it ventilated and does it meet OSHA standards.	None



- 25 2

Fire alarm in working condition - -not usually in place in older armories	None
Fire extinguishers in place and properly identified and mounted	present, <del>not inspected</del>
Evidence of monthly fire extinguisher inspections	No
Annual fire extinguisher inspections tags current	Yes
Are eye wash stations available in areas where hazardous materials are used and are they inspected weekly (inspections must be documented)	None
Egress routes accessible and properly marked - -noted on <u>Fire Evacuation Plan</u>	No egress maps
Training programs in place; Hazcom, Respiratory Protection, Confined Spaces, Hearing conservation, PPE (if applicable)	unknown
Any Photo labs	No
Any hazardous noise sources	None
Light levels checked throughout building	Done
Breaker panels properly labeled with no exposed wiring	none observed
Check building occupancy 1. How many military personnel, how many civilian personnel 2. What types of units occupy facility, i.e. Administrative, Maintenance, etc.?	military = 6 Civ = 0 Admin
Any civilian activities in armory (cub scouts, classes, day care, parties etc)	0
Obtain two lead air samples	On IHSW Request Only None

-25 3

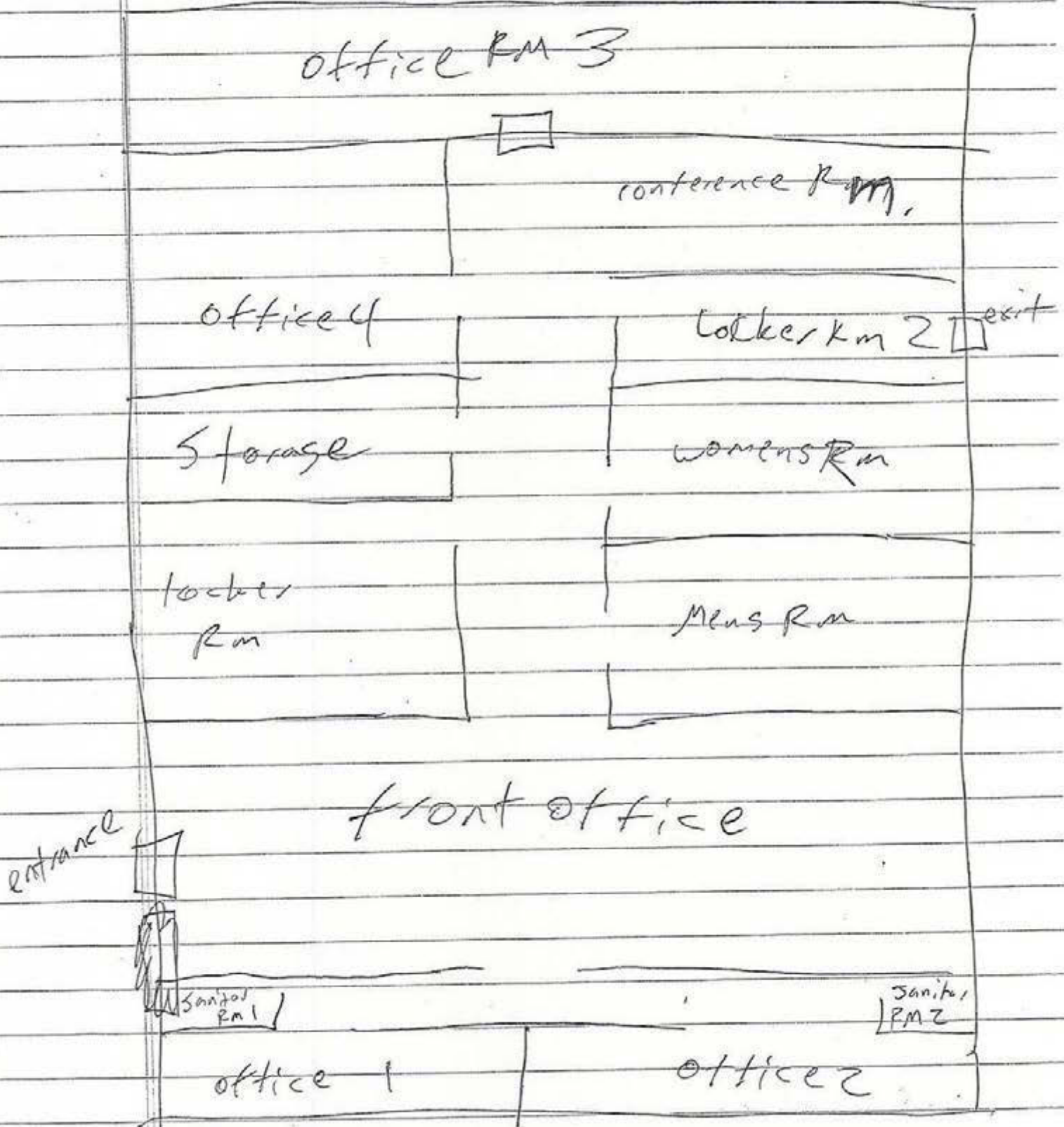
Evaluate Kitchen Stove Hood Flow if Present IAW NFPA Standard 96.	None
Collect Source Noise Measurements of Kitchen Appliances and Document Using DD 2214	None
Conduct a safety walkthrough of entire facility document any safety deficiencies found.	Done
<u>Take photos</u> of outside of building, all sample points and any pertinent hazards or concerns.	Done
Name of Armory, POC, phone #, address and organizations in Armory	See Facil Info Form
(Add Checklist to Report)	(Add Checklist to Report)

