

## 5.0 SAMPLING RESULTS

### 5.1 Air Monitoring – Carbon Monoxide

Carbon monoxide (CO) concentrations were measured at a total of eight (8) locations throughout the facility using a TSI QTrak Meter, model 8551. The concentrations of CO measured ranged from 0 to 1 ppm. These concentrations are below the exposure limit ceiling of 200 ppm set forth by NIOSH. A summary of CO measurements collected is provided in Appendix E.

### 5.2 Breathing Zone Air Sampling

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

### 5.3 Lead Wipe Sampling

Wipe samples for lead dust were collected from horizontal surfaces in selected representative areas of the Glasgow Armory / IFR 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; class 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 thirteen (13) Ghost Wipe™ lead wipe samples were collected during the IHS AV to be analyzed in accordance with NIOSH Method 7300, modified for Ghost Wipes™. Five (5) of the samples were collected from the center and four corners of the drill floor. Six (6) samples were collected from the converted indoor firing range. The other samples were collected from the kitchen countertop and training room vent duct. The analytical results are summarized in the table below. 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
103113-81-01	Drill Floor	Southwest corner, floor	3.9	$\leq 40 \mu\text{g}/\text{ft}^2$
103113-81-02	Drill Floor	Southeast corner, floor	4.0	$\leq 40 \mu\text{g}/\text{ft}^2$
103113-81-03	Drill Floor	Center, floor	5.3	$\leq 40 \mu\text{g}/\text{ft}^2$
103113-81-04	Drill Floor	Northwest corner, floor	7.3	$\leq 40 \mu\text{g}/\text{ft}^2$
103113-81-05	Drill Floor	Northeast corner, floor	5.4	$\leq 40 \mu\text{g}/\text{ft}^2$
103113-81-06	Kitchen	Countertop	6.4	$\leq 40 \mu\text{g}/\text{ft}^2$
<b>103113-81-07</b>	Converted IFR	North end, floor	<b>62</b>	$\leq 40 \mu\text{g}/\text{ft}^2$
<b>103113-81-08</b>	Converted IFR	Gym area, floor	<b>200</b>	$\leq 40 \mu\text{g}/\text{ft}^2$
103113-81-09	Converted IFR	Storage locker area, floor	31	$\leq 40 \mu\text{g}/\text{ft}^2$
103113-81-10	Converted IFR	East wall	21	$\leq 40 \mu\text{g}/\text{ft}^2$
103113-81-11	Converted IFR	Gym area, ceiling	5.9	$\leq 40 \mu\text{g}/\text{ft}^2$
<b>103113-81-12</b>	Converted IFR	Open vent duct in ceiling	<b>6700</b>	$\leq 40 \mu\text{g}/\text{ft}^2$
103113-81-13	Training Room	Composite of floor level HVAC vents	6.1	$\leq 40 \mu\text{g}/\text{ft}^2$

**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 areas sampled, except for the converted IFR ceiling vent and the floor samples collected from the gym area and north end. These locations should be cleaned to remove excess lead contamination. The Armory SOP for lead cleanup is provided in Appendix R (Safety Related Information).



## 7.0 PROJECT APPROVAL

This IHSAV was reviewed and approved by:

**Non-Responsive**

*Senior Industrial Hygienist*

January 13, 2014

Date

**Non-Responsive**

Industrial Hygiene Program Manager

January 14, 2014

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**



## 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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**PHOTO LOG**  
**GLASGOW ARMORY & IFR (CONVERTED)**  
**GLASGOW, MT**  
**OCTOBER 31, 2013**



**Photo 1: Exterior of Glasgow Armory and IFR (Converted.)**

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**APPENDIX D**

**CHEMICAL INVENTORY**



# Print Inventory

[Print Inventory](#) | [Cancel](#)

Unit: DET 1 484th MP      Storage: SC02 (MERF)      Month: 10/1/2013

SLN	Item	NSN	Manufacturer	MSDSID	Quantity	Unit of Issue	Shelf Life	HCC
	Antibacterial Soap		Gojo		3	1 gal		
	Glass Cleaner		Renown		1	1 gal		
	Glass Cleaner		Johnson Professional		1	gal		
	Sweeping Compound		AmSan Laydust		1	20 lb		
	Toilet Soap		LHD Industries		1	1 gal		
	PULL	LP	BETCO		3	QT		

Description: PH <1 (ACIDIC)

Acrylic Latex Enamel	Royal	2	1 gal
Kilz 2 latex Stainblocker	Kilz	1	gal
Interior Latex	Benjamin-More	1	1 gal

# Print Inventory

Print Inventory

Cancel

Unit: DET 1 484th MP Storage: FLAM CAB #1 Month: 10/1/2013

SLN	Item	NSN	Manufacturer	MSDSID	Quantity	Unit of Issue	Shelf Life	HCC
	All Purpose Oil		Holdens		1	4 oz		
	SAE 15w-40		Shell		1	1 qt		
	SAE 15w-40		Shell		2	1 gal		
	Transmission Fluid		ConocoPhillips		2	1 qt		
	Acetone		Klean Strip		1	1 Pint		
	Antifreeze	6850-01-441-3218	KMCO Inc		4	1 Gal		
	Battery Cleaner		Permatex		1	5 oz		
	Battery Water	6810-00-297-9540	National Industrial Products Corp.	BNCCY	2	5 Gal		
	CLP	9150-01-053-6688	CSD Inc.	CMDPJ	1	1 Gal		V5
	GAA	9150-01-197-7693	Summit Lubricants	CJJFY	3	TU		V6
	Methanol	6810-00-597-9867	F		1	1 Gal	6	F5
	Optical Lens Cleaner Type 1	6850-00-227-1887	Alfakleen Chemical Lab, Inc		3	1 QT	6	
	Plastic Polish Liquid	7930-00-933-3794	Ralkem, Inc	BWDZN	20	1 Pint	6	

Spray Paint		Skillcraft	14	12 oz
Sunbonnet Wax	7930-01-381-5838	The Butcher Co.	2	18 oz
windshield cleaning compound		Rite-Kem Inc	1	16 oz
walkway compound, nonslip		Akron Paint & varnish	1	1 gal
WD-40		WD-40	1	11 oz
Lubricating gear oil		Battenfeld	1	5 gal

# Print Inventory

Print Inventory | Cancel

Unit: DET 1 484th MP      Storage: SC03 (MERF)      Month: 10/1/2013

SLN	Item	NSN	Manufacturer	MSDSID	Quantity	Unit of Issue	Shelf Life	HCC
	Lightweight Spackling		Red Devil		1	1.2 lb		
	Wallboard Joint Compound		DAP		1	3 lb		



# Print Inventory

Print Inventory Cancel

Unit: DET 1 484th  
MP

Storage: SC01 (Utility  
Closet)

Month:  
10/1/2013

SLN	Item	NSN	Manufacturer	MSDSID	Quantity	Unit of Issue	Shelf Life	HCC
	Toilet Soap, Bar		Valley Products Co.		7	3.25 oz		
	Mecrel Antibacterial Lotion Soap	8520-01-490-7367	Gojo		3	1 Gal		
	Toilet Soap	8520-00-228-0598	SoSure		2	1 Gal		

## Print Inventory


Unit: DET 1 484th  
MPStorage: SC02 (Utility  
Closet)Month:  
10/1/2013

SLN	Item	NSN	Manufacturer	MSDSID	Quantity	Unit of Issue	Shelf Life	HCC
	Bufferall		Rochester Midland Corp		4	1 gal		
	General Purpose Floor Cleaner		Renown		1	1 gal		
	Glass Cleaner		Renown		2	1 gal		
	Home Defense Max		Ortho		1	24 oz		
	Mr. Clean Multi-Purpose Cleaner		Mr Clean		1	40 oz		
	Pine-Sol		Pine-Sol		1	1 gal		
	Powdered Detergent Disinfectant		STEARNS		2	2.81 lbs		
	Pure Bright		KIK International		2	1 gal		
	Simple Green		Simple Green		1	1 gal		
	Axe It Plus		Betco		7	1 Gal		
	Floor Sealer		Betco		2	1 Gal		
	Glare		Betco		1	1 Gal		

Hard Power	Bridgepoint Systems	1	1 Gal
Hi Tech	Betco	1	1 Gal
Power Time	Rochester Midland Corp.	1	1 Gal

# Print Inventory

Print Inventory Cancel

Unit: DET 1 484th  
MP

Storage: SC03 (utility  
Closet)

Month:  
10/1/2013

SLN	Item	NSN	Manufacturer	MSDSID	Quantity	Unit of Issue	Shelf Life	HCC
	Bowl Blocks		Krystal		24	4 oz		
	Classic Shine		Unisource		6	17 oz		
	Febreeze Lavender Vanilla		Mr. Clean		1	1 qt		
	Good Sense		Johnson Wax Professional		2	13 oz		
	Heavy Starch		Faultless		1	22 oz		
	Quik Solv Spray Cleaner		AJAX		1	1 qt		
	Ramik Green		HACCO Inc		2	20 lb		
	Tub & Shower Cleaner		The Works		1	1 qt		
	Urinal Blocks		Krystal		48	4 oz		



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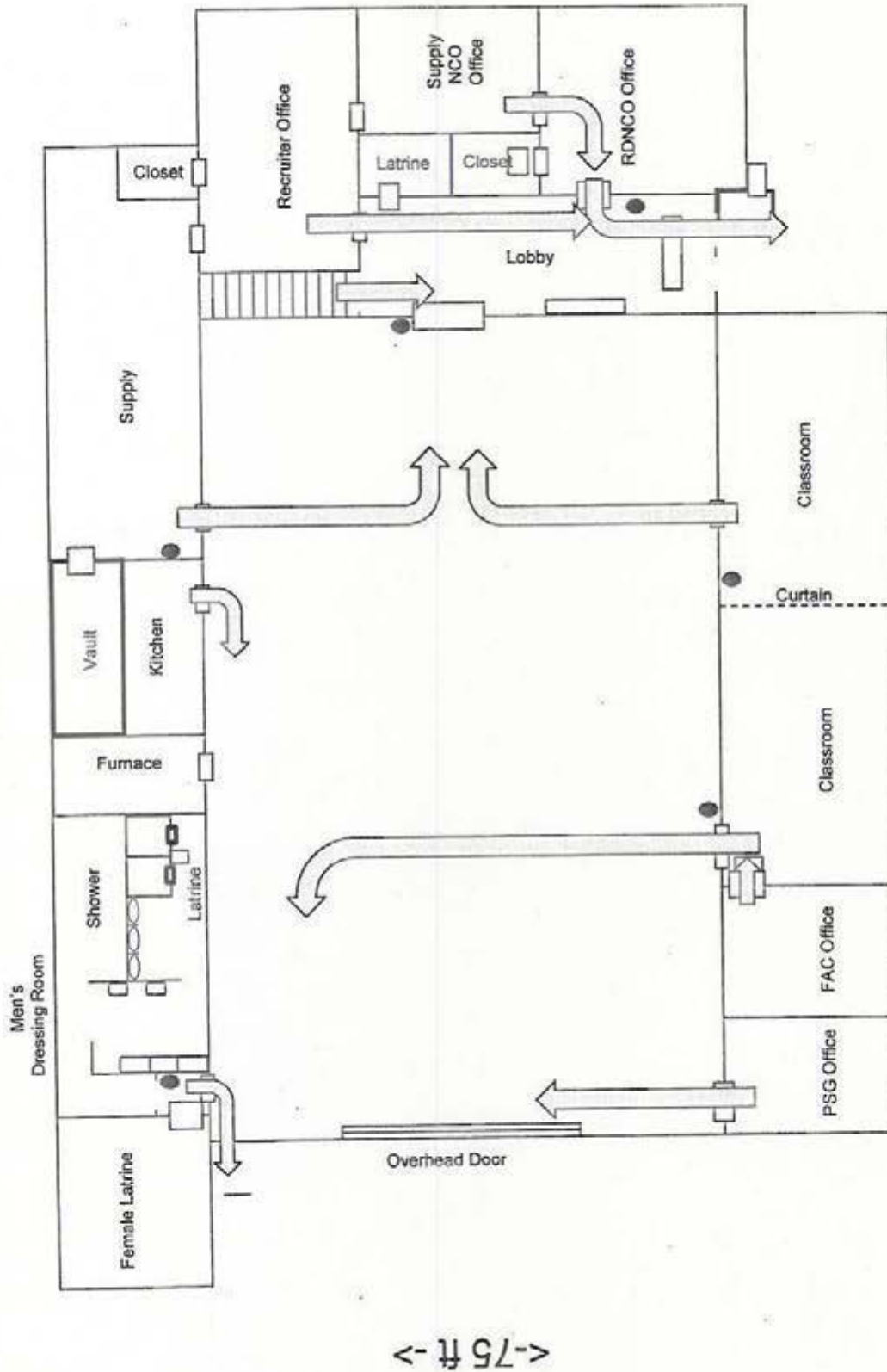
**APPENDIX E**

**FLOOR PLAN/ILLUMINATION SURVEY/IAQ - TEMP, RH & CO2 MONITORING**

09

# Glasgow Armory 1st Floor

<- 115 ft ->

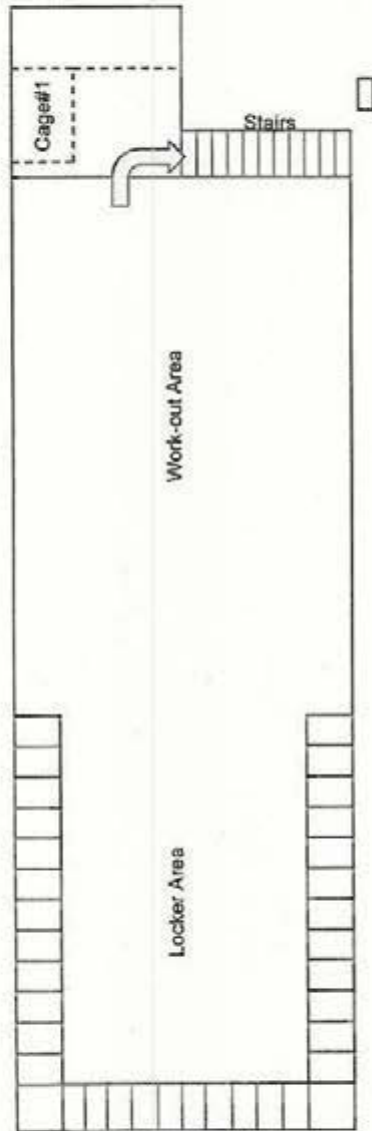


<- 75 ft ->

● = Fire Extinguisher

09

# Glasgow Armory Basement

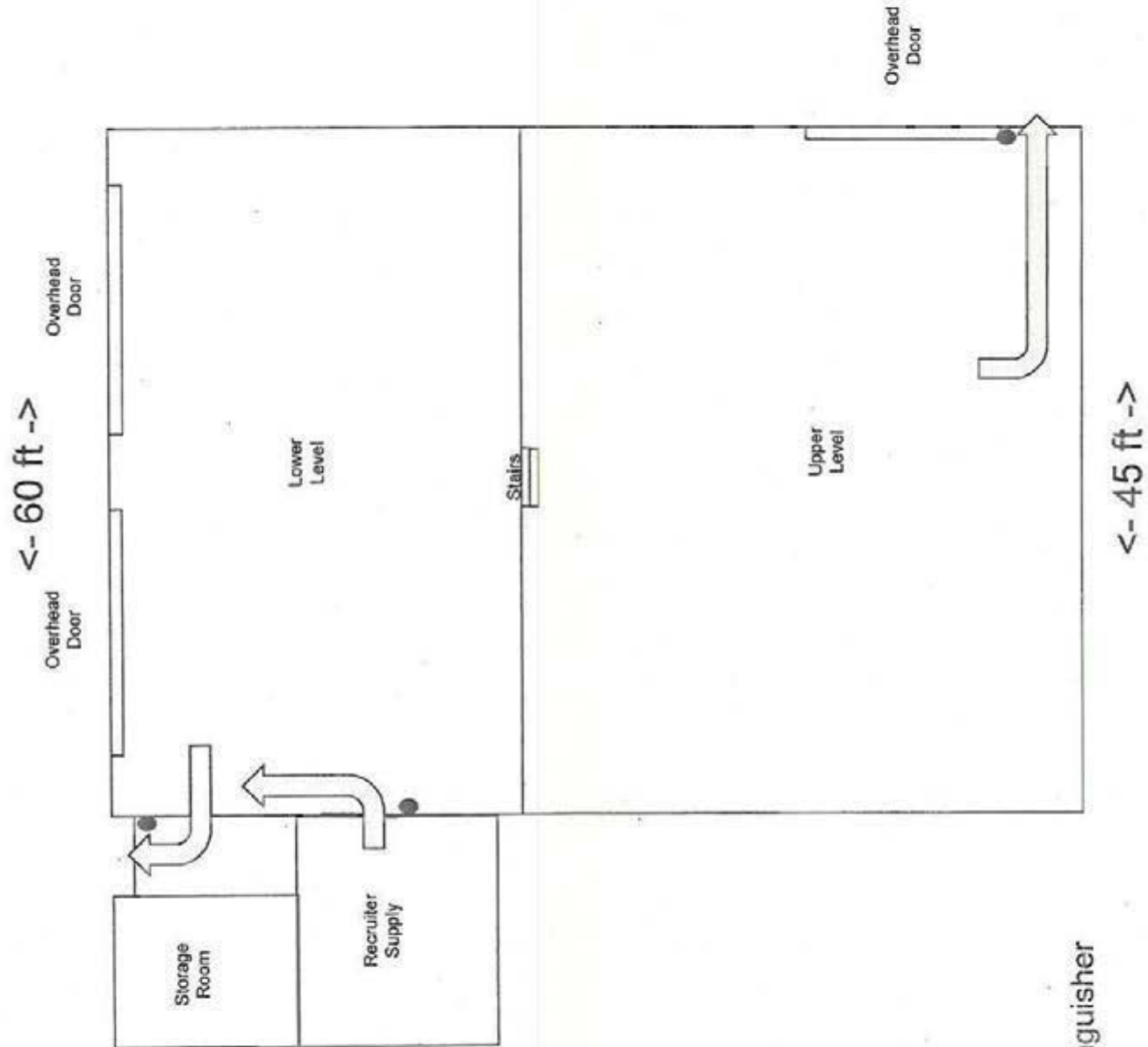


● = Fire Extinguisher



60

<- 150 ft ->



● = Fire Extinguisher

Glasgow Armory  
MIRF

**ILLUMINATION SURVEY**  
**GLASGOW ARMORY AND IFR (CONVERTED)**  
**GLASGOW, MT**  
**31 OCTOBER 2013**

Room	Location	Light Measurement (FC)	Minimum Lighting Requirement (FC)
Office	Desktop	126	$\geq 50$
Drill Floor	North End	121	$\geq 30$
Classroom	Center of room	67	$\geq 50$
Men's Restroom	Center of room	63	$\geq 10$
Kitchen	Center of room	65.6	$\geq 30$
Drill Floor	South End	177	$\geq 30$
Converted IFR	North End	67.3	$\geq 10$
Converted IFR	South End	72.3	$\geq 10$

\*FC = foot candle measurement

**Bold** = Insufficient Lighting

**IAQ MEASUREMENTS**  
**GLASGOW ARMORY & IFR (CONVERTED)**  
**GLASGOW, MT**  
**31 OCTOBER 2013**

Location	CO <sub>2</sub> max permissible level 1,073 ppm	Temperature permissible range 68 - 75°F	RH% permissible range 30-60%	CO Max permissible 200 ppm STEL
Office	638	64.4	33.6	0
Drill Floor (North)	573	64.7	31.3	1
Classroom	520	65.6	30.6	0
Men's Restroom	471	68.5	30.3	0
Kitchen	527	66.9	29.7	0
Drill Floor (South)	485	65.5	28.4	0
Converted IFR (North)	514	64.6	29.9	0
Converted IFR (South)	496	62.5	33.1	0
Outside	373	51.6	27.4	1

**BOLD = Outside of permissible range**

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

CO = Carbon Monoxide

°F = Fahrenheit

RH = Relative Humidity

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**APPENDIX F**

**VENTILATION DATA**

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**APPENDIX G**

**FIELD NOTES**

October  
31, 2013

Glasgow Armory + CIFR

009

Non-Responsive

CIFR located in basement of the  
Armory, converted  
81 Airport Road, Glasgow MT 59230

IFR closed in mid-80's

Armory Built - 1965

CIFR = Chris Denning, Ft. Harrison, FMO  
- has records on IFR shut down +  
cleaning per