AD

FT Harrison  
BLdg 32 Map

. 25

~~XXXXXX~~







# Indoor Air Quality & Illumination Measurements

Facility: FT Harrison BLDG 32

Date: 7/17/14

Revised: September 18, 2013



Location	CO <sub>2</sub> max permissible level 1,000 ppm	Temperature permissible range 68 - 75° F	RH% permissible range 30-60%	CO max permissible range 200 ppm. STEL	Illumination (FC)
outside	483	74.6	49.2	2	
Front office	494	75.1	44.4	2	85.3
Office 1	<del>495</del> 495	75.1	46.8	2	67.5
Office 2	484	75.0	46.4	2	36.3
Hallway 1	499	74.8	45.5	2	40.3
Cocker Rm 1	544	73.5	45.0	2	34.1
Mens Rm	533	72.6	44.2	2	40.5
Storage	545	73.5	42	2	80.1
Locker Rm 2	597	73.9	43.7	2	78.3
Conference Rm	556	73	40.4	2	123.9
Office 4	590	72.6	40.1	2	127.1
Office 3	557	72.7	39.7	2	103.4

1 window

1 window

CO<sub>2</sub> = Carbon Dioxide  
 °F = Fahrenheit  
 RH = Relative Humidity  
 CO = Carbon Monoxide  
 STEL = Short Term Exposure Limit

7/17/14

B/32

.25

Suspect ACM - No survey rpt avail.

- Sheet rock + joint compd
- base coat mastic
- carpet glue

No Peeling Paint Observed

No water damage observed

4 MSDS in MSDS Binder #1 (Newer of 2)  
Dust Off - compressed air

F Old MSDS Binder, msds dating back to 1989  
for photo lab chem's - no photo lab  
onsite  
- retain only MSDS (SDS) which pertain  
to current ops.



AD

FT Harrison  
Bldg 32

, 25

## Findings

— fire extinguisher in front office next to door  
has only been inspected once this year - monthly  
inspection required → Feb.

→ photo 5 & 6

— the same is true w/ fire extinguisher, locker Rm 2  
Photo 8

first aid cabinet

locker Rm 2 Expired supplies  
month/year

Antibiotic ointment - 12/09

first aid cream - 1/10

Unit dose eye drops - 04/2010

Almonia Inhalant - March 2012

sting swab - 3/2011

Itch relief - 9/09





MICRO PRECISION CALIBRATION  
22835 INDUSTRIAL PLACE  
GRASS VALLEY CA 95949  
530-266-1860

## 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: **Non-Responsive**  
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	0812421	ESPEC	Nov 26, 2013	2008120224653

**Procedures Used in this Event**

Procedure Name	Description
MANUFACTURER	MANUAL REV CONTROL

Calibrating Technician:

**Non-Responsive**

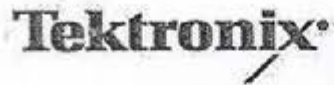
QC Approv

**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.



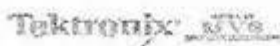
Manufacturer: KONICA MINOLTA  
 Serial Number: 00279019

Model Number: TL-1  
 Calibration Date: 6/2/2014

Function / Range	Nominal Value	As Found	Result	As Left	Result	Min	Max	Units	UNC
ILLUMINANCE									
	10	10.04	Pass	Same	Pass	9.49	10.51	f/c	
	100	100.10	Pass	Same	Pass	94.9	105.1	f/c	
	1000	950.00	Pass	Same	Pass	940	1060	f/c	

Datasheets may contain measurements that are not covered by the Scope of Accreditation. These measurements are indicated by a pound sign (#).