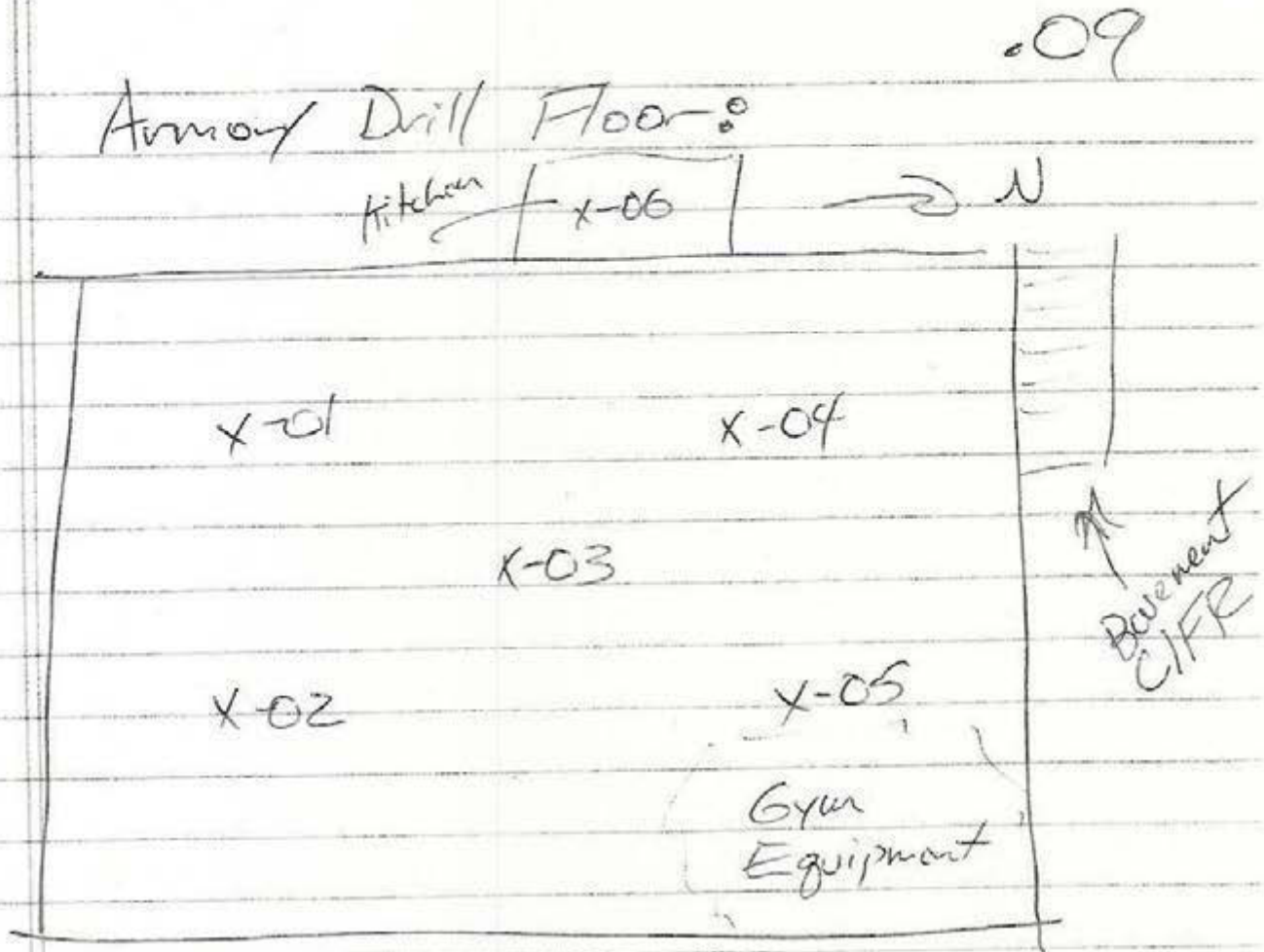
Non-Responsive

MURF -

"Multiuse indoor range facility"  
Used for Tanks as a firing Range,  
Per SFC John Wiese the back stop  
design was incorrect, so similar to  
the MURF in Glendive, was used  
once + shut down. Sand Floor  
on east end of MURF paved w/  
concrete + now used for cold  
storage.

- Two exhaust drops ~~exist~~, formerly used  
for the MIAI Tank Range target practice.  
Given the facility is no longer used for  
this purpose, the exhaust drops (designed  
for tanks) are no longer used.



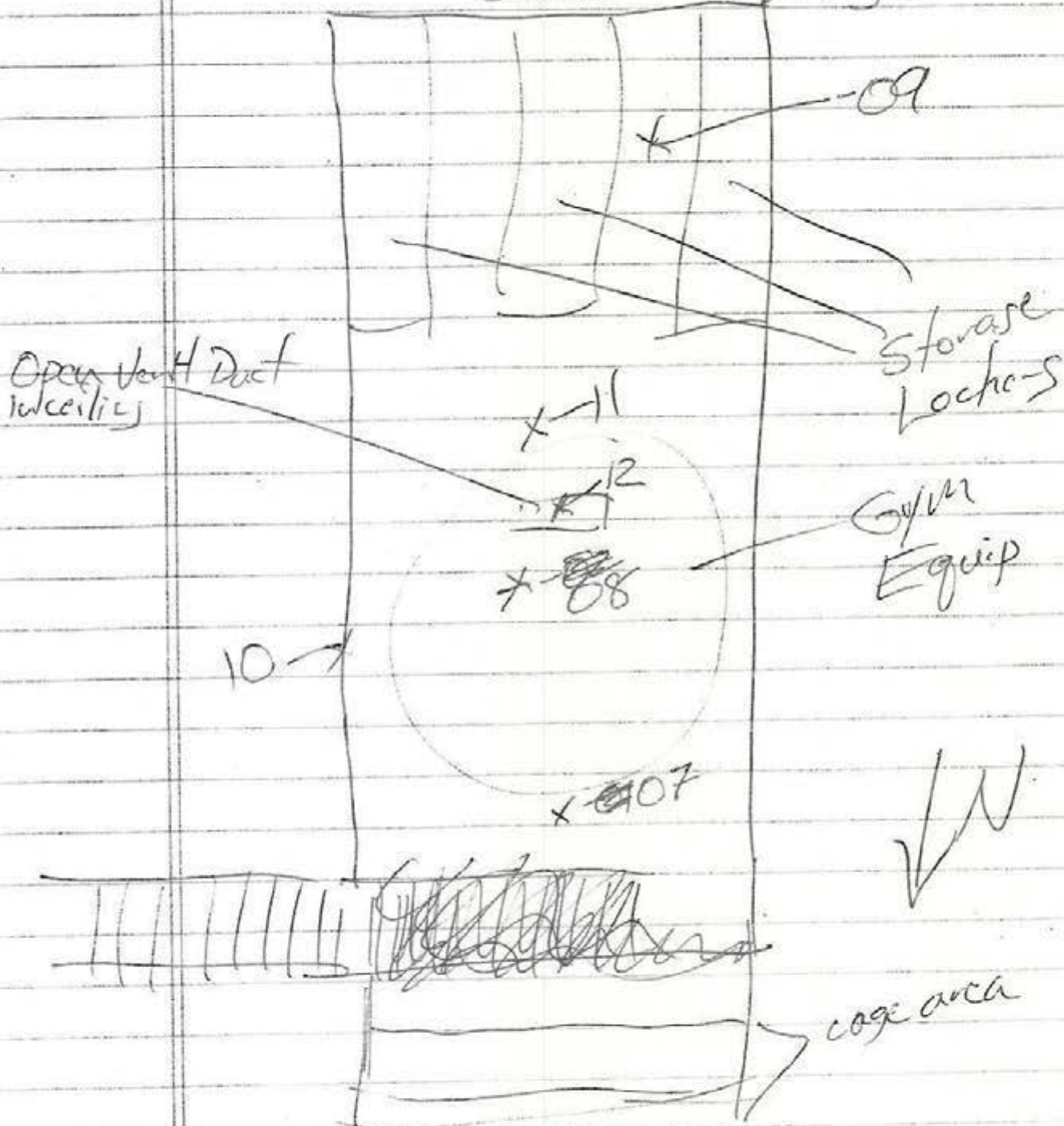


Weapons are cleaned on the Drill Floor

Sample No. Location/Description

- 01 Concrete Drill Floor - See site map above
- 02 " " "
- 03 " " "
- 04 " " "
- 05 " " "
- 06 Kitchen counter-tops

CIFR Closed Firing Range 009



Concrete walls floor & ceiling  
 Historical water intrusion problem - smells  
 musty - Rec. Mold Testings  
 Concrete walls, floors & ceiling all painted &  
 sealed



## CIHR Lead Wipe Sampling. 09.

Sample No.	Location/Description
-07	Concrete Floor - See Site Map
-08	" "
-09	" "
-10	Concrete Wall
-11	Concrete Ceiling

Armory - Housekeeping Good

No activities to perform an Exposure Assessment

**Non-Responsive** the Safety POC arrived late in the IHSAN + provided program (IH/safety) Info.

Suspect ACM's observed, 12x12 VAT, Base Cove, Ceiling Tiles  
- Observed condition was good, undamaged

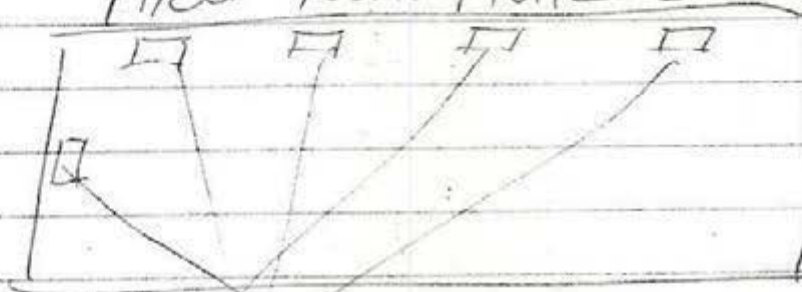
F- No training Records avail onsite  
- Haz Com, Emergency Preparedness, PPE, etc  
- Fire Ext. Training

.09

MURF-

exhaust drop - ventl turn on requires  
a key which was not avail.  
- exhaust drops (2) No. + So. Not used.

Class Room - Lead wipe sampling -  
Floor level HVAC Grilles



X-13 surface samples





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## Wipe Sampling Summary Form

Facility: Glasgow Armory C1FRCollected By: Non-ResponsiveDate & Time: 10-31-13 11am

Revised: September 18, 2013



Sample Information		Sample Area	Area Units	Analyte(s)	
1	Sample Number:	103113-81-01	1	sq ft	Lead
	Sample Location:	Drill Floor--See Map			
2	Sample Number:	103113-81-02	1	1	1
	Sample Location:	Drill Floor			
3	Sample Number:	103113-81-03	1	1	1
	Sample Location:	Drill Floor			
4	Sample Number:	103113-81-04	1	1	1
	Sample Location:	Drill Floor			
5	Sample Number:	103113-81-05	1	1	1
	Sample Location:	Drill Floor			
6	Sample Number:	103113-81-06	1	1	1
	Sample Location:	Kitchen Counters			
7	Sample Number:	103113-81-07	1	1	1
	Sample Location:	CIFR Concrete Floor			
8	Sample Number:	103113-81-08	1	1	1
	Sample Location:	CIFR Concrete Floor			
9	Sample Number:	103113-81-09	1	1	1
	Sample Location:	CIFR Concrete Floor			
10	Sample Number:	103113-81-10	1	1	1
	Sample Location:	CIFR Concrete Wall			
11	Sample Number:	103113-81-11	1	1	1
	Sample Location:	CIFR Concrete Ceiling			
12	Sample Number:	103113-81-12	1	1	1
	Sample Location:	CIFR Vent Duct			
13	Sample Number:	103113-81-13	1	1	1
	Sample Location:	Tertiary Rm Vent Duct			



## IAQ &amp; Illumination Measurements

Facility: Glasgow Army & CTRDate: 10-31-13

Revised: September 18, 2013

.09



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)
Office	638	64.4	33.6	0	126
Drill Floor No. 573	573	64.7	31.3	1	121
Class Room	520	65.6	30.6	0	67
Mens RR	471	68.5	30.3	0	03
Kitchen	527	66.9	29.7	0	65.6
Drill Floor South	485	65.5	28.4	0	177
CTR-North	514	64.6	29.9	0	67.3
CTR-SO	496	62.5	33.1	0	72.3
Outside	373	51.6	22.4	1	—

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

°F = Fahrenheit

RH = Relative Humidity

CO = Carbon Monoxide

STEL = Short Term Exposure Limit





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## Facility Information Form

Revised: September 19, 2013



## General Facility Information

Date(s) of Previous IHSAs: June 10, 03IH(s): **Non-Responsive**Date(s) of IHSAs: 10-31-13Facility Name: Glasgow Armor & C IFRAddress: 81 Airport Road, Glasgow MT 59230Facility Commander: **Non-Responsive**, 406-324-5525

Phone Number / email

**Non-Responsive**

Safety Officer:

Phone Number / email

No Person(s): 3Admin: 3Maint: 0Work Sched: M-F 8-5Size of Facility: approx 5625 ft<sup>2</sup>

First F

Unit(s): 484<sup>th</sup> Military PoliceCo-Tenant(s): Recruiter - Natl. Guard

Include UIC if available

List All

Primary work activities at Facility:

Support Drills, 484<sup>th</sup> MP Training**Non-Responsive**

## Written Health &amp; Safety Programs / SOPs

Interview w/

Program	Program Needed	Have Program	Date of Last Training	# Enrolled	Comments
Bloodborne Pathogen	✓				No written program
Confined Space	None at Facility				
Emergency Preparedness		✓	Not Available		
Hazard Communication	✓	✓	9-17-13	1	No written program
Hearing Protection	✓	✓			No written program
Lock Out / Tag Out		NA			
PPE	✓	✓			No written program
Respiratory Protection	✓	NA			
Vision		✓			Read through <del>the</del> Medical

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

No training Records Available

## 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-Responsive**June 10, 2003



## General Safety Compliance Assessment Form

Facility: Edwards Army & CTRDate: 10-31-13

Revised: September 18, 2013



<b>Hazardous Materials (1910.106 - .107)</b>	<u>Applicable</u>	<u>Not Applicable</u>
Storage (quantity, upright, sealed)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Storage cabinet (flammable & corrosive)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Safety equip. present (eyewash / shower/spill kit)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Hazard signs at entrance (NFPA, etc.)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Proper segregation	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<b>Hearing Conservation / Noise (1910.95)</b>	<u>Applicable</u>	<u>Not Applicable</u>
Audiometric testing	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Noise haz. areas (>85dBA) present / labeled	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Exposure monitoring	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<b>Heat Stress (General Duty Clause)</b>	<u>Applicable</u>	<u>Not Applicable</u>
Worksite evaluation	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Precaution / control measures	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<b>Ladders (1910.25 - .27)</b>	<u>Applicable</u>	<u>Not Applicable</u>
Sturdy / good condition	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Training received / documented	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<b>Overhead Crane (1910.179)</b>	<u>Applicable</u>	<u>Not Applicable</u>
Written procedures	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Training received / documented	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Rated load markers	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Warning devices (power travel mechanism)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Inspection / testing / certification	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<b>PPE (1910.132, .133, &amp; .135 - .138)</b>	<u>Applicable</u>	<u>Not Applicable</u>
Proper type / selection / use	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Hazard assessment conducted	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<b>Respiratory Protection (1910.134)</b>	<u>Applicable</u>	<u>Not Applicable</u>
Proper type / selection / use	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Medical surveillance / fit-testing	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<b>Walking / Working Surfaces (1910.22)</b>	<u>Applicable</u>	<u>Not Applicable</u>
Floors / aisles dry	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Floors / aisles unobstructed	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Openings guarded	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<b>Welding, Cutting, Brazing (1910.94 &amp; 251 - 255)</b>	<u>Applicable</u>	<u>Not Applicable</u>
Local exhaust ventilation	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Exposure assessment conducted	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Guards / barriers	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<b>Building Material Hazards</b>	<u>Building Age unknown, Appears to be Pre-1978</u>	
<b>Asbestos</b>	<u>Unknown - No report available</u>	
Suspect materials present	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Is there an ACM Inspection Report	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<b>Lead</b>	<u>Unknown - No report avail</u>	
Peeling paint present	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<b>Mold</b>	<u>Water seepage into CTR, during wet season</u>	
Is there evidence of moisture intrusion?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Is there current moisture intrusion?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Is there visible mold growth?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No





## General Safety Compliance Assessment Form

Facility: Chesapeake Army + C.I.F.RDate: 10-31-13

Revised: September 18, 2013

09



Bloodborne Pathogens (1910.1030)	<u>Applicable</u>	Not Applicable
Waste containers	<u>Yes</u>	<u>No</u>
PPE available	<u>Yes</u>	<u>No</u>
Compressed Gases (1910.101 - .105)	<u>Applicable</u>	<u>Not Applicable</u>
Labeled (contents / empty)	<u>Yes</u>	<u>No</u>
Good condition	<u>Yes</u>	<u>No</u>
Proper storage (O <sub>2</sub> vs. flammable, chained, upright, etc.)	<u>Yes</u>	<u>No</u>
Flammable cylinders grounded	<u>Yes</u>	<u>No</u>
Confined Space (1910.146)	<u>Applicable</u>	<u>Not Applicable</u>
Labeled w/ "Danger" sign(s)	<u>Yes</u>	<u>No</u>
Calibrated direct reading instruments	<u>Yes</u>	<u>No</u>
Entry materials / supplies	<u>Yes</u>	<u>No</u>
Electrical Safety (1910.301 - .335)	<u>Applicable</u>	<u>Not Applicable</u>
GFCI plugs	<u>Yes</u>	<u>No</u>
Loose / hazardous wires	<u>Yes</u>	<u>No</u>
Electrical panels unobstructed & labeled	<u>Yes</u>	<u>No</u>
High voltage (>600V); signage / work	<u>Yes</u>	<u>No</u>
Emergency Eyewash / Shower (1910.151)	<u>Applicable</u>	<u>Not Applicable</u>
Inspection records	<u>Yes</u>	<u>No</u>
Unobstructed	<u>Yes</u>	<u>No</u>
Properly protected (caps over eyewash, etc.)	<u>Yes</u>	<u>No</u>
Emergency Preparedness (1910.34 - .38)	<u>Applicable</u>	Not Applicable
Alarm system	<u>Yes</u>	<u>No</u>
Exits marked / free of obstruction	<u>Yes</u>	<u>No</u>
Ergonomics (Gen. Duty Clause)	<u>Applicable</u>	<u>Not Applicable</u>
Workplace evaluation conducted	<u>Yes</u>	<u>No</u>
Hazard control / precautions in place	<u>Yes</u>	<u>No</u>
Fall Protection (1910.23 - .28 & 1926.501-.503)	<u>Applicable</u>	<u>Not Applicable</u>
Elevations of 4ft have railings / toeboard	<u>Yes</u>	<u>No</u>
Fall protection is in good condition	<u>Yes</u>	<u>No</u>
Training received / documented	<u>Yes</u>	<u>No</u>
Fire Safety (1910.39 & 1910.157)	<u>Applicable</u>	Not Applicable
Fire extinguishers present	<u>Yes</u>	<u>No</u>
Fire extinguishers properly inspected	<u>Yes</u>	<u>No</u>
Sprinklers unobstructed	<u>Yes</u>	<u>No</u>
Training received / documented	<u>Yes</u>	<u>No</u>
Forklift, Jacks & Industrial Trucks (1910.178)	<u>Applicable</u>	<u>Not Applicable</u>
Labeled with inspection / service date	<u>Yes</u>	<u>No</u>
Training received / documented	<u>Yes</u>	<u>No</u>
Overhead protection	<u>Yes</u>	<u>No</u>
Hand & Powered Tools (1910.241 - .244)	<u>Applicable</u>	<u>Not Applicable</u>
Proper guarding & controls	<u>Yes</u>	<u>No</u>
3-prong power cord	<u>Yes</u>	<u>No</u>
Inspections	<u>Yes</u>	<u>No</u>
Hazard Communication (1910.1200)	<u>Applicable</u>	Not Applicable
Chemical inventory	<u>Yes</u>	<u>No</u>
Materials labeled	<u>Yes</u>	<u>No</u>
MSDS available	<u>Yes</u>	<u>No</u>

09 1

# **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
Are any weapons cleaned in the facility, if yes where are they cleaned?	Drill Floor Only
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.	Yes, Lead wipe samples collected
Is there any peeling paint? Take bulk sample if able.	Damaged paint in CIPR from localized water intrusion
Are there any signs of water damage or mold?	No visible mold, v. musty smell in CIPR
Any suspected ACM? Where and what condition is it in. Bulk sample if able.	Unknown
Quality of housekeeping	Good
HVAC maintenance plan in place?	No formal Plan, They contact Howard Vandervoos, State Maintenance
Overall condition of HVAC system	Works Fine
Obtained CO2, Temp, RH monitoring	Done
HAZMAT inventory on hand (make copies for the report), MSDS available for all materials.	Done
HAZMAT storage, Condition of lockers, if outside storage building is used is it ventilated and does it meet OSHA standards.	Yes, Inventory of MSDS for Flam lockers



Fire alarm in working condition - -not usually in place in older armories	<del>Yes</del> No
Fire extinguishers in place and properly identified and mounted	Yes
Evidence of monthly fire extinguisher inspections	Yes
Annual fire extinguisher inspections tags current	Yes
Are eye wash stations available in areas where hazardous materials are used and are they inspected weekly (inspections must be documented)	None
Egress routes accessible and properly marked - -noted on <u>Fire Evacuation Plan</u>	Yes
Training programs in place; Hazcom, Respiratory Protection, Confined Spaces, Hearing conservation, PPE (if applicable)	None Available
Any Photo labs	None
Any hazardous noise sources	None
Light levels checked throughout building	Yes
Breaker panels properly labeled with no exposed wiring	Yes
Check building occupancy 1. How many military personnel, how many civilian personnel 2. What types of units occupy facility, i.e. Administrative, Maintenance, etc.?	<del>Outside organizations:</del> USDA, Blood Drives, See Facility Info Form
Any civilian activities in armory (cub scouts, classes, day care, parties etc)	USDA, Blood Drives, Christmas Dinners
Obtain two lead air samples	On IHSW Request Only None

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





# Industrial Hygiene Site Assessment Visit (IHSAV)

*Glasgow  
Armory*

Scope of Work:  
Armory Facilities  
Revised: September 4, 2013

*09*



Complete each of the following tasks:

✓	Conduct Opening Conference
✓	- Complete <b>Facility Information Form</b>
✓	- Obtain any existing / previous IH Reports
✓	Complete the <b>Armory Checklist Form</b>
✓	- Collect 5 lead wipe samples
✓	- Document samples collected in <b>Wipe Sampling Summary Form</b>
✓	- Note conditions observed
✓	Complete the <b>ARNG Site Assistance Visit Checklist Form</b>
✓	Collect IAQ & Lighting measurements; record data on <b>IAQ/Illumination Measurement Form</b>
✓	Collect noise measurements (kitchen & other loud equipment present in armory); record data on <b>Noise Survey Form</b> <i>No loud equip, no vent in kitchen</i>
<i>Not Used</i>	Collect ventilation measurements of LEV systems; sketch cross section & measurement locations; include measurement data (no form available)
✓	Obtain any other <i>None</i> information believed to be pertinent to occupational exposures / hazards
✓	Take Photographs; including front / back of facility & <b>ANY</b> condition observed

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**APPENDIX H**

**CALIBRATION CERTIFICATES**

# Tektronix

## Certificate of Calibration



7323005

Certificate Page 1 of 2

### Instrument Identification

Company ID: 607229

INDUSTRIAL HYGIENE SW

Non-Responsive

10510 SUPERFORTRESS AVE  
SUITE C  
MATHER, CA 95655

PO Number

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: LEFT AS FOUND

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

Remarks:

Technician:

Non-Responsive

Cal Date 02May2013

Cal Due Date: 02May2014

Interval: 12 MONTHS

Temperature: 23.0 C

Humidity: 47.0 %

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

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

Approved By:  
Service Representative

Non-Responsive

### Calibration Standards

NIST Traceable#	Inst. ID#	Description	Manufacturer	Model	Cal Date	Date Due
1700294956	17-1001076	0 STEEL RULE	STARETT	C418R-72	22Mar2013	22Mar2014
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
1700285555	4063RC	MULTIMETER	FLUKE	8842A	06Aug2012	26Aug2013





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**

ID.	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	Description
MANUFACTURER	MANUAL REV CONTROL

Calibrating Technician:

**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 manufacture'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.