\*\*\*\*\*END OF MEASUREMENT REPORT\*\*\*\*\*





**APPENDIX J**

**LABORATORY REPORTS**



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**THIS TASK DOES NOT APPLY TO THIS FACILITY**

**APPENDIX K**

**EMPLOYEE LIST**



# Industrial Hygiene Southwest

## Violation Inventory Log

LOG OF SCHEDULE OF CORRECTIVE ACTION - COMPLIANCE WITH SAFETY AND HEALTH STANDARDS  
Building 32, Fort Harrison located in Helena, Montana

CONTROL NUMBER	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/NCOIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
MTFHBLDG32- 071714-6.2	Hazard Communication (HAZCOM) Program training was not provided	Facility	4	Ensure all appropriate personnel receive HAZCOM training and maintain documentation indicating this training has been conducted					29 CFR 1910.1200 (h)
MTFHBLDG32- 071714-7.1	Chemical inventory outdated	Facility	4	Maintain an inventory of chemicals currently on-site; revise as necessary					29 CFR 1910.1200 (e)(1)(i)
MTFHBLDG32- 071714-7.4.1	The exit route was not immediately apparent and no signs were posted	Facility	4	Post signs along the exit route indicating direction of travel to nearest exit					29 CFR 1910.37 (b)(4)
MTFHBLDG32- 071714-7.4.2	First aid kit had expired materials	Locker Room #2	4	Per the ANSI First Aid Kit Standard, inspect first aid kits, update inventory, remove and replace expired materials					ANSI Z308.1-2009 6
MTFHBLDG32- 071714-7.4.3	Portable fire extinguishers at the facility were not being inspected monthly	Facility	3	Visually inspect fire extinguishers monthly & undergo annual maintenance checks; maintain documentation of these on the inspection tag					29 CFR 1910.157(e)





# Industrial Hygiene Southwest

## Violation Inventory Log

### LOG OF SCHEDULE OF CORRECTIVE ACTION - COMPLIANCE WITH SAFETY AND HEALTH STANDARDS Building 32, Fort Harrison located in Helena, Montana

CONTROL NUMBER <input type="checkbox"/> CLOSED	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/NCOIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
MTFHBLDG32-071714-4.8	Illumination was insufficient for activities performed	Office #2	4	Increase illumination to provide the necessary 50 foot candles in Office #2					ANSI RP7-1991 Standard & MIL-STD-1472E 5.8.2
MTFHBLDG32-071714-5.3	Suspected Asbestos Containing Building Materials; inspection, re-inspection, and Asbestos Hazard Management Plan	Facility	3	Conduct a facility survey to identify & assess extent of asbestos hazards; & implement an Asbestos Hazard Management Plan					AR 420-1, 5-24b, c, & d
MTFHBLDG32-071714-6.1	Written Emergency Action Plan was not available	Facility	4	Develop and implement a written Emergency Action Plan					1910.38 (b) & AR 385-10, 16-2d(8)
MTFHBLDG32-071714-6.1	Written Hazard Communication (HAZCOM) Program was not available	Facility	4	Develop & implement a written HAZCOM Program					29 CFR 1910.1200 (e)(1) & AR 385-10, 16-2d(2)
MTFHBLDG32-071714-6.2	Emergency Action Plan / evacuation training was not provided / documented	Facility	4	Ensure site personnel receive emergency preparedness training & maintain documentation indicating this training has been conducted					29 CFR 1910.38 (e)&(f)

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**APPENDIX M**

**HAZARD ASSESSMENTS**

**THIS TASK DOES NOT APPLY TO THIS FACILITY**



APPENDIX N

RECOMMENDATIONS

## 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 IHS AV report for Building 32, Fort Harrison. The paragraphs are numbered to correspond to the sections where first noted. (i.e., N.3.2 describes the following: the N is Conclusions & Recommendations and the 3.2 corresponds back to Section 3 – Methods; Item 2 – Indoor Air Quality).