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**TABLE 1**  
**LEAD WIPE SAMPLE RESULTS**  
**GLASGOW ARMORY AND CONVERTED IFR**  
**GLASGOW, MT**  
**31 OCTOBER 2013**

Sample Number	Sample Area	Sample Location	Results ( $\mu\text{g}/\text{ft}^2$ )	ARNG Standard ( $\mu\text{g}/\text{ft}^2$ )
103113-81-01	Drill Floor	Southwest corner, floor	3.9	$\leq 40 \mu\text{g}/\text{ft}^2$
103113-81-02	Drill Floor	Southeast corner, floor	4.0	$\leq 40 \mu\text{g}/\text{ft}^2$
103113-81-03	Drill Floor	Center, floor	5.3	$\leq 40 \mu\text{g}/\text{ft}^2$
103113-81-04	Drill Floor	Northwest corner, floor	7.3	$\leq 40 \mu\text{g}/\text{ft}^2$
103113-81-05	Drill Floor	Northeast corner, floor	5.4	$\leq 40 \mu\text{g}/\text{ft}^2$
103113-81-06	Kitchen	Countertop	6.4	$\leq 40 \mu\text{g}/\text{ft}^2$
<b>103113-81-07</b>	<b>Converted IFR</b>	<b>North end, floor</b>	<b>62</b>	$\leq 40 \mu\text{g}/\text{ft}^2$
<b>103113-81-08</b>	<b>Converted IFR</b>	<b>Gym area, floor</b>	<b>200</b>	$\leq 40 \mu\text{g}/\text{ft}^2$
103113-81-09	Converted IFR	Storage locker area, floor	31	$\leq 40 \mu\text{g}/\text{ft}^2$
103113-81-10	Converted IFR	East wall	21	$\leq 40 \mu\text{g}/\text{ft}^2$
103113-81-11	Converted IFR	Gym area, ceiling	5.9	$\leq 40 \mu\text{g}/\text{ft}^2$
<b>103113-81-12</b>	<b>Converted IFR</b>	<b>Open vent duct in ceiling</b>	<b>6700</b>	$\leq 40 \mu\text{g}/\text{ft}^2$
103113-81-13	Training Room	Composite of floor level HVAC vents	6.1	$\leq 40 \mu\text{g}/\text{ft}^2$

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

**Bold** = Above ARNG Standard limit



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**APPENDIX J**

**LABORATORY REPORTS**



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## ANALYTICAL REPORT

Report Date: December 02, 2013

**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: 34-1332431

Client Project ID: 013.IH1449.09/Glasgow, MT

Purchase Order: 013.IH1449.09

Project Manager: **Non-Responsive**

## Analytical Results

Sample ID: 103113-81-01		Collected: 10/31/2013	
Lab ID: 1332431001		Received: 11/20/2013	
Method: NIOSH 7300 Mod.		Media: Ghost Wipe	
		Sampling Parameter: Area 1 ft <sup>2</sup>	
		Prepared: 11/26/2013	
		Analyzed: 11/27/2013	
Analyte	ug/sample	ug/ft <sup>2</sup>	RL (ug/sample)
Lead	3.9	3.9	1.3

Sample ID: 103113-81-02		Collected: 10/31/2013	
Lab ID: 1332431002		Received: 11/20/2013	
Method: NIOSH 7300 Mod.		Media: Ghost Wipe	
		Sampling Parameter: Area 1 ft <sup>2</sup>	
		Prepared: 11/26/2013	
		Analyzed: 11/27/2013	
Analyte	ug/sample	ug/ft <sup>2</sup>	RL (ug/sample)
Lead	4.0	4.0	1.3

Sample ID: 103113-81-03		Collected: 10/31/2013	
Lab ID: 1332431003		Received: 11/20/2013	
Method: NIOSH 7300 Mod.		Media: Ghost Wipe	
		Sampling Parameter: Area 1 ft <sup>2</sup>	
		Prepared: 11/26/2013	
		Analyzed: 11/27/2013	
Analyte	ug/sample	ug/ft <sup>2</sup>	RL (ug/sample)
Lead	5.3	5.3	1.3

Sample ID: 103113-81-04		Collected: 10/31/2013	
Lab ID: 1332431004		Received: 11/20/2013	
Method: NIOSH 7300 Mod.		Media: Ghost Wipe	
		Sampling Parameter: Area 1 ft <sup>2</sup>	
		Prepared: 11/26/2013	
		Analyzed: 11/27/2013	
Analyte	ug/sample	ug/ft <sup>2</sup>	RL (ug/sample)
Lead	7.3	7.3	1.3

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

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## ANALYTICAL REPORT

Workorder: 34-1332431  
Client Project ID: 013.IH1449.09/Glasgow, MT  
Purchase Order: 013.IH1449.09  
Project Manager: Non-Responsive

## Analytical Results

Sample ID: <b>103113-81-05</b>		Collected: 10/31/2013	
Lab ID: 1332431005		Received: 11/20/2013	
Method: NIOSH 7300 Mod.		Media: Ghost Wipe	
		Sampling Parameter: Area 1 ft <sup>2</sup>	
Prepared: 11/26/2013		Analyzed: 11/27/2013	
Analyte	ug/sample	ug/ft <sup>2</sup>	RL (ug/sample)
Lead	5.4	5.4	1.3

Sample ID: <b>103113-81-06</b>		Collected: 10/31/2013	
Lab ID: 1332431006		Received: 11/20/2013	
Method: NIOSH 7300 Mod.		Media: Ghost Wipe	
		Sampling Parameter: Area 1 ft <sup>2</sup>	
Prepared: 11/26/2013		Analyzed: 11/27/2013	
Analyte	ug/sample	ug/ft <sup>2</sup>	RL (ug/sample)
Lead	6.4	6.4	1.3

Sample ID: <b>103113-81-07</b>		Collected: 10/31/2013	
Lab ID: 1332431007		Received: 11/20/2013	
Method: NIOSH 7300 Mod.		Media: Ghost Wipe	
		Sampling Parameter: Area 1 ft <sup>2</sup>	
Prepared: 11/26/2013		Analyzed: 11/27/2013	
Analyte	ug/sample	ug/ft <sup>2</sup>	RL (ug/sample)
Lead	62	62	1.3

Sample ID: <b>103113-81-08</b>		Collected: 10/31/2013	
Lab ID: 1332431008		Received: 11/20/2013	
Method: NIOSH 7300 Mod.		Media: Ghost Wipe	
		Sampling Parameter: Area 1 ft <sup>2</sup>	
Prepared: 11/26/2013		Analyzed: 11/27/2013	
Analyte	ug/sample	ug/ft <sup>2</sup>	RL (ug/sample)
Lead	200	200	1.3

Sample ID: <b>103113-81-09</b>		Collected: 10/31/2013	
Lab ID: 1332431009		Received: 11/20/2013	
Method: NIOSH 7300 Mod.		Media: Ghost Wipe	
		Sampling Parameter: Area 1 ft <sup>2</sup>	
Prepared: 11/26/2013		Analyzed: 11/30/2013	
Analyte	ug/sample	ug/ft <sup>2</sup>	RL (ug/sample)
Lead	31	31	13

Sample ID: <b>103113-81-10</b>		Collected: 10/31/2013	
Lab ID: 1332431010		Received: 11/20/2013	
Method: NIOSH 7300 Mod.		Media: Ghost Wipe	
		Sampling Parameter: Area 1 ft <sup>2</sup>	
Prepared: 11/26/2013		Analyzed: 11/27/2013	
Analyte	ug/sample	ug/ft <sup>2</sup>	RL (ug/sample)
Lead	21	21	1.3





## ANALYTICAL REPORT

Workorder: 34-1332431  
Client Project ID: 013.IH1449.09/Glasgow, MT  
Purchase Order: 013.IH1449.09  
Project Manager: Non-Responsive

## Analytical Results

Sample ID: 103113-81-11		Collected: 10/31/2013	
Lab ID: 1332431011		Received: 11/20/2013	
Method: NIOSH 7300 Mod.		Media: Ghost Wipe	
		Sampling Parameter: Area 1 ft <sup>2</sup>	
		Prepared: 11/26/2013	
		Analyzed: 11/27/2013	
Analyte	ug/sample	ug/ft <sup>2</sup>	RL (ug/sample)
Lead	5.9	5.9	1.3

Sample ID: 103113-81-12		Collected: 10/31/2013	
Lab ID: 1332431012		Received: 11/20/2013	
Method: NIOSH 7300 Mod.		Media: Ghost Wipe	
		Sampling Parameter: Area 1 ft <sup>2</sup>	
		Prepared: 11/26/2013	
		Analyzed: 11/30/2013	
Analyte	ug/sample	ug/ft <sup>2</sup>	RL (ug/sample)
Lead	6700	6700	6.3

Sample ID: 103113-81-13		Collected: 10/31/2013	
Lab ID: 1332431013		Received: 11/20/2013	
Method: NIOSH 7300 Mod.		Media: Ghost Wipe	
		Sampling Parameter: Area 1 ft <sup>2</sup>	
		Prepared: 11/26/2013	
		Analyzed: 11/27/2013	
Analyte	ug/sample	ug/ft <sup>2</sup>	RL (ug/sample)
Lead	6.1	6.1	1.3

## Comments

## Sample: 1332431009

The lead result for this sample is reported from 10X dilution data because of interferences. The reporting limit has been raised in proportion to the dilution level.

## Sample: 1332431012

The lead result for this sample is reported from 5X dilution data in order to obtain an instrument response within the linear range for lead. The reporting limit has been raised in proportion to the dilution level.

## Report Authorization

Method	Analyst	Peer Review
NIOSH 7300 Mod.	Non-Responsive	

## Laboratory Contact Information

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

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





## ANALYTICAL REPORT

Workorder: 34-1332431

Client Project ID: 013.IH1449.09/Glasgow, MT

Purchase Order: 013.IH1449.09

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/labs/bars/sas/qa/">http://www.dep.state.fl.us/labs/bars/sas/qa/</a>
	Texas (TNI)	T104/04456-11-1	<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.

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

☒ **REGULAR** Status (5 working days from receipt)

☐ **RUSH** Status Required - ADDITIONAL CHARGE

RESULTS REQUIRED BY \_\_\_\_\_

DATE \_\_\_\_\_

CONTACT DATACHEM LABS PRIOR TO SENDING SAMPLES

**Non-Responsive**Date 10-31-13 Purchase Order No. 013.1H1449.09Company Name NESAddress 114 Sibley StFolsomCA 95630Person to Contact **Non-Responsive**Telephone (916) 353-2360Fax Telephone (916) 353-2375

Billing Address (if different from above)

Same**Non-Responsive**

Quote No. \_\_\_\_\_

Sample Collected \_\_\_\_\_

Sampling Site Glasgow, MTIndustrial Process Antimony - CIPRDate of Collection 10-31-13Time Collected noon

Date of Shipment \_\_\_\_\_

QC Requirements **Non-Responsive**Collector **Non-Responsive**Signature **Non-Responsive**

## REQUEST FOR ANALYSES

Laboratory Use Only	Client Sample Number	Media Type*	Sample Volume (Liters)	ANALYSES REQUESTED - Use Method Number If Known
	10313-81-01	01	142	Lead
		02		
		03		
		04		
		05		
		06		
		07		
		08		
		09		
		10		
		11		

## CHAIN OF CUSTODY

**Non-Responsive**

Relinquished to (Signature)	<b>Non-Responsive</b>	Date / Time <u>11/13/13 1pm</u>	<b>Non-Responsive</b>	Date / Time <u>11-20-13 9:52</u>
Relinquished to (Signature)	<b>Non-Responsive</b>	Date / Time	<b>Non-Responsive</b>	Date / Time

**Non-Responsive**

4388 Glendale Milford Road / Cincinnati, OH 45242 • 800-458-1493 or 513-733-5336 / Fax: 513-733-5347



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**EMPLOYEE LIST**  
**GLASGOW ARMORY AND CONVERTED IFR**  
**GLASGOW, MT**  
**31 OCTOBER 2013**

Last Name, First Name	Last 4 of SSN
<b>Non-Responsive</b>	



**APPENDIX L**

**IHSW VIOLATION LOG**



## 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 Cost(s)	DATE CORRECTED	REFERENCES
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)(i) 29 CFR 1910.1030(h)(2)
MTGA-10312013-5.3	Lead concentrations exceed established criteria	Converted IFR	3	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.					BEST AVAILABLE COPY 29 CFR 1910.1025 (h)
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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**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 Glasgow Armory/IFR. The paragraphs are numbered to correspond to the sections where first noted. (i.e., N.4.4 describes the following: the N is Conclusions & Recommendations and the 4.4 corresponds back to Section 4 – Observations and Recommendations; Item 4 – Safety Training and Record Keeping).

**N4.5 Bloodborne Pathogen Program** – Develop and maintain a written Bloodborne Pathogen Program. Conduct and document training for facility personnel.

**N4.5 Training Documentation** – Maintain records of training conducted, specifically for PPE, hazard communication, hearing conservation, emergency preparedness, and other OSHA required training.

**N5.3 Lead Sampling** – Review the SOP for lead cleanup and follow-up housekeeping recommendations. Have follow-up testing conducted to ensure lead levels have been reduced to acceptable concentrations in the converted IFR.

**N5.5 Indoor Air Quality** – Increase temperatures throughout the facility to meet the ASHRAE recommended range.

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**APPENDIX O**

**DD FORMS 2214**



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**APPENDIX P**

**INSTALLATION STATUS REPORT**

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	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 13 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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**APPENDIX Q**

**FACILITY INFORMATION**



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**Facility Information Form**  
Revised: September 26, 2013



**General Facility Information**

Date(s) of Previous IHSAs: 10 June 2003

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

Date(s) of IHSAs: 31 October 2013

Facility Name: Glasgow Armory and Converted IFR

Address: 81 Airport Road, Glasgow, MT 59230

Facility Commander:

**Non-Responsive**

Safety Officer:

No Person(s): 3 Admin: 3 Maint: 0 Work Sched: M-F, 0800-1700 Size of Facility: 8,625ft<sup>2</sup>

Unit(s): 484<sup>th</sup> Military Police Co-Tenant(s): Recruiter- National Guard

Include UIC if available

List All

Primary work activities at Facility:

Support Drills, 484 Military Police training

**Written Health & Safety Programs / SOPs: Interview with SGT. Lewis**

Program	Program Needed	Have Program	Date of Last Training	# Enrolled	Comments
Bloodborne Pathogen	X				No written program
Confined Space					None at facility
Emergency Preparedness		X	Not Available		
Hazard Communication		X	9-17-13	1	
Hearing Protection		X			
Lock Out / Tag Out		N/A			
PPE		X			
Respiratory Protection		N/A			
Vision		X			
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

**-There were no training records available at the facility**

**Documents / Records to Obtain**

- ☒ Facility floor plan / evacuation map  
☒ List of equipment serviced / maintained  
☒ Previous IH reports- Jason Potter/J. Rush Bowers, RPT June 10, 2003

NA = Not Applicable to this site

- ☒ Hazardous Materials inventory  
☒ Personnel list  
☐ Others (List):



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

Five <b>lead</b> wipe samples collected from drill floor (take samples from dusty horizontal floor surfaces)	Yes, samples 103113-81-01 to 05
Are any <b>weapons cleaned</b> in the facility, if yes where are they cleaned?	Yes, Weapons are cleaned on the Drill Floor Only
Additional lead <b>wipe</b> samples taken from 25% of the rest of the building - -(on floor areas only)	Completed, samples 103113-81-07 to 09 collected from converted IFR
Is there a <b>converted indoor firing range</b> ? If so collect additional wipe samples IAW the SOW.	Yes, samples 103113-81-07 to 12 collected from converted IFR
Is there any peeling <b>paint</b> ? Take bulk sample if able.	No previous paint damage. No peeling paint present.
Are there any signs of water damage or <b>mold</b> ?	No visible mold. Musty smell noted in Converted IFR
Any suspected <b>ACM</b> ? Where and what condition is it in. Bulk sample if able.	Unknown
Quality of housekeeping	Good
HVAC maintenance plan in place?	No formal plan in place.
<b>Overall condition</b> of HVAC system	Good
Obtained <b>CO2, Temp, RH</b> monitoring	Completed, see Appendix E
<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.	Good condition. Inventory with MSDS for flammable storage locations available.

<b>Fire alarm</b> in working condition - -not usually in place in older armories	<b>No</b>
<b>Fire extinguishers</b> in place and properly identified and mounted	<b>Yes</b>
Evidence of <b>monthly fire extinguisher inspections</b>	<b>Yes</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 inside the Armory</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>None Available</b>
Any Photo labs	<b>None</b>
Any hazardous <b>noise</b> sources	<b>None</b>
<b>Light levels</b> checked throughout building	<b>Completed, see Appendix E</b>
<b>Breaker panels</b> properly labeled with no exposed wiring	<b>Yes</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>See facility information form</b>
Any <b>civilian activities</b> in armory (cub scouts, classes, day care, parties etc)	<b>USDA, Blood Drives, Christmas Dinners</b>
Obtain two <b>lead air samples</b>	<b>None</b>

Evaluate Kitchen Stove Hood Flow if Present IAW NFPA Standard 96.	No Kitchen Hood
Collect Source Noise Measurements of Kitchen Appliances and Document Using DD 2214	No noise sources
Conduct a safety walkthrough of entire facility document any safety deficiencies found.	Completed, see report
<u>Take photos</u> of outside of building, all sample points and any pertinent hazards or concerns.	Completed, see Appendix C
Name of Armory, POC, phone #, address and organizations in Armory  (Add Checklist to Report)	<b>Non-Responsive</b> 406-324-5525 Glasgow Armory and Converted IFR 81 Airport Road, Glassgow MT 59230





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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** 916-353-2360.

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 **Non-Responsive**  
854-1490/ (916) 812-5838 or Maria Dean, (916) 854-1492, **Non-Responsive**

**Non-Responsive**

NGB, IHSW, CIV  
Industrial Hygiene

CF:  
FMO  
OHN  
SSO

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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.**

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NOT PERFORMED AT THIS FACILITY





# 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

### Great Falls Indoor Firing Range (IFR)

401 63<sup>rd</sup> Street South

Great Falls, MT 59405

16 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

6 December 2012

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

FOR Commander, Great Falls Indoor Firing Range (IFR), 401 63<sup>rd</sup> Street South, Great Falls, MT 59405

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for the Great Falls IFR, 401 63<sup>rd</sup> Street South, Great Falls, MT conducted on 16 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 Great Falls Armory Indoor Firing Range (IFR) at 401 63<sup>rd</sup> St. South, Great Falls, MT on 16 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 Great Falls IFR, 401 63<sup>rd</sup> Street South, Great Falls, MT conducted on 16 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.



ARNG-CSG-IHSW

**SUBJECT:** Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for the Great Falls IFR, 401 63<sup>rd</sup> Street South, Great Falls, MT conducted on 16 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**

*For*  
NGB, IHSW, CIV  
Industrial Hygiene



**Industrial Hygiene, Southwest  
Hazard Inventory Log  
IFR Great Falls, MT**

CONTROL NUMBER CLOSED <input checked="" type="checkbox"/>	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/NCOIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
MTGF-081612- 4.5.1 <input type="checkbox"/>	Notification signs	IFR	4	Consider posting signs warning users about laser hazards.					ANSI Z136.1-2010
MTGF-081612- 4.6.1 <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

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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  
(IHSAV)  
REPORT**

**For**

**MONTANA ARMY NATIONAL GUARD  
Indoor Firing Range  
401 63rd Street South  
Great Falls, MT 59405**



**Prepared for:**

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

**Prepared and reviewed by:**

**Non-Responsive**

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

**August 16, 2012**

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### APPENDICES

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## EXECUTIVE SUMMARY

An Industrial Hygiene (IH) Site Assistance Visit (IHS AV) was conducted **Non-Responsive** E, CIH of Tammer Sciences, Inc. on August 16, 2012 at the Indoor Firing Range (IFR) located at 401 63rd Street South, Great Falls, MT 59405. The primary point of contact for information gathered during this survey was **Non-Responsive** phone 406-453-3155 ext 5075 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 **Non-Responsive**  
**Non-Responsive** PE, CIH of Tammer Sciences, Inc. on August 16, 2012 at the Indoor Firing Range (IFR) located at 401 63rd Street South, Great Falls, MT 59405. The primary point of contact for information gathered during this survey was **Non-Responsive** phone 406-453-3155 ext 5075 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 Great Falls indoor firing range is located inside the Great Falls Armory and is used for weapons firing and qualifications. As of the date of the visit, only laser equipped weapons are used and no live ammunition has been fired in the range recently. 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. The range officer is **Non-Responsive** phone 406-453-3155 ext 5075 e-mail **Non-Responsive**

## 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 the Great Falls Armory and has been constructed and used for live ammunition. According to **Non-Responsive** the range has only been used with a laser target system recently. 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. The local exhaust ventilation has been shut off since the laser system is being used and no live ammunition is fired.

#### 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 Great Falls Indoor Firing Range Great Falls, Montana 16 AUG 2012		
Sample Number	Sample Location	Micrograms of lead (ug) per square foot
GFIFRW01	Upper section of the right wall by firing line	<2.5
GFIFRW02	Floor behind firing line	79
GFIFRW03	Upper section of the left wall by firing line	<2.5
GFIFRW04	Middle section of right wall midrange	<2.5
GFIFRW05	Floor mid range	51
GFIFRW06	Middle section of left wall midrange	<2.5
GFIFRW07	Lower section of right wall by bullet trap	<2.5
GFIFRW08	Floor by bullet trap	35
GFIFRW09	Lower section of right wall by bullet trap	<2.5
GFIFRW10	Top of firing line shelf – lane #2	20
GFIFRW11	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  $200\text{-}\mu\text{g}/\text{ft}^2$  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 and chain of custody are supplied in Appendix H.

#### **Recommendation**

None

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

The ventilation system was not operational as of the time of the visit. According to Non-Responsive the system was shut off since no live ammunition is being used there. No measurements were collected.

#### **4.3 Illumination**

Illumination levels inside the range facilities ranged 90 to 95 behind firing line and between 50 and 60 foot candles throughout. Lighting levels at the target were 105 foot candles.

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**

All warning signs are posted on the entrance to the firing range. See photos. Since the range is not used with live ammunitions and only with laser equipped weapons, signs warning about laser hazards are recommended.

##### **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**



## **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 16, 2012

Sr. Industrial Hygienist

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

## Appendix A

## References

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



**Appendix B**

## **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

B-1

to acceptable levels. Personal protective equipment should be the solution of last resort, implemented after all other efforts to eliminate the hazard have been exhausted or deemed infeasible. OSHA 29 CFR 1910.134 covers the use of respiratory protection in the work place.

#### **American Conference of Governmental Industrial Hygienists (ACGIH)**

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

#### **Occupational Exposure Limit**

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

#### **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.



## Appendix C



Photo #1: Main entrance to the IFR.

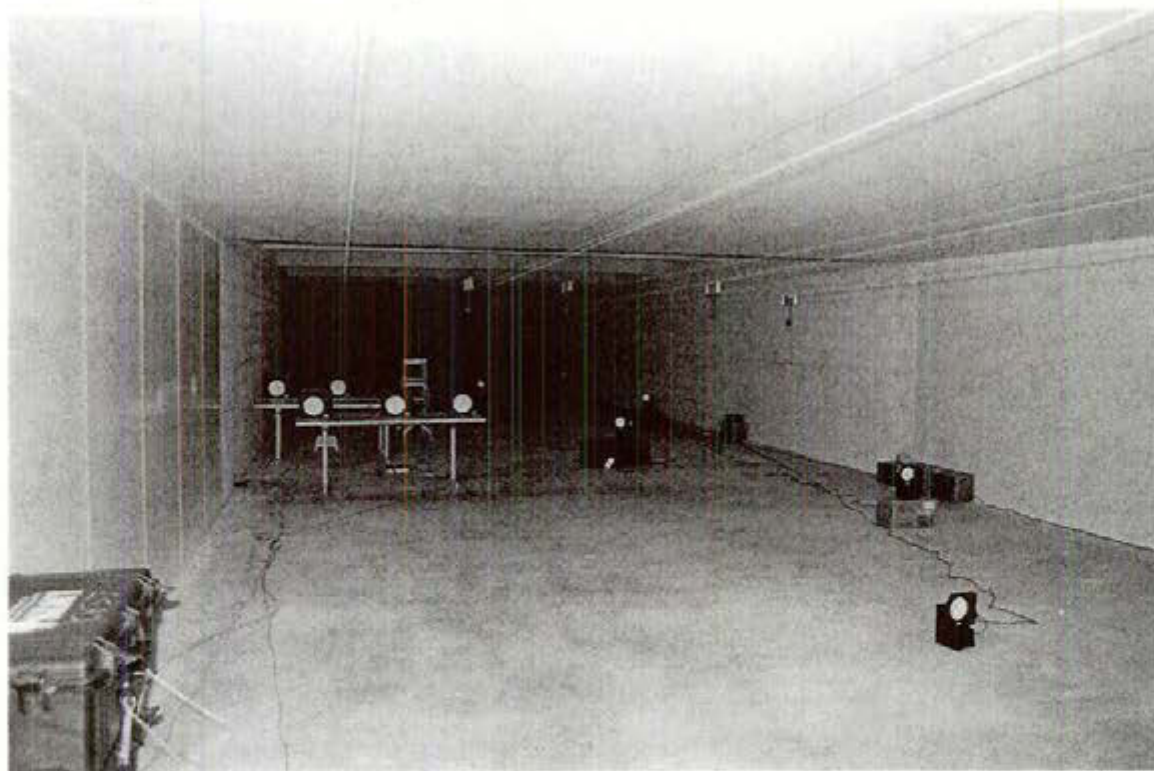


Photo #2: Looking down range.



Photo #3: Firing line lanes.



Photo #4: Looking towards the firing line.



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## Appendix D

No Floor Layout was provided – See Photos in the Appendix C

D-1

## Appendix E



Table E-1 Local Exhaust Ventilation System Measurements Face Velocities Profile Montana Army National Guard Great Falls Indoor Firing Range Great Falls, MT August 16, 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					

Ventilation system was not operational  
 No Ventilation Data were collected.

Great Falls Armory ITR

8/16/2012

Range is used for laser equipped target practice

Ventilation shut off because of continuous operation

No live firing has been done

	Wipe Samples	Looking down towards bullet stop
GFIFR W01	Right wall upper by Firing line	
W02	Floor behind Firing line	
W03	Left wall upper by FL	Looking
W04	R Wall Mid Middle of Range	
W05	Floor Mid Range	
W06	Left Wall Middle Mid Range	
W07	R Wall Lower by Bullet stop	
W08	Floor by Bullet stop	
W09	Left W Lower by BS	
W10	top of firing line shelf Lane 4	
W11	Blank.	

lighting behind firing line 90-95 ft cd

F-1

## Appendix G



**Tektronix**

Service Solutions

**Certificate of Calibration**

6349473

Certificate Page 1 of 2

**Instrument Identification**

Company ID: 607229  
 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: 509084

**Certificate Information**

Reason For Service: CALIBRATION  
 Type of Cal: NORMAL  
 As Found Condition: IN TOLERANCE  
 As Left Condition: IN TOLERANCE  
 Procedure: 33K6-4-1759-1 AIR VELOCITY, TEMPERATURE, FLOW METERS  
 Remarks:

Technician: Non-Responsive  
 Cal Date: 09Jul2012  
 Cal Due Date: 09Jul2013  
 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/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
5490480	38-1002142	DEWPOINT MONITOR	GENERAL EASTERN	M-4 RH	07Sep2011	07Sep2012
6236419	38-1004138	AIR VELOCITY SYSTEM	OMEGA	WT4401-S	01Jun2012	01Jun2015
9800090653	38-1006714	DATA ACQUISITION/SWITCH UNIT	AGILENT / HP	34970A	07Jun2011	07Dec2013
3830071396	38-1005980	PITOT TUBE AIRFLOW SYSTEM	SYPRIS	AP12318PXS53	02Dec2008	02Dec2013

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## Appendix H



## ANALYTICAL REPORT

Report Date: August 29, 2012

**Non-Responsive**

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

Phone: (630) 369-7956

Fax: (630) 369-7957

**Non-Responsive**

Workorder: 34-1223607

Client Project ID: FMS &amp; IFR 082312

Purchase Order: FMS &amp; IFR

Project Manager: **Non-Responsive**

## Analytical Results

Sample ID: GFIFRW01	Media: Wipe	Collected: 08/14/2012
Lab ID: 1223607001	Sampling Location: FMS & IFR	Received: 08/23/2012
Method: NIOSH 7300 Mod.	Sampling Parameter: Area Not Provided	Prepared: 08/28/2012
		Analyzed: 08/28/2012
Analyte	ug/sample	RL (ug/sample)
Lead	<2.5	2.5

Sample ID: GFIFRW02	Media: Wipe	Collected: 08/14/2012
Lab ID: 1223607002	Sampling Location: FMS & IFR	Received: 08/23/2012
Method: NIOSH 7300 Mod.	Sampling Parameter: Area Not Provided	Prepared: 08/28/2012
		Analyzed: 08/28/2012
Analyte	ug/sample	RL (ug/sample)
Lead	79	2.5

Sample ID: GFIFRW03	Media: Wipe	Collected: 08/14/2012
Lab ID: 1223607003	Sampling Location: FMS & IFR	Received: 08/23/2012
Method: NIOSH 7300 Mod.	Sampling Parameter: Area Not Provided	Prepared: 08/28/2012
		Analyzed: 08/28/2012
Analyte	ug/sample	RL (ug/sample)
Lead	<2.5	2.6

Sample ID: GFIFRW04	Media: Wipe	Collected: 08/14/2012
Lab ID: 1223607004	Sampling Location: FMS & IFR	Received: 08/23/2012
Method: NIOSH 7300 Mod.	Sampling Parameter: Area Not Provided	Prepared: 08/28/2012
		Analyzed: 08/28/2012
Analyte	ug/sample	RL (ug/sample)
Lead	<2.5	2.5

ADDRESS 950 West LeVoy Drive, Salt Lake City, Utah, USA 84123 PHONE +1 801 266 7700 FAX +1 801 268 9992

ALS GROUP USA CORP. Part of the ALS Laboratory Group A Campbell Brothers Limited Company

Environmental

www.alsglobal.com

RIGHT SOLUTIONS





## ANALYTICAL REPORT

Workorder: 34-1223607  
 Client Project ID: FMS & IFR 082312  
 Purchase Order: FMS & IFR  
 Project Manager: [Redacted]

## Analytical Results

Sample ID: GFIFRW05	Media: Wipe	Collected: 08/14/2012
Lab ID: 1223607005	Sampling Location: FMS & IFR	Received: 08/23/2012
Method: NIOSH 7300 Mod.	Sampling Parameter: Area Not Provided	Prepared: 08/28/2012
		Analyzed: 08/28/2012
Analyte	ug/sample	RL (ug/sample)
Lead	51	2.5

Sample ID: GFIFRW06	Media: Wipe	Collected: 08/14/2012
Lab ID: 1223607006	Sampling Location: FMS & IFR	Received: 08/23/2012
Method: NIOSH 7300 Mod.	Sampling Parameter: Area Not Provided	Prepared: 08/28/2012
		Analyzed: 08/28/2012
Analyte	ug/sample	RL (ug/sample)
Lead	<2.5	2.5

Sample ID: GFIFRW07	Media: Wipe	Collected: 08/14/2012
Lab ID: 1223607007	Sampling Location: FMS & IFR	Received: 08/23/2012
Method: NIOSH 7300 Mod.	Sampling Parameter: Area Not Provided	Prepared: 08/28/2012
		Analyzed: 08/28/2012
Analyte	ug/sample	RL (ug/sample)
Lead	<2.5	2.5

Sample ID: GFIFRW08	Media: Wipe	Collected: 08/14/2012
Lab ID: 1223607008	Sampling Location: FMS & IFR	Received: 08/23/2012
Method: NIOSH 7300 Mod.	Sampling Parameter: Area Not Provided	Prepared: 08/28/2012
		Analyzed: 08/28/2012
Analyte	ug/sample	RL (ug/sample)
Lead	35	2.5

Sample ID: GFIFRW09	Media: Wipe	Collected: 08/14/2012
Lab ID: 1223607009	Sampling Location: FMS & IFR	Received: 08/23/2012
Method: NIOSH 7300 Mod.	Sampling Parameter: Area Not Provided	Prepared: 08/28/2012
		Analyzed: 08/28/2012
Analyte	ug/sample	RL (ug/sample)
Lead	<2.5	2.5



## ANALYTICAL REPORT

Workorder: **34-1223607**  
 Client Project ID: FMS & IFR 082312  
 Purchase Order: FMS & IFR  
 Project Manager: **Not Responsive**

## Analytical Results

Sample ID: <b>GFIFRW10</b>	Media: Wipe	Collected: 08/14/2012
Lab ID: 1223607010	Sampling Location: FMS & IFR	Received: 08/23/2012
Method: NIOSH 7300 Mod.	Sampling Parameter: <b>Area Not Provided</b>	Prepared: 08/28/2012
		Analyzed: 08/28/2012
Analyte	ug/sample	RL (ug/sample)
Lead	20	2.5

Sample ID: <b>GFIFRW11</b>	Media: Wipe	Collected: 08/14/2012
Lab ID: 1223607011	Sampling Location: FMS & IFR	Received: 08/23/2012
Method: NIOSH 7300 Mod.	Sampling Parameter: <b>Area Not Provided</b>	Prepared: 08/28/2012
		Analyzed: 08/28/2012
Analyte	ug/sample	RL (ug/sample)
Lead	<2.5	2.5

Sample ID: <b>FMS1W01</b>	Media: Wipe	Collected: 08/14/2012
Lab ID: 1223607012	Sampling Location: FMS & IFR	Received: 08/23/2012
Method: NIOSH 7300 Mod.	Sampling Parameter: <b>Area Not Provided</b>	Prepared: 08/27/2012
		Analyzed: 08/28/2012
Analyte	ug/sample	RL (ug/sample)
Cadmium	0.16	0.086
Chromium	0.49	0.25
Copper	2.4	1.3
Iron	72	10
Lead	<1.3	1.3
Manganese	4.0	0.13
Nickel	0.43	0.15
Zinc	35	13

Sample ID: <b>FMS1W02</b>	Media: Wipe	Collected: 08/14/2012
Lab ID: 1223607013	Sampling Location: FMS & IFR	Received: 08/23/2012
Method: NIOSH 7300 Mod.	Sampling Parameter: <b>Area Not Provided</b>	Prepared: 08/27/2012
		Analyzed: 08/28/2012
Analyte	ug/sample	RL (ug/sample)
Cadmium	0.33	0.086
Chromium	0.73	0.25
Copper	5.9	1.3
Iron	130	10
Lead	1.6	1.3
Manganese	5.1	0.13

Results Continued on Next Page





1223607



## ANALYTICAL REQUEST FORM

1. ☐ REGULAR SERVICE

RUSH SERVICE REQUESTED - ADDITIONAL CHARGE

DATE

SAMPLING MUST BE PRIOR TO SENDING SAMPLES

2. Date 8/20/12 Purchase Order No. \_\_\_\_\_  
 3. Company Name Tanner Sciences, Inc.  
 Address 3744 Lawrence Dr  
Naperville, IL 60564

Person to

Telephone

Fax Tele

E-mail Add

Billing Add

**Non-Responsive**

NGB SouthWest  
Mathers, CA

4. Date Recd

Address Project

5. Sample Collection

Type of Sample

Location of Sample

Date of Collection

Time Collected

Date of Shipment

ALS Methodology No.

6. See website for more about ALS

FMS & IFRMaintenance8/14 - 8/17Day8/20/2012

## 7. REQUEST FOR ANALYSES

Laboratory Use Only	Client Sample Number	Matrix	Sample Description	ANALYSES REQUESTED (Use analysis number, if known)	Units
	<u>BFIFR W01</u>	<u>Baby wipe</u>	<u>head</u>		<u>la</u>
	<u>- W011</u>				
	<u>FMS1 W01</u>			<u>Metals:</u>	<u>51</u>
	<u>- W06</u>			<u>Cd, Cr, Cu, Fe, Pb, Mn, Ni, Zn</u>	<u>4</u>
	<u>FMS2 W01</u>			<u>//</u>	
	<u>- W05</u>				
	<u>FMS5 W01</u>			<u>//</u>	
	<u>- W05</u>				

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

\*\* 1 µg/sample, 2 mg/ml, 3 ppm, 4 %, 5 µg/m<sup>3</sup>, etc. (others: Please indicate and include units in the column entitled "Units")Comments Please Report each set separately Thanks

Possible Contamination and/or Chemical Hazards

7. Chain of Custody (Optional)

Relinquished

Received by

Relinquished

Received by

**Non-Responsive**Date Recd 8/20/12 PMTime Recd 08-23-12 11:06

960 West LeVoy Drive / Salt Lake City, UT 84123

303-358-9135 or 801-268-7700 / FAX: 301-268-9992

ALS Environmental



## Appendix I



**Industrial Hygiene, Southwest  
Hazard Inventory Log  
IFR Great Falls, MT**

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"/> MTGF-081612- 4.5.1 <input type="checkbox"/>	Notification signs	IFR	4	Consider posting signs warning users about laser hazards.					ANSI Z136.1-2010
MTGF-081612- 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

NGB IHSW

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**Appendix J**



## **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.



## 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

**Great Falls Readiness Center**  
401 63<sup>rd</sup> South Street  
Great Falls, MT 59405

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-IHSW

6 March 2013

MEMORANDUM THRU Montana Army National Guard, ATTN: **Non-Responsive** Montana Medical  
DET, Troop Medical Clinic Room 1009, 1956 MT Majo Street, Fort Harrison, MT 59836-4789

FOR Commander Great Falls Readiness Center, 401 63<sup>rd</sup> South Street, Great Falls, MT 59405

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for Great Falls  
Readiness Center, 401 63<sup>rd</sup> South Street, Great Falls, MT conducted on 01 October 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 Great Falls Armory at 401 63<sup>rd</sup> South St., Great Falls, MT on 01 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. Update chemical inventories for all hazardous materials and maintain MSDS's and chemical inventory list. (para. 4.6.1) (RAC 4)



**SUBJECT:** Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for Great Falls Readiness Center, 401 63<sup>rd</sup> South Street, Great Falls, MT conducted on 01 October 2012.

## **6. Violation Correction Log.**

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

1. Commander(s) assign an Action OIC/NCOIC, Suspense Date for completion, and Estimated Cost(s) to ensure item completion and corrective status is briefed during quarterly (or monthly) Safety Meetings/Councils until resolved.
2. Corrective measures should be implemented and accomplished at the lowest levels possible. Hazards and Corrective Measures that cannot be corrected at the facility level, and require assistance from higher headquarters or from the state level, should be elevated to the Quarterly State/BN Safety Council Meeting for resolution.
3. Recommend a representative from the facility attend all quarterly/monthly meetings to ensure the appropriate emphasis and corrective actions are followed for hazard resolution and abatement of the observations made during this visit.
4. Retain entries of the items corrected, or closed, for future reference. This may be accomplished by posting completed items within the Corrected Hazard Sheet portion of the Excel Violation Correction Log Workbook we've provided.
5. The preferred method to document and track identified hazards for resolution is for their entry into the Reserve Component Automation System – Safety and Occupational Health (RCAS-SOH) Program.

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

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

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

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

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

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

**SUBJECT:** Executive Summary for Industrial Hygiene Site Assistance Visit (IHSW) for Great Falls Readiness Center, 401 63<sup>rd</sup> South Street, Great Falls, MT conducted on 01 October 2012.