**N.4.2 Indoor Air Quality** – Decrease temperature throughout the facility to fall within the ASHRAE recommended range of 68-75°F, unless occupants are comfortable at the temperatures measured.

**N.4.8 Illumination Level Monitoring** - Increase the lighting in Office #2 to provide the necessary illumination level of 50 foot candles, within the space.

**N5.3 Asbestos Management** – Conduct an asbestos survey to identify and assess extent of suspect asbestos containing materials present at the facility and evaluate any hazards. Implement an Asbestos Hazard Management Plan if asbestos is found to be present within the facility.

**N6.1 Written Programs and SOPs** – Develop and implement site-specific Emergency Action Plan and a written Hazard Communication Program; and ensure documentation is kept available for reference.

**N6.2 Training Documentation** - Conduct safety training for Emergency Action Plan / evacuation and Hazard Communication program. Be sure to maintain documentation of the training.

**N7.1 Chemical Inventory** – Develop an inventory of hazardous materials/chemicals stored on-site; obtain MSDS for each; and maintain a copy of them in an accessible binder to reflect the current inventory.

### **N7.3 Safety Walk-Through**

1. Egress/exit routes should be posted
2. Remove expired medications from the first aid cabinet in locker room #2; replace with current medications.
3. Perform monthly inspections of fire extinguishers and ensure they are serviced annually. Maintain documentation that these are completed.

**APPENDIX O**

**DD FORMS 2214**



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NOT PERFORMED AT THIS FACILITY

APPENDIX P

INSTALLATION STATUS REPORT

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

rev. 8/2012

Building 32, Fort Harrison  
Helena, MT



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

APPENDIX Q

FACILITY INFORMATION



BEST AVAILABLE COPY  
**Facility Information Form**  
Revised: December 4, 2013



**General Facility Information**

Date(s) of Previous IHSAs: \_\_\_\_\_

None Available

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

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

Facility Name: Building 32

Address: Fort Harrison, Helena, Montana 59636

Facility Commander: **Non-Responsive**

Name / Phone Number / email \_\_\_\_\_

Safety Officer: Unknown

Name / Phone Number / email \_\_\_\_\_

No Person(s): 6 Admin: 6 Maint: 0 Work Sched: 1 weekend month; 0700-1700 Size of Facility: Unknown  
(Include status -AGR, Fed, Tech., IDR, State or Contract Employee)

Unit(s): 103<sup>rd</sup> Public Affairs Detachment

Co-Tenant(s): None

Include UIC if available \_\_\_\_\_

List All \_\_\_\_\_

Primary work activities at Facility: Public affairs for Montana National Guard

**Written Health & Safety Programs / SOPs**

Program	Program Needed	Have Program	Date of Last Training	# Enrolled	Comments
Confined Space	NA				
Emergency Preparedness		Unknown			At the time of the IHSAs, no personnel available to provide requested documents.
Hazard Communication		Unknown			
Hearing Conservation		Unknown			
PPE	NA				
Respiratory Protection	NA				
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): Asbestos Survey,

**Non - DoD Contractors**

Service	Provider	Service	Provider
Oil / Water Separator	NA	Laundry	NA
Tools	NA	Pest Control	Post coordinates services
Rags	NA	Hazardous Waste	NA
Refuse	Post coordinates services	Crane Maintenance	NA
Others:			



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

Five <b>lead wipe</b> samples collected from drill floor (take samples from dusty horizontal floor surfaces)	<b>No</b>
Are any <b>weapons</b> cleaned in the facility, if yes where are they cleaned?	<b>No</b>
Additional <b>lead wipe</b> samples taken from 25% of the rest of the building - <b>-(on floor areas only)</b>	<b>None</b>
Is there a <b>converted indoor firing range</b> ? If so collect additional wipe samples IAW the SOW.	<b>No</b>
Is there any peeling <b>paint</b> ? Take bulk sample if able.	<b>No</b>
Are there any signs of water damage or <b>mold</b> ?	<b>None</b>
Any suspected <b>ACM</b> ? Where and what condition is it in. Bulk sample if able.	<b>Yes, Observed sheetrock and joint compound; base cove mastic; and carpet glue.</b>
Quality of housekeeping	<b>Good</b>
HVAC maintenance plan in place?	<b>Resides with FMO</b>
<b>Overall condition</b> of HVAC system	<b>Good</b>
Obtained <b>CO2, Temp, RH</b> monitoring	<b>Done</b>
<b>HAZMAT inventory</b> on hand (make copies for the report), MSDS available for all materials.	<b>None</b>
<b>HAZMAT storage</b> , Condition of lockers, if outside storage building is used is it ventilated and does it meet OSHA standards.	<b>None</b>

<b>Fire alarm</b> in working condition - -not usually in place in older armories	<b>None</b>
<b>Fire extinguishers</b> in place and properly identified and mounted	<b>Present</b>
Evidence of <b>monthly fire extinguisher inspections</b>	<b>No</b>
<b>Annual</b> fire extinguisher inspections tags current	<b>Yes</b>
Are <b>eye wash stations</b> available in areas where hazardous materials are used and are they inspected weekly (inspections must be documented)	<b>None</b>
<b>Egress</b> routes accessible and properly marked - -noted on <u>Fire Evacuation Plan</u>	<b>No egress maps</b>
<b>Training programs</b> in place; Hazcom, Respiratory Protection, Confined Spaces, Hearing conservation, PPE (if applicable)	<b>Unknown</b>
Any Photo labs	<b>No</b>
Any hazardous <b>noise</b> sources	<b>None</b>
<b>Light levels</b> checked throughout building	<b>Done</b>
<b>Breaker panels</b> properly labeled with no exposed wiring	<b>None observed</b>
<b>Check building occupancy</b>  1. How many military personnel, how many civilian personnel 2. What types of units occupy facility, i.e. Administrative, Maintenance, etc.?	<b>1. Military = 6</b>  <b>2. Civilian = 0</b> <b>103<sup>rd</sup> Public Affairs Det. administrative unit occupy the facility</b>
Any <b>civilian activities</b> in armory (cub scouts, classes, day care, parties etc)	<b>None</b>
Obtain two <b>lead air samples</b>	<b>On IHSW Request Only</b>

Evaluate Kitchen Stove Hood Flow if Present IAW NFPA Standard 96.	None
Collect Source Noise Measurements of Kitchen Appliances and Document Using DD 2214	None
Conduct a safety walkthrough of entire facility document any safety deficiencies found.	Done
<u>Take photos</u> of outside of building, all sample points and any pertinent hazards or concerns.	Done
Name of Armory, POC, phone #, address and organizations in Armory  (Add Checklist to Report)	Building 32, Fort Harrison 103 <sup>rd</sup> Public Affairs Det. <b>Non-Responsive</b> Fort Harrison, MT 406-324-3640



**APPENDIX R**

**SAFETY RELATED INFORMATION**

APPENDIX S

NOISE DOSIMETRY DATA

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**THIS TASK DOES NOT APPLY TO THIS FACILITY**



**APPENDIX S**

**NOISE DOSIMETRY DATA**

BEST AVAILABLE COPY

NOT PERFORMED AT THIS FACILITY

**APPENDIX T**

**ADDITIONAL SUPPORTING DOCUMENTATION**





## 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

## Glasgow Armory Indoor Firing Range (IFR)

81 Airport Road  
Glasgow, MT 59230

31 Oct 2013

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



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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-P

26 January 2014

MEMORANDUM THRU **Non-Responsive** DSS, 1956 Mt. Majo St., Room 1009, Helena, MT 59636

FOR Commander, Glasgow Armory Indoor Firing Range (IFR) at 81 Airport Rd., Glasgow, MT 59230

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHS AV) for Glasgow Armory Indoor Firing Range (IFR) at 81 Airport Rd., Glasgow, MT on 31 OCT 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 Glasgow Armory Indoor Firing Range (IFR) at 81 Airport Rd., Glasgow, MT on 31 OCT 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. Maintain temperatures throughout the facility IAW ASHRAE recommended range 68-75 degrees Fahrenheit (para. 5.5) (RAC 4)