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) 854-1494 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**

**Readiness Center Great Falls, Great Falls, MT**

CONTROL NUMBER	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/NCOIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
CLOSED [X] MTRCGF-10112- 4.6.1	Update the current inventory of all hazardous materials	Armory Flammable Locker	4	Update chemical inventories for all hazardous materials and maintain current inventory sheets.					29 CFR 1910.1200(g)(1)





## ***ARMORY***

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

#### **Materials Needed:**

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

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

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

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

#### **Post-Cleanup Precautionary Measures:**

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

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

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

#### **Initial Armory Cleanup:**

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



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

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

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

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

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

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

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



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

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

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

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

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

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

**GREAT FALLS ARMORY  
401 63<sup>RD</sup> SOUTH STREET  
GREAT FALLS, MONTANA 59405**

**October 1, 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.IH1374.76**

*Prepared by:*  
**Non-Responsive**  
  
*Industrial Hygiene Technician*

**Non-Responsive**  


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## EXECUTIVE SUMMARY

During October 1, 2012, [Non-Responsive] Industrial Hygiene Technician of NES, Inc. (NES) conducted an Industrial Hygiene Site Assistance Visit (IHSAV) at the Great Falls Armory located at 401 63<sup>rd</sup> South Street in Great Falls, Montana 59405. The primary point of contact for information gathered during this survey was [Non-Responsive] phone: (406) 457-3155, email: [Non-Responsive]

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 Industrial Hygiene Site Assistance Visit 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 October 1, 2012, **Non-Responsive** Industrial Hygiene Technician of NES, Inc. (NES) conducted an Industrial Hygiene Site Assistance Visit (IHSAV) at the Great Falls Armory located at 401 63<sup>rd</sup> South Street in Great Falls, Montana 59405. The primary point of contact for information gathered during this survey was **Non-Responsive** phone: (406) 457-3155, email: **Non-Responsive**

## 1.1 IHSAV Objectives

The IHSAV objectives were 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 Great Falls Armory has seven full time guard members and one full time civilian employee. The Armory has offices used for administrative purposes and recruiting purposes. The Armory also contains a drill floor, storage rooms, a library, an indoor firing range, a library, classrooms, a kitchen and a maintenance bay. No civilian functions are carried out in this Armory. The drill floor is occasionally used by Army National Guard members as a staging area to clean weapons. The maintenance bay is used to service vehicles but large repairs are not carried out at the facility.



### **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 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, are submitted to ALS Laboratory Group (ALS) in Salt Lake City, Utah. ALS analyzes 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 of 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 8551 IAQ-Calc™ 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. 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 Great Falls 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 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

An attempt was made to obtain air velocity and flow measurements on the kitchen hood over the gas range using a TSI VelociCalc™ Plus, Model 8386A. The hood would not turn on so no measurements were taken. TM 5-810-1, prepared by Headquarters, Department of the Army, June 1991 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 IHSAV.

### 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
Sound Level Quest	2900	CDF020012	03/2012
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 for this equipment.

### 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 Great Falls 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 9 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 4 additional areas samples were collected from the following areas: the kitchen, the maintenance bay and two from the indoor firing range. The analytical results for each of the aforementioned areas were below the 40  $\mu\text{g}/\text{ft}^2$  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
10112-GF-01	Drill Floor	Southwest corner of drill floor	<2.5	$\leq 40 \mu\text{g}/\text{ft}^2$
10112-GF-02	Drill Floor	Northwest corner of drill floor	2.8	$\leq 40 \mu\text{g}/\text{ft}^2$
10112-GF-03	Drill Floor	Center, middle of drill floor	3.7	$\leq 40 \mu\text{g}/\text{ft}^2$
10112-GF-04	Drill Floor	Southeast corner of drill floor	5.3	$\leq 40 \mu\text{g}/\text{ft}^2$
10112-GF-05	Drill Floor	Northeast corner of drill floor	<2.5	$\leq 40 \mu\text{g}/\text{ft}^2$
10112-GF-06	Kitchen	Middle of floor sample	10	$\leq 40 \mu\text{g}/\text{ft}^2$
10112-GF-07	Maintenance Bay	Work bay floor	2.9	$\leq 40 \mu\text{g}/\text{ft}^2$
10112-GF-08	Indoor Firing Range	Lane #2 at shooters feet area	21	$\leq 40 \mu\text{g}/\text{ft}^2$
10112-GF-09	Indoor Firing Range	Lane #4 at shooters feet area	14	$\leq 40 \mu\text{g}/\text{ft}^2$

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 Great Falls Armory. The interior painted surfaces along with the exterior painted surfaces were inspected for peeling paint. No bulk paint chip samples were obtained because 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 Great Falls Armory.



#### **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 chemical inventory for all hazardous materials should be updated and appropriate MSDS put on file.

Copies of chemical inventories are provided in Appendix D.

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

There are two HAZMAT storage locker located at the Armory. The lockers are located 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**

Not applicable to the facility as stated by our POC Ronald Kentzel.

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

The following training documentation was found at the site:

- Army National Guard Safety SOP
- HazMat Waste Training
- Hazcom Training

#### **4.9 Ventilation Survey**

During the IHSAV at the Great Falls Armory, the kitchen stove hood could not be turned on. Our POC was unable to locate the switch to turn the hood on to obtain flow measurements. According to Mr. Kentzel the stove is not cooked on resulting in the hood never being used.

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 Great Falls Armory. The west vehicle exhaust tested at 3,484 CFM. The east vehicle exhaust drop tested at 4,712 CFM. 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.

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 Great Falls Armory. The west vehicle exhaust drop tested at 871 CFM and the east vehicle exhaust drop tested at 1,178 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 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 IHS AV.

#### 4.11 Safety Walk-Through

1. Housekeeping throughout the facility was good. 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 up to date for annual inspections as of October 2012. The facilities maintenance employee maintains a log of monthly fire extinguisher inspections.
3. The eyewash stations were checked weekly; documentation was current.
4. The 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 IHI Site Assistance Visit was reviewed and approved by:

**Non-Responsive**

February 6, 2012

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

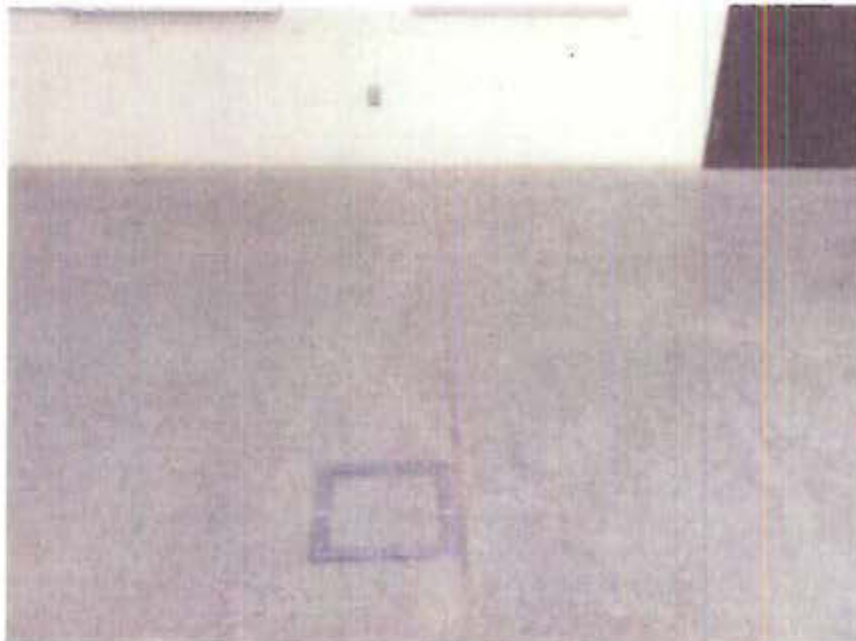
- American Conference of Governmental Industrial Hygienists (ACGIH), Industrial Ventilation, A Manual of Recommended Practice
- American Conference of Governmental Industrial Hygienists (ACGIH), Threshold Limit Values for Chemical Substances and Physical Agents and Biological Indices
- American National 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



**PHOTO LOG  
GREAT FALLS ARMORY  
GREAT FALLS, MONTANA  
OCTOBER 1, 2012**



**Photo 1:** Great Falls Armory located in Great Falls, Montana.



**Photo 2:** Lead wipe floor sample 10112-GF-01 from the southwest corner of the drill floor.

**PHOTO LOG  
GREAT FALLS ARMORY  
GREAT FALLS, MONTANA  
OCTOBER 1, 2012**



**Photo 3:** Lead wipe floor sample 10112-GF-02 from the northwest corner of the drill floor.



**Photo 4:** Lead wipe floor sample 10112-GF-03 from the center of the drill floor.

**PHOTO LOG  
GREAT FALLS ARMORY  
GREAT FALLS, MONTANA  
OCTOBER 1, 2012**



**Photo 5: Lead wipe floor sample 10112-GF-04 from the southeast corner of the drill floor.**



**Photo 6: Lead wipe floor sample 10112-GF-05 from the northeast corner of the drill floor.**



**PHOTO LOG  
GREAT FALLS ARMORY  
GREAT FALLS, MONTANA  
OCTOBER 1, 2012**



**Photo 7:** Lead wipe floor sample 10112-GF-06 from the entrance to the kitchen.



**Photo 8:** Lead wipe floor sample 10112-GF-07 from the maintenance bay.

**PHOTO LOG  
GREAT FALLS ARMORY  
GREAT FALLS, MONTANA  
OCTOBER 1, 2012**



**Photo 9: Lead wipe floor sample 10112-GF-08 from Indoor Firing Range, Lane 2, at shooters feet.**



**Photo 10: Lead wipe floor sample 10112-GF-09 from Indoor Firing Range, Lane 4, at shooters feet.**

# Print Inventory

Print Inventory

Cancel

Unit: CO C 1-163D IN  
BN

Storage: Flammable Locker  
2

Month:  
1/1/2012

SLN	Item	NSN	Manufacturer	MSDSID	Quantity	Unit of Issue	Shelf Life	HCC
F02-01	AIRCRAFT GREASE	9150-00-145-0268	SHELL OIL CO	BDCGG	2	GAL	24	V6
F02-02	LUBE OIL 15W//40	9150-01-152-4117	GARD CORP	CJJGD	7	QT	26	V6
F02-03	FRH	9150-00-111-6256	ROYAL LUBRICANTS	BZQVN	3	QT	24	V6
F02-04	ATF	9150-01-353-4799	PETROLEUM PACKERS		7	QT	36	
F02-05	AIRCRAFT GREASE	9150-01-262-3358	ROYAL LUBRICANTS	CCSWW	6	TUBE	24	V6
F02-06	GAA	9150-01-197-7693	SUMMIT	BQYLM	50	TUBE	24	V6
F02-07	BFS	9150-01-102-9455	SAN JUAN IND	BWPTH	3	GAL	24	V6
F02-08	DAMPING FLUID	9150-01-056-7346	NONE		1	GAL		V6
F02-09	ENGINE OIL, TURBINE	9150-00-985-7099	HATCO CORP		25	QT	36	
F02-10	LUBE OIL 10W	0	TEXACO		1	5GAL		
F02-	LUBE, ENGINE OIL	9150-01-438-6082	SAFETY KLEEN CORP		0	5GAL		



11 15/40

F02- 12	ANTIFREEZE & COOLANT	6850-00-664-1403	COLORADO PETRO PRODUCTS	1	GAL
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# Print Inventory

[Print Inventory](#) [Cancel](#)

Unit: CO C 1-163D IN  
BN

Storage: fFlammable locker  
1

Month:  
1/1/2012

SLN	Item	NSN	Manufacturer	MSDSID	Quantity	Unit of Issue	Shelf Life	HCC
F01-02	SPRAY PAINT RED	8010001412952	LBH SO SURE	BHCXQ	1	CAN	26	
F01-03	SPRAY PAINT GRAY	801000721-9754	LBH SO SURE	BHDTT	1	CAN	36	
F01-04	SPRAY CAN PRIMER	8010-00-616-9181	LBH SO SURE	BHDRJ	1	CAN	24	V3
F01-05	SPRAY PAINT ORANGE	8010-00-584-3148	LBH SO SURE	BFGMY	0	CAN	36	V3
F01-06	SPRAY PAINT TELLOW	8010-00-721-9744	LBH SO SURE	BJLJR	1	CAN	36	
F01-07	SPRAY PAINT LACQUER	0	KRYLON		1	CAN	36	
F01-08	SPRAY ADHESIVE	8040-00-995-7080	3M		2	CAN	36	
F01-09	NON-STREAK CLEAN ZEP40	0	ZEP		1	CAN	36	
F01-10	SUPERTECH CONTACT CLNR	0	TECHNICLEAN		1	CAN		
F01-11	STARTING FLUID	0	JOHN DEERE		0	CAN		
F01-	CARC GREEN	8010-01-229-9561	HENZEN	BGQZJ	2	GAL	12	F2

13

F01-14	CARC BLACK	8010-01-229-7541	HENZEN	BGQYX	2	GAL	12	F3
F01-15	CARC BROWN	8010-01-229-7544	HENZEN	BGQZD	2	GAL	12	F2
F01-16	CARC TAN	8010-01-276-3639	HENZEN	BHXJS	2	GAL	12	
F01-17	PAINT FLOOR & DECK GRAY	0	FULLER OBRIEN		1	GAL		
F01-18	PAINT, POLYURETHANE	0	BENJAMIN MOORE		1	GAL		
F01-19	PAINT, LATEX EGGSHELL	0	FULLER OBRIEN		1	GAL		
F01-20	black acrylic lacquer	8010-00-935-7079	so sure		<del>1</del> 8	can	36	





**IAQ MEASUREMENTS  
GREAT FALLS ARMORY  
GREAT FALLS, MONTANA  
OCTOBER 1, 2012**

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
Office / Orderly Room	446	73	39	0
Classroom	310	72.8	34.7	0
Library	312	73.2	33.5	0
IFR	322	72.9	33.1	0
Break Room	358	73.1	32.8	0
Drill Floor	343	74	33.6	0
Maintenance Bay	336	73.8	33.2	1

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

°F = Fahrenheit

RH = Relative Humidity

CO = Carbon Monoxide

STEL = Short Term Exposure Limit



**ILLUMINANCE SURVEY  
GREAT FALLS ARMORY  
GREAT FALLS, MONTANA  
OCTOBER 1, 2012**

Building	Location	Light – FC	Minimum lighting requirements – FC
Commander's Office	Desk	100.5	50
Classroom	Desk	57.4	50
Library	Desk	65.8	50
Break Room	Table	117.8	30
Drill Floor	South	41.4	30
Drill Floor	Center	36.7	30
Maintenance Bay	Workbench	35.6	30
Kitchen	Center	41.4	30
Lobby	Entrance	282.2	30

\*FC= foot candle measurement



**EXHAUST VENTILATION SYSTEM MEASUREMENTS  
GREAT FALLS ARMORY  
GREAT FALLS, MONTANA  
OCTOBER 1, 2012**

**West Vehicle Exhaust Drop – 6 ½ inches in Diameter**

Monitoring Location	Linear Feet per Minute (LFM)	Cubic Feet per Minute (CFM)
Face of ventilation duct	3,780 LFM	871 CFM

**East Vehicle Exhaust Drop – 6 ½ inches in Diameter**

Monitoring Location	Linear Feet per Minute (LFM)	Cubic Feet per Minute (CFM)
Face of ventilation duct	5,113 LFM	1,178 CFM

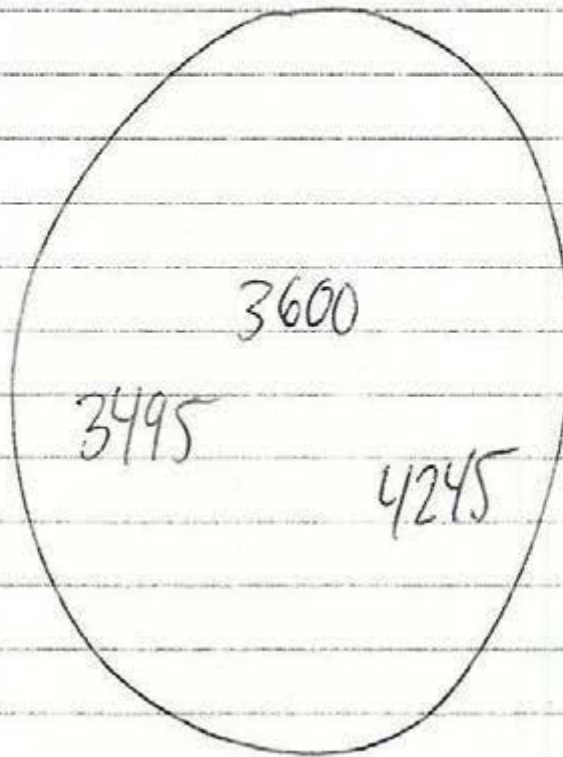
# Great Falls - Maintenance Bay - Vehicle Exhaust Drops

#1 (West)

CFM = ~~3484~~

6 1/2  
inches

LFM = 3,180  
CFM = 871



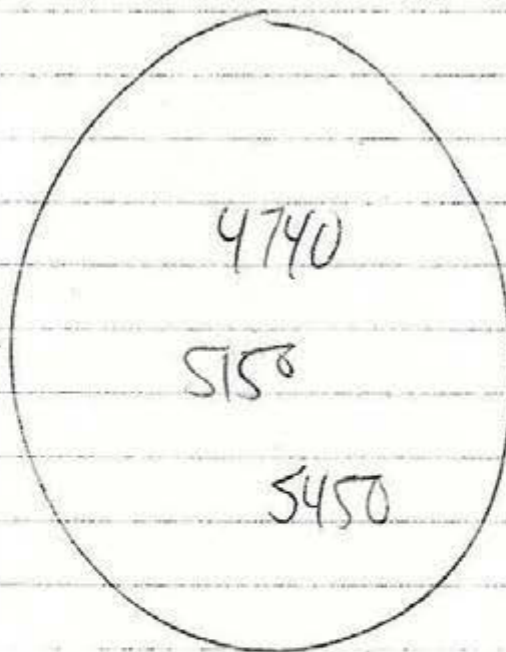
#2 (East)

CFM = ~~4742~~

6 1/2

LFM = 5,113

CFM = 1178



Great Falls Armory - LB - 10/1/12 - 013.1H1774.76

Lead Wipe Sample

PREVIOUS  
root of building

Sample #

10112-GF-01

10112-GF-02

-03

-04

-05

-06

-07

-08

-09

Location

Drill Floor, SW

NW

Center

SE

NE

Kitchen

Maintenance Bay

IFR

IFR



Name:

LB

Date:

10/1/2012

NES Job Number:

013.1H1344.76  
Great Falls

## Light Survey

Building	Location	Light - ft/c
Armory ↓	Commander office @ Desk	100.5 f/c
	Classroom	57.4 f/c
	Library	65.8 f/c
	Break Room	117.8 f/c
	Drill Floor (South)	41.4 f/c
	Drill Floor (Center)	36.7 f/c
	Kitchen	41.4 f/c
	Maintenance Bay	35.6 f/c
	Junkie Closet	65.7 f/c
	Lobby Entrance	282.0 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 55125 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 (2019.4)	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)	13.905~14.198 (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	E001544	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: CERT000001





# 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: f/min (m/s)
#	STANDARD	MEASURED	ALLOWABLE RANGE	#	STANDARD	MEASURED	ALLOWABLE RANGE
1	0 (0.00)	0 (0.00)	-3-3 (-0.07-0.02)	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 (22.83)	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	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	H003327	09-19-07	09-19-12				

**Non-Responsive**

March 27, 2012

DATE

Form ID: CERT\_DEFAULT

# 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.



**TABLE 1**  
**LEAD WIPE SAMPLE RESULTS**  
**GREAT FALLS ARMORY**  
**OCTOBER 1, 2012**

Sample Number	Sample Area	Sample Location	Results ( $\mu\text{g}/\text{ft}^2$ )	ARNG Standard
10112-GF-01	Drill Floor	Southwest corner of drill floor	<2.5	$\leq 40 \mu\text{g}/\text{ft}^2$
10112-GF-02	Drill Floor	Northwest corner of drill floor	2.8	$\leq 40 \mu\text{g}/\text{ft}^2$
10112-GF-03	Drill Floor	Center, middle of drill floor	3.7	$\leq 40 \mu\text{g}/\text{ft}^2$
10112-GF-04	Drill Floor	Southeast corner of drill floor	5.3	$\leq 40 \mu\text{g}/\text{ft}^2$
10112-GF-05	Drill Floor	Northeast corner of drill floor	<2.5	$\leq 40 \mu\text{g}/\text{ft}^2$
10112-GF-06	Kitchen	Middle of floor sample	10	$\leq 40 \mu\text{g}/\text{ft}^2$
10112-GF-07	Maintenance Bay	Work bay floor	2.9	$\leq 40 \mu\text{g}/\text{ft}^2$
10112-GF-08	Indoor Firing Range	Lane #2 at shooters feet area	21	$\leq 40 \mu\text{g}/\text{ft}^2$
10112-GF-09	Indoor Firing Range	Lane #4 at shooters feet area	14	$\leq 40 \mu\text{g}/\text{ft}^2$

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

ARNG = Army National Guard

ND = none detected at or above the analytical detection limit





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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: **34-1228521**

Client Project ID: 013.IH1374.76/Great Falls, MT

Purchase Order: 013.IH1374.76

Project Manager: **Non-Responsive**

**Analytical Results**

Sample ID: <b>10112-GF-01</b>	Media: Ghost Wipe	Collected: 10/01/2012
Lab ID: 1228521001	Sampling Location: Great Falls, MT	Received: 10/11/2012
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 1 ft <sup>2</sup>	Prepared: 10/11/2012 Analyzed: 10/12/2012
Analyte	ug/sample	ug/ft <sup>2</sup> RL (ug/sample)
Lead	<2.5	<2.5 2.5

Sample ID: <b>10112-GF-02</b>	Media: Ghost Wipe	Collected: 10/01/2012
Lab ID: 1228521002	Sampling Location: Great Falls, MT	Received: 10/11/2012
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 1 ft <sup>2</sup>	Prepared: 10/11/2012 Analyzed: 10/12/2012
Analyte	ug/sample	ug/ft <sup>2</sup> RL (ug/sample)
Lead	2.8	2.8 2.5

Sample ID: <b>10112-GF-03</b>	Media: Ghost Wipe	Collected: 10/01/2012
Lab ID: 1228521003	Sampling Location: Great Falls, MT	Received: 10/11/2012
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 1 ft <sup>2</sup>	Prepared: 10/11/2012 Analyzed: 10/12/2012
Analyte	ug/sample	ug/ft <sup>2</sup> RL (ug/sample)
Lead	3.7	3.7 2.5

Sample ID: <b>10112-GF-04</b>	Media: Ghost Wipe	Collected: 10/01/2012
Lab ID: 1228521004	Sampling Location: Great Falls, MT	Received: 10/11/2012
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 1 ft <sup>2</sup>	Prepared: 10/11/2012 Analyzed: 10/12/2012
Analyte	ug/sample	ug/ft <sup>2</sup> RL (ug/sample)
Lead	5.3	5.3 2.5

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

Environmental

[www.alsglobal.com](http://www.alsglobal.com)

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ANALYTICAL REPORT

Workorder: **34-1228521**  
Client Project ID: 013.IH1374.76/Great Falls, MT  
Purchase Order: 013.IH1374.76  
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](mailto:alsit.lab@ALSGlobal.com)  
Web: [www.alsslc.com](http://www.alsslc.com)

**General Lab Comments**

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

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

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

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

Testing Sector	Accreditation Body (Standard)	Certificate Number	Website
Environmental	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.