ARNG-CSG-P

**SUBJECT:** Executive Summary for Industrial Hygiene Site Assistance Visit (SAV) for the Glasgow Armory Indoor Firing Range (IFR) at 81 Airport Rd., Glasgow, MT on 31 OCT 2013

b. Post warning signage at the entryway(s) of the facility and on Converted IFR door(s) to warn pregnant or nursing females and children under 7 years of age that there is a potential for elevated lead dust in this facility/area. Make sure staff and maintenance personnel are aware of the associated lead hazards. (Exec. Summary) (RAC 3)

c. Continue Good Housekeeping Practices within the armory and utilize SOP provided to help prevent migration of noted lead dust within this IFR and other occupied spaces of IFR. (Exec. Summary) (RAC 3)

d. Prohibit use of the converted IFR (locker room/gym) until the IFR is cleaned of lead below ARNG thresholds. Utilize NGP 420-15 Conversion of Indoor Firing Ranges (IFR) to have IFR properly cleaned this time around. Clean the locker room/gym in accordance with the Armory SOP for lead cleanup accompanying this report. Have follow-up testing conducted to meet acceptable concentrations. (para. 5.3) (RAC 2)

## 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).



## ARNG-CSG-P

**SUBJECT:** Executive Summary for Industrial Hygiene Site Assistance Visit (SAV) for the Glasgow Armory Indoor Firing Range (IFR) at 81 Airport Rd., Glasgow, MT on 31 OCT 2013

- 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 Montana Army National Guard Industrial Hygiene, Occupational Health and Safety Office for final review and approval (signature).
- f. Job Safety Analysis (JSA's)/Hazard Assessments.

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

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

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

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

**Non-Responsive**

**Non-Responsive**

NGB, IHSW, CIV  
Industrial Hygiene



**Industrial Hygiene Southwest**  
**Violation Inventory Log**  
**LOG OF SCHEDULE OF CORRECTIVE ACTION - COMPLIANCE WITH SAFETY AND HEALTH STANDARDS**  
**Glasgow Armory & IFR (Converted) - Glasgow, MT**

CONTROL NUMBER	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/INCOIC	Estimated Costs	DATE CORRECTED	REFERENCE
<input type="checkbox"/> CLOSED									
MTGA-10312013-4.5	A written Bloodborne Pathogen Program is not maintained on-site	Facility	4	Develop and maintain a written Bloodborne Pathogen Program on-site. Conduct and document training for facility personnel.					29 CFR 1910.1030(c)(1) 29 CFR 1910.1030(h)(8)
MTGA-10312013-5.3	Lead concentrations exceed established criteria	Converted IFR	2	Prohibit use of the converted IFR until the area is cleaned of lead below ARNG thresholds. Clean the locker in accordance with the Armory SOP for lead cleanup. Have follow-up testing conducted to meet acceptable concentrations.					29 CFR 1910.1025 (h)(1)
MTGARM-10312013-5.5	Temperatures are below the ASHRAE recommended range	Facility	4	Increase temperatures throughout the facility to meet the ASHRAE recommended range.					ASHRAE Standard 62.1-2010

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## ***ARMORY***

### **CLEANUP & FOLLOW-UP HOUSEKEEPING RECOMMENDATIONS**

#### **Materials Needed:**

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

#### **Disposal of Waste Water and Cleaning Materials:**

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



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

#### **Post-Cleanup Precautionary Measures:**

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

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

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

#### **Initial Armory Cleanup:**

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

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

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

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

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

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

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

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



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

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

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

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

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



**Industrial Hygiene Site Assistance Visit  
Glasgow Armory & IFR (Converted)  
Glasgow, Montana  
31 October 2013**



**INDUSTRIAL HYGIENE SITE ASSISTANCE VISIT (IHSV)**

**GLASGOW ARMORY & INDOOR FIRING RANGE  
(CONVERTED)**

81 AIRPORT ROAD  
GLASGOW, MONTANA 59230

**October 31, 2013**

*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.IH1449.09**

*Prepared by:*

**Non-Responsive**

*Principle-In-Charge*

*Reviewed by:*

**Non-Responsive**

*Senior Industrial Hygienist*

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## EXECUTIVE SUMMARY

On October 31, 2013, **Non-Responsive** Certified Industrial Hygienist (CIH), of Network Environmental Systems, Inc. (NES), conducted an Industrial Hygiene Site Assistance Visit (IHSAV) at the Glasgow Armory / Indoor Firing Range (IFR) combination facility, located at 81 Airport Road in Glasgow, Montana. The primary point of contact (POC) for information gathered during this survey was **Non-Responsive** who may be reached by phone at (406) 324-5525 or by email at **Non-Responsive**.

The objectives of this IHSAV were to perform the following activities:

- Evaluate work processes conducted within the facility;
- Perform an assessment & inspection of the converted IFR;
- Review hazardous material storage and use procedures;
- Review the Respiratory Protection Program and respirator use/storage;
- Collect area / breathing zone air samples;
- Collect metal surface wipe samples;
- Measure the airflow of exhaust ventilation systems;
- Collect sound level measurements;
- Measure illumination levels;
- Collect indoor air quality data;
- Evaluate existing conditions and safety hazards within the facility;
- Review safety policies/programs, training, and record keeping; and
- Conduct Hazard Assessments (HA's) where appropriate.

Significant findings for this IHSAV can be found in the Industrial Hygiene Southwest – 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 task descriptions, work space locations, regulatory requirements, and additional recommendations.

Appendices may be left blank where information has been requested from the facility and not yet received.

Commendables: **Non-Responsive** were very helpful with providing critical information during this IHSAV.

## 1.0 INTRODUCTION

On October 31, 2013, **Non-Responsive** CIH, of NES, conducted an IHSAV at the Glasgow Armory / IFR combination facility, located at 81 Airport Road in Glasgow, Montana. The primary POC for information gathered during this survey was **Non-Responsive** who may be reached by phone at (406) 324-5525 or by email at **Non-Responsive**

### 1.1 Objectives

The primary objective of the IHSAV was to evaluate the occupational environment of the areas within the Armory / IFR combination facility 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 IHSAV 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:

- Evaluate work processes conducted within the facility;
- Perform an assessment & inspection of the converted IFR;
- Review hazardous material storage and use procedures;
- Review the Respiratory Protection Program and respirator use/storage;
- Collect area / breathing zone air samples;
- Collect metal surface wipe samples;
- Measure the airflow of exhaust ventilation systems;
- Collect sound level measurements;
- Measure illumination levels;
- Collect indoor air quality data;
- Evaluate existing conditions and safety hazards within the facility;
- Review safety policies/programs, training, and record keeping; and
- Conduct Hazard Assessments (HA's) where appropriate.



## 2.0 PROCESS DESCRIPTION

The Glasgow Armory/ IFR combination facility currently has three (3) full time guard members performing administrative duties. The primary unit assigned to this facility is the 484<sup>th</sup> Military Police. The facility was constructed in 1965 and has offices used for administrative and recruiting purposes, a converted indoor firing range (IFR), a drill floor, storage rooms, classrooms, supply rooms, bathrooms and a kitchen. The facility operates weekdays, Monday thru Friday, from 0800 to 1700. The facility is occasionally rented out for civilian activities such as blood drives and parties. The primary work activity performed at the Glasgow Armory is facilitating support drills and training for the 484<sup>th</sup> Military Police. A copy of the employee list is provided in Appendix K.

The IFR had been closed in the 1980's and converted into a locker room and gym area for facility personnel. Documentation of repurposing and the date of conversion were not available during the IHSAB, however the POC indicated that records were maintained through Fort Harrison. Lead wipe sampling was performed during this IHSAB in order to confirm adequate cleaning of the IFR had been completed.

NES observed records indicating one (1) previous IHSAB had been conducted at the facility. The IHSAB was conducted by **Non-Responsive** CIH with unknown company, on 10 June 2003 and was identified as the baseline survey for the facility. NES was provided with and reviewed a copy of the report minus appendices.

### 3.0 METHODS

#### 3.1 Air Monitoring – Carbon Monoxide

Air monitoring for carbon monoxide (CO) was performed throughout the facility using a TSI QTrak Meter, model 8551. A copy of the annual calibration certificate for this instrument is located in Appendix H.

#### 3.2 Breathing Zone Air Sampling

Personal breathing zone air sampling was not conducted during the ISHAV.