\*\* 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.





1228521

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 10/1/12 Purchase Order No. 013.1H134.76

3. Company Name NES

Address

Person to 4

Telephone

Fax Teleph

E-mail Address

Billing Address

4. Quote No.

### ALS Project Manager

## 5. Sample Collection

Sampling Site Croft Falls, MT

Industrial Process Army National Guard

Date of Collection 10/11/2012

Time Collected 7:25 AM

Date of Shipment 10/9/12

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

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. 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 C

## 7. Chain

## Relinquish

Received

Relinquish

Received

Date/Time 10/9/12 17:00 PM

Date/Time 10/1/12 2:47 PM

Date/Time

Date/Time 10/11/12 09:15

9

123

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

ALS Environmental

Non-Responsive



## Employee List

Facility:

Location:

Date:

Social Security # (Last 4 Digits)									
Non-Responsive									
Non-Responsive									



**Industrial Hygiene Southwest**  
**Violation Inventory Log**  
**LOG OF SCHEDULE OF CORRECTIVE ACTION - COMPLIANCE WITH SAFETY AND HEALTH STANDARDS**  
**Readiness Center Great Falls, Great Falls, MT**

CONTROL NUMBER	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/NCIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
RCGF-10112-4.6.1 CLOSED [X]	Update the current inventory of all hazardous materials	Armory Flammable Locker	4	Update chemical inventories for all hazardous materials and maintain current inventory sheets.					29 CFR 1910.1200(d)(1)

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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 Great Falls 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).

**N4.7.1 Hazardous Materials Inventory & Material Safety Data Sheets (MSDS)** - The current inventory of all hazardous materials needs to be updated to represent the chemicals being stored at the Armory. Update chemical inventories for all hazardous materials and maintain current inventory sheets.



## *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.



- 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 10112-GF-01, 02, 03, 04, 05 were collected from the Drill Floor area.
Are any <b>weapons cleaned</b> in the facility, if yes where are they cleaned?	No, Weapons are cleaned in the field.
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 floor area. Sample 07 was collected from the maintenance bay floor area.
Is there a <b>converted indoor firing range</b> ? If so collect additional wipe samples IAW the SOW.	Samples 08 and 09 were collected from the IFR in lanes 2 and 4
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 ACM? Where and what condition is it in. Bulk sample if able.	No.
Quality of housekeeping	Good.
HVAC maintenance plan in place?	Yes through the state. Up to date on all inspection and maintenance manuals.
<b>Overall condition</b> of HVAC system	Good working condition.
Obtained <b>CO2, Temp, RH</b> monitoring	Attached to report.
<b>HAZMAT</b> inventory 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.	Two flammable cabinet lockers. No incompatibilities found.

Evaluate Kitchen Stove Hood Flow if Present IAW NFPA Standard 96.	Could not be turned on for evaluation during the IHS AV.
Collect Source Noise Measurements of Kitchen Appliances and Document Using DD 2214	No high noise areas identified or monitored during the IHS AV.
Conduct a safety walkthrough of entire facility document any safety deficiencies found.	Yes
<u>Take photos</u> of outside of building, all sample points and any pertinent hazards or concerns.	Yes
Name of Armory, POC, phone #, address and organizations in Armory  (Add Checklist to Report)	Great Falls Armory <b>Non-Responsive</b> 406-457-3155 401 63 <sup>rd</sup> Street Great Falls, MT 59405  (Add Checklist to Report)



Y 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 DOE/HRSH-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 DOE/HRSH-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			



# Y 11 Installation Status Report (ISR) Services Documentation

Number of processes that require an assessment for potential inhalation exposure to employees within the last 12 months.	Intellicode	Q1	Q2	Q3	Q4 Annual
Number of personnel who were reassessed by industrial hygiene within the last 12 months.	953-02-14	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 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	2			
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	1			
Number of ventilation systems which were evaluated by an IH	953-02-19	2			
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

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## ARMY NATIONAL GUARD INDUSTRIAL HYGIENE - SOUTHWEST

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# Industrial Hygiene Site Assistance Visit

## Hamilton Armory Indoor Firing Range (IFR)

910 Main Street  
Hamilton, MT 59840

15 AUG 2013

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

12 December 2013

MEMORANDUM THRU [REDACTED]  
59636

Non-Responsive

DSS, 1956 Mt. Majo St., Room 1009, Helena, MT

FOR Commander Hamilton Armory Indoor Firing Range (IFR) at 910 W. Main St., Hamilton, MT  
59840

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (SAV) for the Hamilton  
Armory Indoor Firing Range (IFR) at 910 W. Main St., Hamilton, MT on 15 AUG 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 Livingston Armory Indoor Firing Range (IFR) at 24 Fleshman Creek Rd, Livingston, MT on 13 AUG 2013.

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

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

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

3. Findings. See survey report.

4. Commendable.

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

5. Observations / Recommendations.



**ARNG-CSG-P**

**SUBJECT:** Executive Summary for Industrial Hygiene Site Assistance Visit (SAV) for the Hamilton Armory Indoor Firing Range (IFR) at 910 W. Main St., Hamilton, MT on 15 AUG 2013.

**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. Do not allow employees to disturb materials which contain or are suspected to contain asbestos. Include asbestos awareness in the Hazard Communication program training. Post warning signs, ensure employees are aware of asbestos presence within this facility. Consult a certified asbestos abatement contractor to have damaged asbestos removed or stabilized. (para. 5.3) (RAC 3)

b. Install electrical junction box cover(s) within the Converted IFR & Outdoor, west side of building to help prevent an electrical hazard. (para. 4.5.1 & 4.5.7) (RAC 3)

c. 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 a lead dust exposure in this facility/area. Make sure staff and maintenance personnel are aware of the associated hazards of lead exposure. (para 4.1.10 & 4.1.8) (RAC 4)

d. Improve housekeeping practices and utilize SOP included to help prevent migration of noted lead dust in this Converted IFR. Areas noted to be above 40 ug/ft<sup>2</sup> should get special attention and areas should be retested once thoroughly cleaned. (para. 5.1) (RAC 3)

e. 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 to help improve lighting in classroom. (para. 5.5) (RAC 4)

f. Electrical outlet within the Converted IFR should have a cover installed & outlet on west wall in drill hall should be repaired or replaced. (para. 4.5.6) (RAC 3)

g. Ensure the staff and anybody going into the armory (converted IFR & armory proper) are aware of the associated hazards for lead and asbestos containing materials.

h. Repair the Flammable Storage locker, found in the supply room, so it will self-close as designed. (para. 4.5.3) (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.

**ARNG-CSG-P**

**SUBJECT:** Executive Summary for Industrial Hygiene Site Assistance Visit (SAV) for the Hamilton Armory Indoor Firing Range (IFR) at 910 W. Main St., Hamilton, MT on 15 AUG 2013.

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

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

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

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

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

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

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

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

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

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

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



ARNG-CSG-P

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (SAV) for the Hamilton Armory Indoor Firing Range (IFR) at 910 W. Main St., Hamilton, MT on 15 AUG 2013.

(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, approval and 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 Hamilton Armory & IFR - Hamilton, MT

CONTROL NUMBER	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/NCOIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
<input type="checkbox"/> CLOSED									
MTHMLTARM- 08152013-4.5.1	Electrical meter box has exposed wiring	Outdoors, west side of building	3	Install a cover on the electrical meter box to prevent access to exposed wiring or hire an electrical contractor to remove the box if it is dead & not to be used.					29 CFR 1910.303(b)(1); 1910.303(b)(7)(i);
MTHMLTARM- 08152013-4.5.2	Damaged electrical outlet	West wall of Drill Floor	4	Repair or replace the damaged electrical outlet.					29 CFR 1910.303(b)(1)
MTHMLTARM- 08152013-4.5.3	Flammable materials storage locker is not self-closing	Supply Room & POL Storage	4	Repair the storage locker to ensure the doors are self- closing.					29 CFR 1910.106(d)(3)(ii); Uniform Fire Code 79.201
MTHMLTARM- 08152013-4.5.4	Open container (rubber tray) of used oil	POL Storage Shed	4	Used oil should be stored in sealed containers with proper labels.					29 CFR 1910.106(d)(3)(i) & 40 CFR 299.22(a)
MTHMLTARM- 08152013-4.5.5	GFCI outlet with an open neutral	Closet (Lav)	4	Repair or replace the GFCI outlet.					29 CFR 1910.303(b)(1)
MTHMLTARM- 08152013-4.5.6	Electrical outlet is missing a cover	Floor of converted IFR	3	Install covers on all electrical outlets.					29 CFR 1910.303(b)(1); 1910.303(b)(7)(i);



# Industrial Hygiene Southwest

## Violation Inventory Log

### LOG OF SCHEDULE OF CORRECTIVE ACTION - COMPLIANCE WITH SAFETY AND HEALTH STANDARDS Hamilton Armory & IFR - Hamilton, MT

CONTROL NUMBER	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/NCOIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
MTHMLTARM- 08152013-4.5.7 CLOSED <input type="checkbox"/>	Electrical junction box is missing a cover	Converted IFR	3	Install covers on all junction boxes.					29 CFR 1910.303(b)(1); 1910.303(b)(7)(i);
MTHMLTARM- 08152013-5.1	Lead concentrations exceed established criteria	Converted IFR	3	The converted IFR (locker room) area needs a more thorough cleaning of lead below ARNG thresholds. Clean the locker room in accordance with the Armory SOP for lead cleanup. Have follow-up testing conducted to meet acceptable concentrations.					29 CFR 1910.1025 (h)(1)
MTHMLTARM- 08152013-5.3	Asbestos containing materials are present. The asbestos containing material in the closet (LAV) shows signs of disturbance.	Armory, Closet (Lav)	3	Do not allow employees to disturb materials which contain or are suspected to contain asbestos. Include asbestos in the Hazard Communication Program. Post warning signs. Ensure employees are aware asbestos is present in the building. Consult with a certified asbestos abatement contractor to have damaged asbestos removed or stabilized.					General Duty Clause 5(a)(1); 29 CFR 1910.1001; 29 CFR 1926.1101
MTHMLTARM- 08152013-5.5	Illumination levels were too low for activities performed	Classroom	4	Increase lighting in these areas to provide the necessary illumination for activities performed.					41 CFR 101.20- 107



## ***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  
Hamilton Armory & IFR  
Hamilton, Montana  
August 15, 2013**



**INDUSTRIAL HYGIENE SITE ASSISTANCE VISIT (IHSV)**

**HAMILTON ARMORY & INDOOR FIRING RANGE**

910 WEST MAIN STREET  
HAMILTON, MONTANA 59840

**August 15, 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.IH1449.08**

*Prepared by:*

**Non-Responsive**

*Industrial Hygiene Specialist*

**Non-Responsive**

*Certified Industrial Hygienist*

**Non-Responsive**

*Senior Industrial Hygienist*

**Non-Responsive**

**Appendices:**

<b>Appendix A</b>	<b>References</b>
<b>Appendix B</b>	<b>Assessment Criteria</b>
<b>Appendix C</b>	<b>Photo Log</b>
<b>Appendix D</b>	<b>Chemical Inventory</b>
<b>Appendix E</b>	<b>Floor Plan/Illumination Survey/IAQ – Temp, RH, &amp; CO<sub>2</sub></b>
<b>Appendix F</b>	<b>Ventilation Data</b>
<b>Appendix G</b>	<b>Field Notes</b>
<b>Appendix H</b>	<b>Calibration Certificates</b>
<b>Appendix I</b>	<b>Analytical Results</b>
<b>Appendix J</b>	<b>Laboratory Reports</b>
<b>Appendix K</b>	<b>Employee List</b>
<b>Appendix L</b>	<b>IHSW Violation Inventory Log</b>
<b>Appendix M</b>	<b>Hazard Assessments</b>
<b>Appendix N</b>	<b>Recommendations</b>
<b>Appendix O</b>	<b>DD Forms 2214</b>
<b>Appendix P</b>	<b>Installation Status Report</b>
<b>Appendix Q</b>	<b>Facility Information</b>
<b>Appendix R</b>	<b>Safety Related Information</b>
<b>Appendix S</b>	<b>Noise Dosimetry Data</b>
<b>Appendix T</b>	<b>Additional Supporting Information</b>



## EXECUTIVE SUMMARY

On August 15, 2013, [Non-Responsive] Certified Industrial Hygienist (CIH), and [Non-Responsive] Industrial Hygiene Specialist, both of Network Environmental Systems, Inc. (NES), conducted an Industrial Hygiene Site Assistance Visit (IHS&V) at the Hamilton Army / Indoor Firing Range (IFR) combination facility, located at 910 West Main Street in Hamilton, Montana. The primary point of contact (POC) for information gathered during this survey was [Non-Responsive] who may be reached by phone at (406) 324-5255 or by email at [Non-Responsive]

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

- Evaluate work processes conducted within the facility;
- Perform a physical inspection of the 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 IHS&V 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.

Commentables: [Non-Responsive] was very helpful with providing critical information during this IHS&V.

## 1.0 INTRODUCTION

On August 15, 2013, [Non-Responsive] Certified Industrial Hygienist (CIH), and [Non-Responsive] Industrial Hygiene Specialist, both of NES, conducted an IHSAV at the Hamilton Armory / IFR combination facility, located at 910 West Main Street in Hamilton, Montana. The primary POC for information gathered during this survey was [Non-Responsive] who may be reached by phone at (406) 324-5255 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 a physical inspection of the 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 Hamilton Armory/ IFR combination facility currently has two (2) full time guard members performing administrative duties. The primary unit assigned to this facility is Detachment 3 of the 230<sup>th</sup> Vertical Engineering Company **Non-Responsive** The facility has offices used for administrative and recruiting purposes, a converted indoor firing range (IFR), a drill floor, storage rooms, a classroom, supply rooms, bathrooms and a kitchen. The facility operates weekdays, Monday thru Friday, from 0800 to 1700.

The IFR has been converted into a locker room for facility personnel. Documentation of repurposing and the date of conversion were not available. Lead wipe sampling was performed during this IHS AV in order to confirm adequate cleaning of the IFR had been completed. Weapons are currently cleaned in the vault room. Once per month there are 42 in unit personnel onsite for drills. There are no civilian activities performed onsite.



### 3.0 METHODS

#### 3.1 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.

#### 3.2 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.

#### 3.3 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. All samples, if collected, were submitted to ALS Environmental Laboratory, located in Salt Lake City, Utah to be analyzed for asbestos in accordance with NIOSH 9002 method.

#### 3.4 Indoor Air Quality

Carbon dioxide (CO<sub>2</sub>), temperature, and relative humidity were measured using a TSI IAQ-Calc Meter, 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 (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.

### **3.5 Illumination Level Monitoring**

Illumination measurements were taken throughout the facility using a Konica Minolta Light Meter, Model TL-1. Measurements in office areas were taken at typical work locations, such as the tops of desks and near workstations. To provide information on the overall lighting conditions in the remainder of the facility, measurements were taken from the surfaces of typical work locations and at waist level from selected locations. A copy of the annual calibration certificate for this instrument is located in Appendix H.

### **3.6 Ventilation Survey**

Air velocity and flow measurements were not collected during this IHS AV.

### **3.7 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 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. Any water impacted areas noted were documented for follow-up evaluation.

### **3.9 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.

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

A review of the facility's chemical inventory and material safety data sheet (MSDS) file was conducted. Chemical storage areas (i.e., flammable storage cabinets and rooms) were also inspected as part of this IHS AV.



### 3.11 Safety Training and Record Keeping

A cursory inspection 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.

### 3.12 Safety Walk-Through

A safety walk-through evaluation of the facility was performed to identify existing conditions and whether safety hazards or deficiencies were present. Some potential conditions include: presence of a fire alarm; proper mounting and inspection of fire extinguishers; ground fault circuit interrupter (GFCI) testing; and proper inspection of eyewash stations

### 3.13 Equipment Used

The following equipment was used for this survey:

Type	Model Number	Serial Number	Calibration Date
TSI IAQ-Calc Meter	7545	T75450846008	October 2013
Konica Minolta Light Meter	TL-1	90480719	May 2013

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

### 3.14 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**

Staining was observed on the PSG office ceiling tiles and underneath the windows along the north wall of the facility, indicating water infiltration at some point. There w no visual signs of fungal growth during this IHS AV.

### **4.2 Facility/Building HVAC 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 Hazardous Material Storage and Use Procedures**

#### **4.3.1 Hazardous Materials Inventory & Material Safety Data Sheets**

A complete inventory of hazardous materials used at the facility was posted in the janitor's closet along with corresponding MSDS. A copy of the inventory was not provided.

#### **4.3.2 Hazardous Materials Storage**

Hazardous materials are stored inside of flammable storage lockers located in the supply room and the outdoor POL storage shed. These materials are kept in small quantities and the storage locations were in good condition during this IHS AV.

### **4.4 Safety Training and Record Keeping**

The following training documentation was found at the site:

- Personal Protective Equipment
- Hazard Communication (HAZCOM)
- Hearing Conservation Program
- Respiratory Protection Program
- Confined Space Entry 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. Some of the conditions observed are documented in photographs, attached in Appendix C (Photo Log).

1. An electrical box located on the west side of the facility exterior was found to be missing a meter panel. The panel had exposed wiring and presented a potential shock hazard.
2. A damaged electrical outlet was observed on the west wall of the drill floor.
3. The flammable materials storage cabinet #2 in the supply room and the cabinet in the POL shed did not have self-closing doors.
4. An open pan of used oil was stored on top of the flammable materials storage locker in the POL storage shed.
5. The GFCI electrical outlet in the closet labeled "Lav" indicated an open ground during testing.
6. A floor outlet in the converted IFR was missing a cover (no photo).
7. An uncovered electrical junction box was observed in the converted IFR (no photo).

## 5.0 SAMPLING RESULTS

### 5.1 Lead Wipe Sampling

Wipe samples for lead dust were collected from horizontal surfaces in selected representative areas of the Hamilton Armory / IFR 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; class 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 ten (10) Ghost Wipe™ lead wipe samples were collected during the IHSAP to be analyzed in accordance with NIOSH Method 7300, modified for Ghost Wipes™. Five (5) of the samples were collected from the center and four corners of the drill floor. Three (3) samples were collected from the converted indoor firing range. The other samples were collected from the vault floor and classroom tabletop. Photographs were taken of each sampling location, provided in Appendix C (Photo Log). The analytical results are summarized in the table below. Laboratory results are attached in Appendix J.