#### 3.3 Lead Wipe Sampling

Lead wipe samples were collected from horizontal work and floor surfaces in various locations throughout the facility. Ghost Wipe™ brand wipes were used by wiping a one (1) square foot (ft<sup>2</sup>) area. 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

The interior and exterior of the facility was visually inspected for peeling paint on the walls and ceilings. All samples, if collected, were submitted to ALS Environmental Laboratory, located in Salt Lake City, Utah to be analyzed for lead in accordance with NIOSH Method 7300 modified method.

#### 3.5 Indoor Air Quality

Carbon dioxide (CO<sub>2</sub>), temperature, and relative humidity were measured using a TSI QTrak Meter, model 8551. Carbon dioxide 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 CO<sub>2</sub>, water vapor, and other bio effluents. The American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE), in their Standard 62.1-2010, *Ventilation for Acceptable Air Quality*, recommend maintaining CO<sub>2</sub> below a concentration that is 700 parts per million (ppm) above



outdoor levels. Outside CO<sub>2</sub> concentrations are typically about 350 ppm. Providing sufficient ventilation to maintain steady-state CO<sub>2</sub> 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). A copy of the current annual calibration certificate for this instrument is located in Appendix H.

### 3.6 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.

### 3.7 Exhaust Ventilation Survey

Air velocity and flow measurements were not collected during this IHS AV as no active ventilation systems were present.

### 3.8 Personal Noise Dosimetry & Sound-Level Measurements

Personal noise dosimetry and sound-level measurements were not collected during this IHS AV as no hazardous noise sources were identified.

### 3.9 Equipment Used

The following equipment was used for this survey:

Type	Model Number	Serial Number	Calibration Date
TSI QTrak Meter	8551	51380	October 2013
Konica Minolta Light Meter	TL-1	279019	May 2013

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



### 3.10 Quality Assurance

NES 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 and;
- Calibration of instruments, including field calibration via manufacturers' recommended procedures and routine (typically annual) off-site calibration of equipment via certified third parties.

#### **4.0 OBSERVATIONS AND RECOMMENDATIONS**

##### **4.1 Water Damage and Limited Visual Fungal Growth Evaluation**

The interior of the facility was visually inspected for water damage and subsequent fungal growth resulting from moisture. The converted IFR has had historical water intrusion according to the POC. The affected areas have since been sealed and painted. There were no visual signs of fungal growth in the converted IFR, however a musty odor was present.

##### **4.2 Facility/Building HVAC System**

An evaluation of the heating, ventilation, and air-conditioning HVAC systems that serve the Armory was conducted. This evaluation consisted of determining if a maintenance plan is in place and a visual inspection of the system. The facility HVAC systems were in good visible condition. No exposed hazards or defects were observed during the IHS AV. The HVAC system helps to provide the facility with proper indoor air quality (IAQ); temperature, humidity and CO<sub>2</sub> levels. A central HVAC system is used in the office areas.

##### **4.3 Asbestos Evaluation**

A cursory evaluation of the facility's interior and exterior 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. These building materials include the following:

- Ceiling tiles with mastic;
- 12 inch x 12 inch vinyl asbestos floor tile; and
- Base cove.

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.

#### 4.4 Hazardous Materials Inventory, Storage & Material Safety Data Sheets

A review of the facility's chemical inventory and safety data sheet (SDS) file was conducted. Chemical storage areas (i.e., flammable storage cabinets and rooms) were also inspected as part of this IHS AV. A complete inventory of hazardous materials used at the facility was made available along with corresponding SDSs. A copy of the chemical inventory is provided in Appendix D. Hazardous materials are stored inside of flammable storage lockers. These materials are kept in small quantities and the storage lockers were in good condition during this IHS AV.

#### 4.5 Safety Training and Record Keeping

A cursory review of the facility's written health and safety programs and training documentation was performed to determine if the site specific programs and annual documentation was current. The following training was reported to have been conducted, but no documentation was available at the site:

- Personal Protective Equipment
- Hazard Communication (HAZCOM)
- Hearing Conservation Program
- Emergency Preparedness Program

**Note:** NES evaluated the documents to verify their presence and implementation. NES did not evaluate the contents or quality of any of the documents identified during this visit.

#### 4.5 Safety Walk-Through

NES conducted a walk-through of the facility to identify existing conditions and whether safety hazards or deficiencies were present.

1. The facility housekeeping was good.
2. Fire extinguishers were current for monthly and annual inspections.
3. Emergency exits were unobstructed, and egress routes were posted throughout the facility.