Sample Number	Sample Area	Sample Location	Results ( $\mu\text{g}/\text{ft}^2$ )	ARNG/HUD Standard
081513-HMLTARM-01	Drill Floor	Southeast corner, floor	10	$\leq 40 \mu\text{g}/\text{ft}^2$
081513-HMLTARM-02	Drill Floor	Northeast corner, floor	11	$\leq 40 \mu\text{g}/\text{ft}^2$
081513-HMLTARM-03	Drill Floor	Northwest corner, floor	7.6	$\leq 40 \mu\text{g}/\text{ft}^2$
081513-HMLTARM-04	Drill Floor	Center, floor	9.5	$\leq 40 \mu\text{g}/\text{ft}^2$
081513-HMLTARM-05	Drill Floor	Southwest corner, floor	24	$\leq 40 \mu\text{g}/\text{ft}^2$
081513-HMLTARM-06	Vault	Floor	120	$\leq 200 \mu\text{g}/\text{ft}^2$



081513-HMLTARM-07	Classroom	Tabletop	< 1.3	$\leq 40 \mu\text{g}/\text{ft}^2$
081513-HMLTIFR-01	Converted IFR	Top of locker	2.5	$\leq 40 \mu\text{g}/\text{ft}^2$
081513-HMLTIFR-02	Converted IFR	Floor near stairs	68	$\leq 40 \mu\text{g}/\text{ft}^2$
081513-HMLTIFR-03	Converted IFR	Southwest corner, floor	44	$\leq 40 \mu\text{g}/\text{ft}^2$

**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 areas sampled, except for the converted IFR floor samples. These locations should be cleaned to remove excess lead contamination. The Armory SOP for lead cleanup is provided in Appendix R (Safety Related Information).

## 5.2 Painted Surface Evaluation

Peeling paint was identified in two locations during the IHS AV. The first location was the exterior of the building at the base of the east wall. The second location was the handrail in the stairwell leading to the converted IFR. A total of two (2) paint chip samples were collected from these locations to be analyzed for lead in accordance with NIOSH Method 7300. The analytical results are summarized in the table below. Detailed laboratory results are included in Appendix J.

Sample Number	Sample Location/Description	Results (%) of Lead	EPA/HUD Standard
081513-HMLTARM-Bulk 1	East side of building exterior	0.004	$\leq 0.5\%$
081513-HMLTARM-Bulk 5	Staircase handrail to converted IFR	0.087	$\leq 0.5\%$

**Bold** = Denotes sample results exceed the EPA/HUD standard and is considered to be lead-containing paint.

The paint chip samples collected were reported to contain < 0.5% lead by weight and are not considered to be lead based paint.

## 5.3 Asbestos Evaluation

Building materials suspected to contain asbestos were identified during the IHS AV. These building materials include the following:

- 1ft x 1ft ceiling tile with mastic;

- 9 inch x 9 inch floor tile (checkered pattern) with mastic;
- Thermal system insulation (TSI) on hot water piping;
- Spray-on acoustical material
- Transite board

Bulk samples were collected from three (3) of these building materials to determine whether asbestos was indeed present. Samples were collected from the following locations: the TSI on the hot water pipe located in the boiler room; the spray-on acoustical material in the closet labeled "Lav"; and the transite board in the same closet. The ceiling material and transite board showed signs of damage, believed to be from cutting prior to collection. Each sample collected was sealed in an airtight plastic bag and labeled with a sample number. Bulk asbestos samples were submitted under chain-of-custody to ALS Laboratory located in Salt Lake City, Utah. ALS is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) and participates in the American Industrial Hygiene Association (AIHA) Proficiency Analytical Testing (PAT) Program for asbestos.

Analysis for asbestos was performed using Polarized Light Microscopy (PLM) with dispersion staining by EPA Method 600/R-93/116. PLM is the EPA approved method for evaluating the presence of asbestos in bulk materials. The lower limit of detection of asbestos using PLM is approximately one percent (1%) by area. When "None Detected" (ND) appears in this report, it should be interpreted as meaning no asbestos was observed in the sample material above the reliable limit of detection for the PLM method. A summary of the laboratory results is provided in the table below. Detailed analytical results are included in Appendix J.

Sample Number	Location	Description	Result
081513-HMLTARM-Bulk 2	Boiler Room	Hot water pipe insulation	ND
081513-HMLTARM-Bulk 3	Closet (Lav)	Spray-on acoustical material	3 - 5% Chrysotile
081513-HMLTARM-Bulk 4	Closet (Lav)	Transite board	10 - 20% Chrysotile

**Bold** = indicates building material is asbestos-containing (ACM)

Laboratory results indicate asbestos was detected in two of the samples collected. 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 damage.



#### 5.4 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 facility HVAC system is able to provide the general dilution by removing indoor contaminants and displacing them outdoors. Also the HVAC system is able to provide temperature controls, relative humidity controls and air cleaning. The average outdoor carbon dioxide concentration was measured to be 220 parts per million (ppm); therefore, the maximum indoor CO<sub>2</sub> concentration recommended by ASHRAE would be 920 ppm. The CO<sub>2</sub> concentrations from the 17 locations measured inside the facility ranged between 224 and 427 ppm, well within the ASHRAE recommended concentration. 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 building ranged between 69 and 73°F. Relative humidity ranged from 39 to 48%. The rooms measured were within the ASHRAE recommended ranges for temperature and relative humidity. A table of the sample locations and corresponding IAQ measurements is available in Appendix E.

#### 5.5 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 in the drill hall ranged from 52 to 66 FC. Illumination was measured from a total of twenty-one (21) locations. Just one measurement collected did not meet the illumination criteria. This location was in the classroom. See Appendix E for a table of illumination measurements and locations.



## **5.6 Ventilation Survey**

Air velocity and flow measurements were not collected during this IHSAV.

## **5.7 Sound-Level Measurements**

Personal noise dosimetry and sound-level measurements were not collected during this IHSAV as no hazardous noise sources were identified.

## 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*

December 10, 2013

Date

**Non-Responsive**

*Industrial Hygiene Program Manager*

December 16, 2013

Date

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

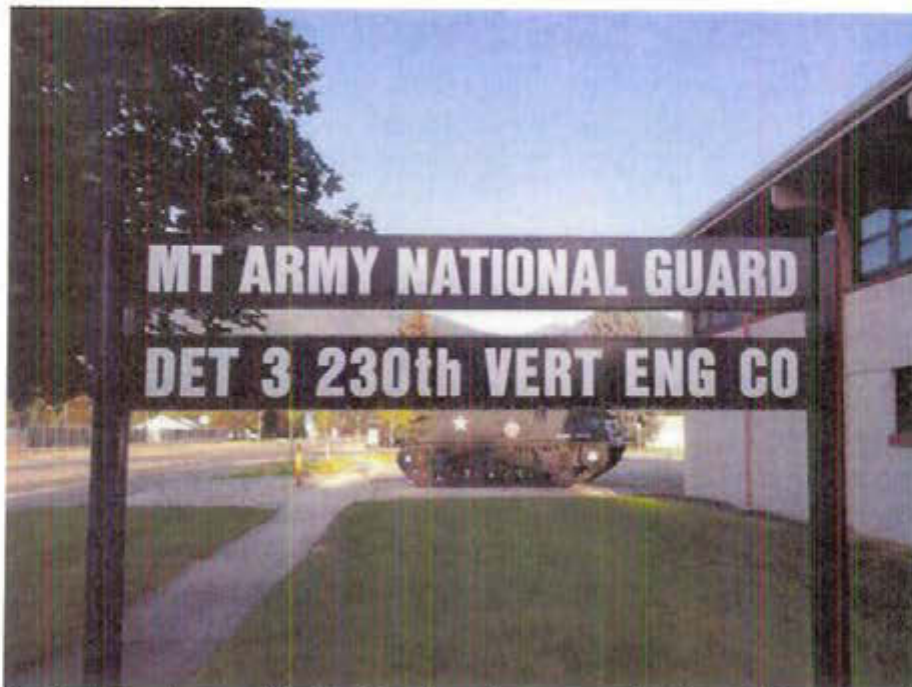
Unlike the OSHA PELs, the ACGIH TLVs are not consensus standards; however, TLVs represent a scientific opinion based on a review of existing peer-reviewed scientific literature by committees of experts in public health and related sciences.

#### **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).



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**HAMILTON, MONTANA**  
**AUGUST 15, 2013**



**Photo 1:** Facility signage for the Hamilton Armory and Indoor Firing Range (IFR).



**Photo 2:** Front entrance of the Hamilton facility.



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**Photo 3: Drill floor, view to the northwest.**



**Photo 4: Electrical box missing meter panel, possible access to live conductors.**

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**Photo 5:** Damaged electrical outlet located on the western wall of the drill floor.



**Photo 6:** Flame cabinet in Supply room, self-closing feature non-operational.

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**Photo 7:** Flame cabinet in POL shed, self-closing feature non-operational, fuel stored on top of cabinet.



**Photo 8:** Container of used oil stored on top of flame cabinet in POL shed.



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**Photo 9:** 120 liters of fuel stored in the cold storage building.



**Photo 10:** GFCI tester indicates "Open Ground" in Supply Closet (labeled LAV).

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**Photo 11:** Water damaged ceiling tiles in PSG office, 1'x1' ceiling tiles are suspected to have asbestos containing mastic.



**Photo 12:** 9"x9" floor tiles are suspected to be asbestos containing material.

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**Photo 13:** Lead wipe sample 81513-HMLTIARM-01 collected from the drill floor, southeast corner.



**Photo 14:** Lead wipe sample 81513-HMLTIARM-02 collected from the drill floor, northeast corner.



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**Photo 15:** Lead wipe sample 81513-HMLTIARM-03 collected from the drill floor, northwest corner.



**Photo 16:** Lead wipe sample 81513-HMLTIARM-04 collected from the drill floor, center.

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**Photo 17:** Lead wipe sample 81513-HMLTIARM-05 collected from the drill floor, southwest corner.

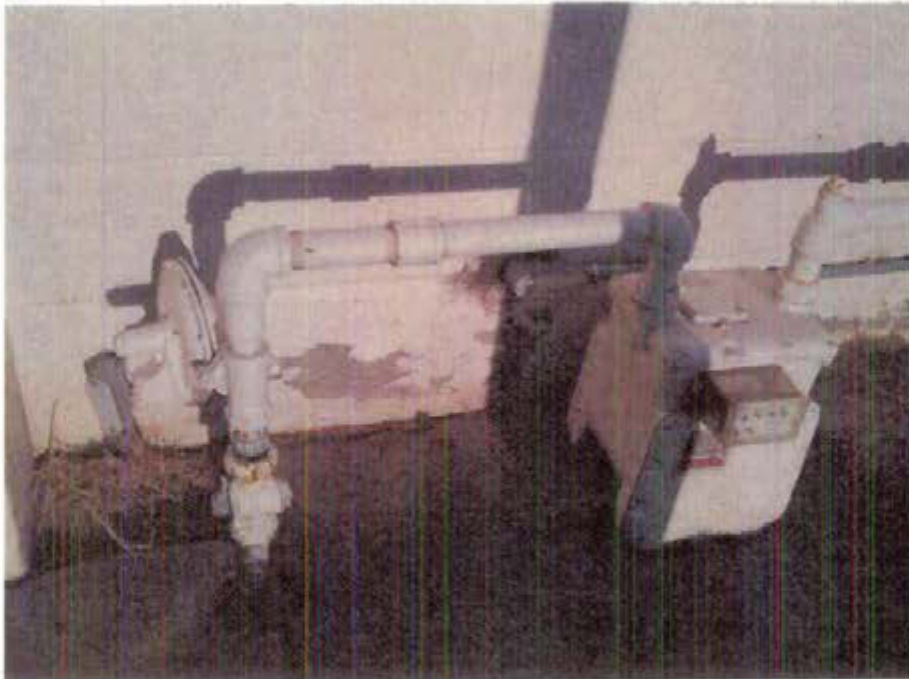


**Photo 18:** Lead wipe sample 81513-HMLTIARM-06 collected from the vault floor.

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**HAMILTON, MONTANA**  
**AUGUST 15, 2013**



**Photo 19:** Lead wipe sample 81513-HMLTIARM-07 collected from the tabletop in the classroom.



**Photo 20:** Bulk paint chip sample 81513-HMLTIARM-Bulk 1 collected from eastside of the building's exterior.



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HAMILTON, MONTANA  
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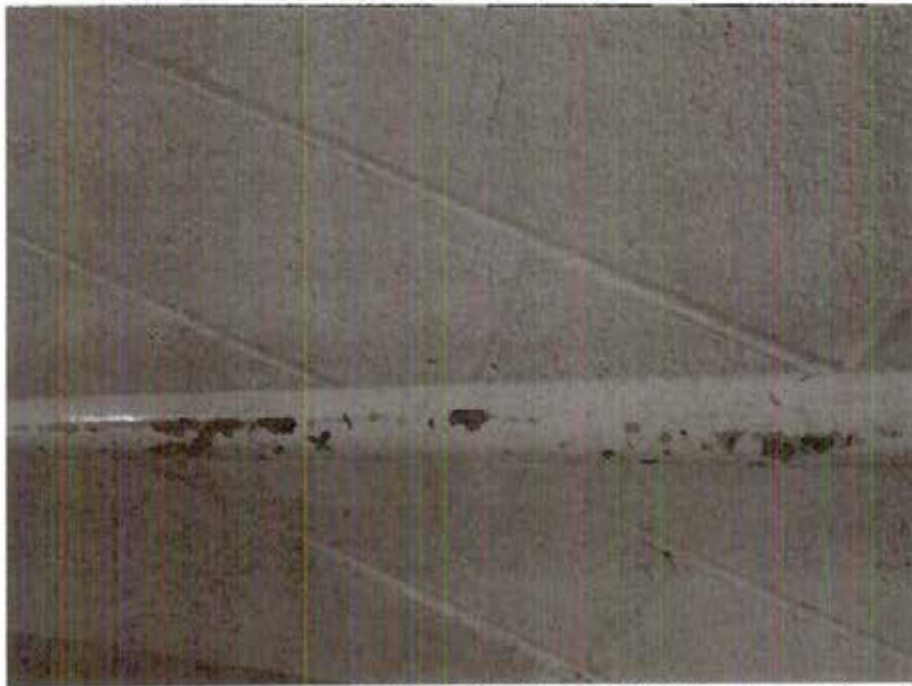


**Photo 21:** Bulk asbestos sample 81513-HMLTIARM-Bulk 2 collected from hot water pipe insulation.

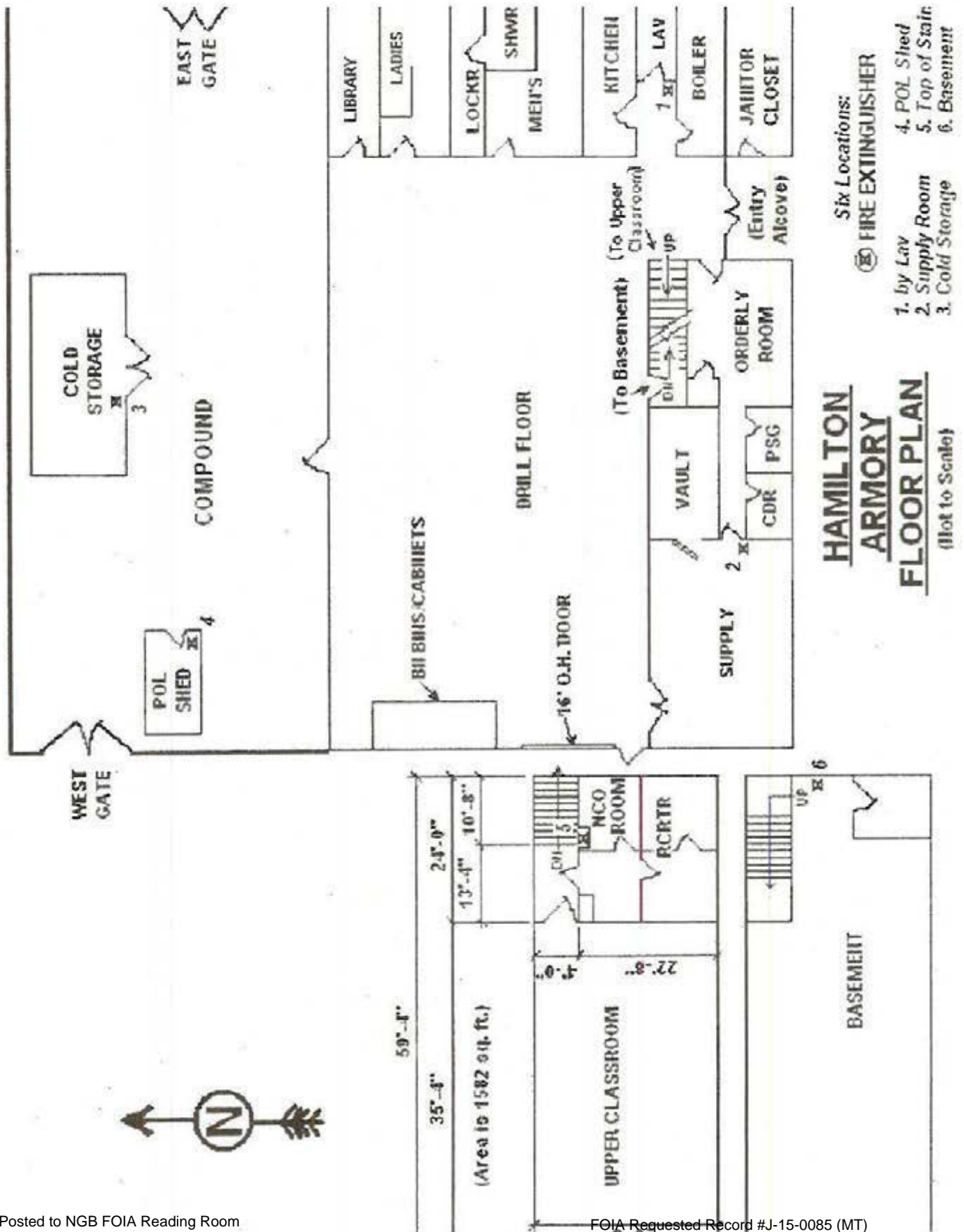


**Photo 22:** Bulk asbestos sample 81513-HMLTIARM-Bulk 3 and Bulk 4 collected from ceiling in the supply closet (labeled LAV). Bulk 3 acoustic material - Bulk 4 transite board.

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**HAMILTON, MONTANA**  
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**Photo 23:** Bulk paint chip sample 81513-HMLTIARM-Bulk 5 collected from handrail to the basement.





**IAQ MEASUREMENTS  
HAMILTON ARMORY / IFR  
HAMILTON, MONTANA  
AUGUST 15, 2013**

Location	CO <sub>2</sub> max permissible concentration 920 ppm	Temperature permissible range 68 – 75°F	Relative Humidity permissible range 30-60%
Outside Control	220	65.0	44.0
Janitor Closet	333	70.0	46.0
Boiler Room	373	70.0	43.5
Supply Closet (Lav)	329	70.4	42.6
Kitchen	295	69.5	43.4
Men's Room	367	68.9	47.0
Locker Room	296	69.7	46.9
Women's Room	427	70.0	47.8
Library	319	70.9	43.4
Drill Floor	245	71.0	40.8
Orderly Room	224	72.8	39.1
PSG Office	261	72.8	40.3
CDR Office	242	72.6	41.0
Supply Room	315	72.8	41.0
Classroom	243	72.4	39.6
Recruiter Office Primary	302	71.9	39.9
Recruiter Office Secondary	340	70.1	41.3
Converted Indoor Firing Range	251	70.7	40.6

**Bold** = Outside of permissible range

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

ppm = Parts per million

°F = Degrees Fahrenheit

**ILLUMINATION SURVEY  
HAMILTON ARMORY / IFR  
HAMILTON, MONTANA  
AUGUST 15, 2013**

Location	Light Measurement (FC)	Minimum lighting requirements (FC)
Janitor Closet	29.4	$\geq 10$
Boiler Room	210	$\geq 10$
Supply Closet (Labeled LAV)	224	$\geq 10$
Kitchen	183.4	$\geq 30$
Men's Room	61.2	$\geq 10$
Locker Room	27.2	$\geq 10$
Women's Room	44.0	$\geq 10$
Library	443	$\geq 50$
Drill Floor, northeast corner	57.3	$\geq 30$
Drill Floor, southeast corner	51.7	$\geq 30$
Drill Floor, northwest corner	61.5	$\geq 30$
Drill Floor, south center	65.7	$\geq 30$
Orderly Room	53.7	$\geq 50$
PSG Office	52.1	$\geq 50$
CDR Office	56.9	$\geq 50$
Supply Room	83.3	$\geq 30$
<b>Classroom</b>	<b>35</b>	<b><math>\geq 50</math></b>
Copy Room	30.7	$\geq 30$
Recruiter Office Primary	61.1	$\geq 50$
Recruiter Office Secondary	58.5	$\geq 50$
Converted Indoor Firing Range	75.9	$\geq 10$

**Bold** = Below Minimum Lighting Requirements  
FC = foot candle measurement

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

1. Date Prepared: *15 August 2013*
2. Names (and Company Name) of Personnel Conducting Industrial Hygiene Site Assistance Visit:
3. Facility Name and Brief Summary of Primary Activities Conducted at Facility:  
*HAMILTON ARMORY - VERTICAL CONSTRUCTION DETACHMENT*
4. Facility Address:  
*710 W. MAIN ST. HAMILTON MT*
5. Primary Unit Assigned to Facility (Ensure to capture and provide Unit Identification Code (UIC)): **Non-Responsive** *DET 3, 230<sup>th</sup> V. EN. CO.*
6. Co-Tenant Units Assigned or Working Within Facility (LIST ALL): *NONE*
7. Square Ft. Area of Facility:
8. Work Schedule: *M-F 0800-1700*
9. Number of work bays: *0*
10. Equipment Density and Type:
  - a. List Equipment Nomenclature Serviced or Maintained at Facility: *0*
  - b. List Total Number for Each Nomenclature Serviced or Maintained at Facility: *0*
11. Total Number of Personnel: *42*
12. No. of Admin. Personnel (Include Status – AGR, Fed. Tech., IDT, State or Contract Employee): *2 - AGR*
13. No. of Maintenance Personnel (Include Status – AGR, Fed. Tech., IDT, State or Contract Employee): *0*
14. Total Number of Personnel Enrolled in the Hearing Conservation Program: *0*
15. Total Number of Personnel Enrolled in the Respiratory Protection Program: *0*
16. Total Number of Personnel Enrolled in the Medical Surveillance Program: *0*

PAGE 1 of 2



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

18. Facility Commander:

406-384-5

**Non-Responsive**

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

19. Safety Officer:

406-384-5

**Non-Responsive**

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

20. Facility Telephone Number:

406-384-2311

013-1449.08 Hamilton IFR & Armory page 1 of 5

Photo Log / Notes

- #1 Garage at front of building
- #2 East side of building, exterior
- #3 Peeling paint on east side of building exterior <sup>Bulk 1</sup>
- #4 Front of building
- #5 Tank on display at armory
- #6 West side of building exterior
- #7 Missing motor cover, unsure if live, ~~per~~ access to wires
- #8 Tank Alert XT on exterior east side of building  
unknown purpose
- #9 Drill hall view to the west
- #10 Kitchen view to east
- #11 Suspected asbestos containing material in boiler room hot water pipe insulation <sup>Bulk 2</sup>
- #12 Bulk sample acoustic ceiling <sup>Bulk 3</sup> closet, labeled Lav + <sup>Bulk 4</sup> ACM <sup>trans</sup>
- #13 GFCI in closet, labeled Lav, tester indicates open ground outlet
- \* #14 Damaged outlet at west wall of drill floor
- \* #15 Flame cabinet #2 in supply room, doors are not sealing.
- #16 Supply room
- #17 CDR Office 1st ceiling tiles possible ACM in master's office to select sample, some Florida State Office
- \* #18 water damaged ceiling tiles in 1st office

- #11 Suspect ACM in closet of orderly room
- #20 Upstairs classroom, 1x1 ceiling tiles possible
- #21 Upstairs classroom 1x1 ceiling tiles possible ACM mount
- \* #22 Elec. outlet without cover IFR
- #23 Uncovered junction accessed through during converted IFR
- #24 Converted IFR - Locker room
- #25 POL Storage <sup>shed</sup> used for Flame cabinet ~~in tent~~  
Fuel stored on top of cabinet, cabinet does not self close, Fire extinguisher not mounted
- #26 POL Storage shed with tents
- #27 Pan of oil stored on top of Flame cabinet in POL shed, no secondary containment
- #28 Bsn North side of building
- #29 Storage shed "Cold Storage" tools interior
- #30 Fuel stored in POL in "Cold Storage" shed
- #31 Cold storage shed (right) & POL shed (left)
- #32 Point chip sample from hand ~~drill~~ Bulk #5 hallway stairs to IFR

## Lead samples

- #33 081513-HMLT ARM -01 Drill Floor Southeast corner
- " " -02 Drill Floor ~~corner~~ northeast corner
- 03 Drill Floor northeast corner
- 04 Drill Floor middle
- 05 Drill Floor "south west corner"
- 06 Drill Floor
- 07 Table top in workshop



page 3 of 3

Lead wire sample - IFR converted

#40 CBISB HMLT IFR-01 view of area to be sampled top of

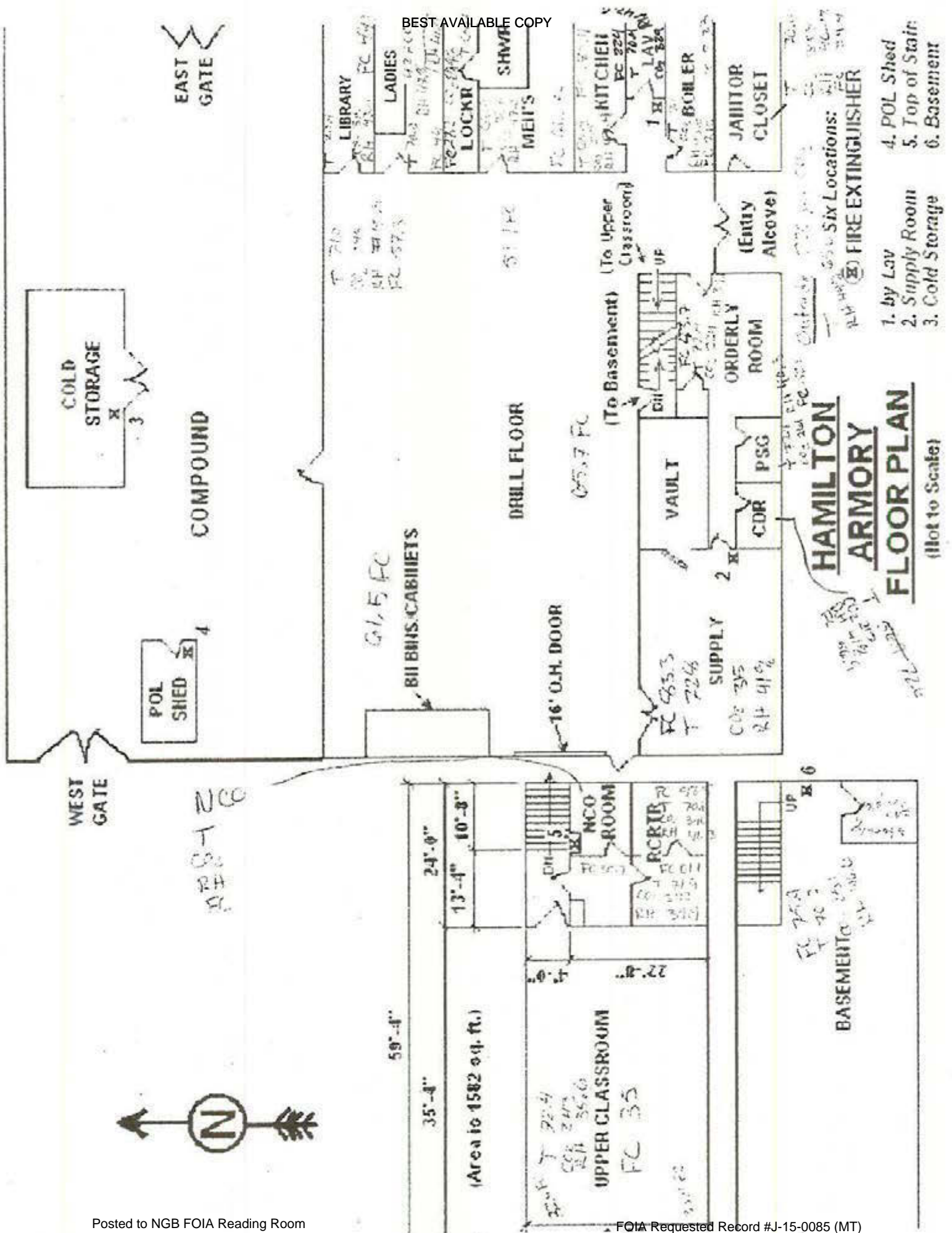
#41 " " view of sample surface

#42 " " - 02 Floor of IFR heading towards stairs

#43 " " - 03 Floor of IFR southeast corner

## Army National Guard IAQ Checklist

<b>General Info</b> – Name and address of facility with Zip code, POC's name, phone #, Military organization.	
<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.	Boiler room in basement of building
<b>HVAC system:</b> check - -drip pan (dampness, mold, etc.), filters, coils, dampers (bird screens)	Room units
<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)	✓
<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.	✓
<b>Ventilation</b> – survey of all general and local ventilation systems	
<b>Overall condition of HVAC system and maintenance plan.</b>	Boiler room
Obtained CO2, Temp, RH monitoring	
Provide <b>Photographs</b> of exterior / interior of each facility, each ventilation system any other areas or conditions pertinent to the survey	





**Tektronix****Certificate of Calibration**

7323038

Certificate Page 1 of 2

## Instrument Identification

Company ID: 607229

INDUSTRIAL HYGIENE SW

Non-Responsive

10510 SUPERFORTRESS AVE

SUITE C

MATHER, CA 95655

PO Number: CC

Non-Responsive

Instrument ID: 90480719

Model Number: TL-1

Manufacturer: KONICA MINOLTA

Serial Number: 90480719

Description: ILLUMINANCE METER

## Certificate Information

Reason For Service: CALIBRATION

Type of Cal: NORMAL

As Found Condition: IN TOLERANCE

As Left Condition: LEFT AS FOUND

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

Remarks:

Technician:

Non-Responsive

Cal Date: 02May2013

Cal Due Date: 02May2014

Interval: 12 MONTHS

Temperature: 23.0 C

Humidity: 47.0 %

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

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

Approved By:

Service Representative

Non-Responsive

## Calibration Standards

NIST Traceable#	Inst. ID#	Description	Manufacturer	Model	Cal Date	Date Due
1700254995	17-1001075	6 STEEL RULE	STARETT	C415R-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
1700285555	4083RC	MULTIMETER	FLUKE	8842A	08Aug2012	28Aug2013

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

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May, 2018

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FOIA Requested Record #J-15-0085 (MT)  
Released by National Guard Bureau  
Page 909 of 1990



MICRO PRECISION CALIBRATION  
22835 INDUSTRIAL PLACE  
GRASS VALLEY CA 95949  
(530) 288-1860

## Certificate of Calibration

Date: Nov 20, 2012

Non-Responsive

Cert No. 2008120221718

NETWORK ENVIRONMENTAL  
1141 SIBLEY STREET  
FOLSOM CA 95630

MPC Control #: CD3925  
Asset ID: 1307  
Gage Type: IAQ METER  
Manufacturer: TSI  
Model Number: 7545  
Size: N/A  
Temp/RH: 68.9°F / 35.6 %

Work Order #: SAC-7004499  
Purchase Order #: 013.IH1374.00  
Serial Number: T75450846008  
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 #
CO8185	MULTIFUNCTION PROCESS CALIBRATOR	720	1355148	FLUKE	Nov 5, 2013	2008120211043
J2270	LASER PARTICLE COUNTER	200L-1-115-1	90068761A	MET ONE	Apr 30, 2013	2008120175502

### Procedures Used in this Event

Procedure Name	Description
PARTICLE COUNTER	PARTICLE COUNTERS
35519-045 VWR TEMP-HUM	INSTRUCTIONS

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 G&D 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.



**TABLE 1**  
**LEAD WIPE SAMPLE RESULTS**  
**HAMILTON ARMORY / IFR**  
**HAMILTON, MT**  
**AUGUST 15, 2013**

Sample Number	Sample Area	Sample Location	Results ( $\mu\text{g}/\text{ft}^2$ )	ARNG/HUD Standard ( $\mu\text{g}/\text{ft}^2$ )
081513-HMLTARM-01	Drill Floor	Floor, southeast corner	10	$\leq 40$
081513-HMLTARM-02	Drill Floor	Floor, northeast corner	11	$\leq 40$
081513-HMLTARM-03	Drill Floor	Floor, northwest corner	7.6	$\leq 40$
081513-HMLTARM-04	Drill Floor	Floor, center	9.5	$\leq 40$
081513-HMLTARM-05	Drill Floor	Floor southwest corner	24	$\leq 40$
081513-HMLTARM-06	Vault	Floor	120	$< 200$
081513-HMLTARM-07	Classroom	Tabletop	$< 1.3$	$\leq 40$
081513-HMLTIFR-01	Converted IFR	Top of locker	2.5	$\leq 40$
081513-HMLTIFR-02	Converted IFR	Floor, adjacent to stairs	68	$\leq 40$
081513-HMLTIFR-03	Converted IFR	Floor, southwest corner	44	$\leq 40$

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

ARNG = Army National Guard

HUD = US Department of Housing and Urban Development

**Bold** = Above ARNG Standard limit

**TABLE 2**  
**PAINT CHIP SAMPLING**

Sample Number	Sample Location/Description	Results (%) of Lead	EPA/HUD Standard
081513-HMLTARM-Bulk 1	East side of the building, exterior	0.0040%	$\leq 0.5\%$
081513-HMLTARM-Bulk 5	Handrail to the basement	0.087%	$\leq 0.5\%$

EPA = Environmental Protection Agency

HUD = The US Department of Housing and Urban Development



**TABLE 3**  
**ASBESTOS SAMPLING**  
**HAMILTON ARMORY**  
**HAMILTON, MT**  
**AUGUST 15, 2013**

Sample Number	Sample Area	Sample Location	Analyte	Results (%) of Asbestos
081513-HMLTARM-Bulk 2	Boiler Room	Water heater pipe insulation	<i>Crysotile</i>	ND
			<i>Amosite</i>	ND
			<i>Crocidolite</i>	ND
			<i>Actinolite/Tremolite</i>	ND
			<i>Anthophyllite</i>	ND
081513-HMLTARM-Bulk 3	Supply Closet (Labeled LAV)	Acoustic ceiling material	<i>Crysotile</i>	3-5%
			<i>Amosite</i>	ND
			<i>Crocidolite</i>	ND
			<i>Actinolite/Tremolite</i>	ND
			<i>Anthophyllite</i>	ND
081513-HMLTARM-Bulk 4	Supply Closet (Labeled LAV)	Transite board	<i>Crysotile</i>	10-20%
			<i>Amosite</i>	ND
			<i>Crocidolite</i>	ND
			<i>Actinolite/Tremolite</i>	ND
			<i>Anthophyllite</i>	ND

ND = not detected, at or above the analytical detection limit

**Bold** = indicates building material is asbestos-containing (ACM)



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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: 34-1323169

Client Project ID: 013.IH1449.08/Hamilton  
Armory

Purchase Order: 013.IH1449.08

Project Manager: Non-Responsive

## Analytical Results

Sample ID: 081513-HMLTARM-01	Media: Ghost Wipe	Collected: 08/15/2013
Lab ID: 1323169001	Sampling Location: Hamilton Armory & IF	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	10	10 6.3

Sample ID: 081513-HMLTARM-02	Media: Ghost Wipe	Collected: 08/15/2013
Lab ID: 1323169002	Sampling Location: Hamilton Armory & IF	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	11	11 6.3

Sample ID: 081513-HMLTARM-03	Media: Ghost Wipe	Collected: 08/15/2013
Lab ID: 1323169003	Sampling Location: Hamilton Armory & IF	Received: 08/19/2013
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 1 ft <sup>2</sup>	Prepared: 08/20/2013
		Analyzed: 08/23/2013
Analyte	ug/sample	ug/ft <sup>2</sup> RL (ug/sample)
Lead	7.6	7.6 1.3

Sample ID: 081513-HMLTARM-04	Media: Ghost Wipe	Collected: 08/15/2013
Lab ID: 1323169004	Sampling Location: Hamilton Armory & IF	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	9.5	9.5 6.3

ADDRESS 960 West LeVoy Drive, Salt Lake City, Utah, 84123 USA PHONE +1 801 265 7700 FAX +1 801 268 9992  
ALS GROUP, INC. Part of the ALS Group An ALS Limited Company

Environmental

www.alsglobal.com

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## ANALYTICAL REPORT

Workorder: **34-1323169**  
Client Project ID: 013.IH1449.08/Hamilton  
Armory  
Purchase Order: 013.IH1449.08  
Project Manager: **Non Responsive**

## Analytical Results

Sample ID: <b>081513-HMLTARM-05</b>	Media: Ghost Wipe	Collected: 08/15/2013
Lab ID: 1323169005	Sampling Location: Hamilton Armory & IF	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	24	24 6.3

Sample ID: <b>081513-HMLTARM-06</b>	Media: Ghost Wipe	Collected: 08/15/2013
Lab ID: 1323169006	Sampling Location: Hamilton Armory & IF	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	120	120 6.3

Sample ID: <b>081513-HMLTARM-07</b>	Media: Ghost Wipe	Collected: 08/15/2013
Lab ID: 1323169007	Sampling Location: Hamilton Armory & IF	Received: 08/19/2013
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 1 ft <sup>2</sup>	Prepared: 08/20/2013 Analyzed: 08/23/2013
Analyte	ug/sample	ug/ft <sup>2</sup> RL (ug/sample)
Lead	<1.3	<1.3 1.3

Sample ID: <b>081513-HMLTIFR-01</b>	Media: Ghost Wipe	Collected: 08/15/2013
Lab ID: 1323169008	Sampling Location: Hamilton Armory & IF	Received: 08/19/2013
Method: NIOSH 7300 Mod.	Sampling Parameter: Area 1 ft <sup>2</sup>	Prepared: 08/20/2013 Analyzed: 08/23/2013
Analyte	ug/sample	ug/ft <sup>2</sup> RL (ug/sample)
Lead	2.5	2.5 1.3

Sample ID: <b>081513-HMLTIFR-02</b>	Media: Ghost Wipe	Collected: 08/15/2013
Lab ID: 1323169009	Sampling Location: Hamilton Armory & IF	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	68	68 6.3





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## ANALYTICAL REPORT

Workorder: 34-1323169

Client Project ID: 013.IH1449.08/Hamilton  
Armory

Purchase Order: 013.IH1449.08

Project Manager: Non-Responsive

## Analytical Results

Sample ID: 081513-HMLTARM-Bulk 3	Media: Bulk	Collected: 08/15/2013
Lab ID: 1323169016	Sampling Location: Hamilton Armory & IF	Received: 08/19/2013
Method: NIOSH 9002		Analyzed: 08/21/2013
Analyte	%	RL (%)
Chrysotile	3-<5	1.0
Amosite	ND	1.0
Crocidolite	ND	1.0
Actinolite/Tremolite	ND	1.0
Anthophyllite	ND	1.0

Sample ID: 081513-HMLTARM-Bulk 4	Media: Bulk	Collected: 08/15/2013
Lab ID: 1323169017	Sampling Location: Hamilton Armory & IF	Received: 08/19/2013
Method: NIOSH 9002		Analyzed: 08/21/2013
Analyte	%	RL (%)
Chrysotile	10-<20	1.0
Amosite	ND	1.0
Crocidolite	ND	1.0
Actinolite/Tremolite	ND	1.0
Anthophyllite	ND	1.0

Sample ID: 081513-HMLTARM-Bulk 5	Media: Paint Chip	Collected: 08/15/2013
Lab ID: 1323169018	Sampling Location: Hamilton Armory & IF	Received: 08/19/2013
Method: NIOSH 7300 Mod.	Sampling Parameter: Weight 0.0524 grams	Prepared: 08/20/2013 Analyzed: 08/21/2013
Analyte	%	RL (%)
Lead	0.087	0.0024

## Comments

Sample: 1323169001

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: 1323169002

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: 1323169004

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: 1323169005

Lead was reported from 5X 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: 34-1323169  
Client Project ID: 013.IH1449.08/Hamilton  
Armory  
Purchase Order: 013.IH1449.08  
Project Manager: Non-Responsive

### Comments

**Sample: 1323169006**

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: 1323169009**

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: 1323169010**

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

### Report Authorization

Method	Analyst	Peer Review
NIOSH 7300 Mod.	Non-Responsive	Non-Responsive
NIOSH 7300 Mod.		
NIOSH 9002		

### Laboratory Contact Information

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

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





## ANALYTICAL REPORT

Workorder: 34-1323169  
Client Project ID: 013.IH1449.08/Hamilton  
Armory  
Purchase Order: 013.IH1449.08  
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.  
\*\* 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.





1323169



## ANALYTICAL REQUEST FORM

1383169

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

RESULTS REQUIRED BY \_\_\_\_\_

DATE \_\_\_\_\_

CONTACT ALS SALT LAKE PRIOR TO SENDING SAMPLES

2. Date 8/15/13 Purchase Order No. 013.IH449.083. Company Name NESAddress 1141 Sibley Street  
Folsom CA 95630

Person to Call \_\_\_\_\_

Telephone \_\_\_\_\_

Fax Telephone \_\_\_\_\_

E-mail Address \_\_\_\_\_

Billing Address \_\_\_\_\_

4. Quote No. \_\_\_\_\_

ALS Project Manager \_\_\_\_\_

5. Sample Collection

Sampling Site Hamilton Armory & IFR

Industrial Process \_\_\_\_\_

Date of Collection 8/15/13

Time Collected \_\_\_\_\_

Date of Shipment 8/15/13

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

6. How did you first learn about ALS? \_\_\_\_\_

**Non-Responsive****Non-Responsive**

## 7. REQUEST FOR ANALYSES

Laboratory Use Only	Client Sample Number	Matrix*	Sample Volume	ANALYSES REQUESTED - Use method number if known	Units**
	081513-HMLTARM	Ghost wipe	1 ft <sup>2</sup>	NIOSH 7300 - Lead	ug/si <sup>3</sup>
	01' through 07'				
	081513-HMLTIFR				
	01' through 03'				
	081513-HMLTARM				
	Blank				
	081513-HMLTIFR				
	Blank				
	081513-HMLTARM	Paint chip	~2 in <sup>2</sup>	Lead	% by weight
	Bulk 1				
	" Bulk 2	Insulation		Asbestos- NIOSH 9002	%

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

\*\* 1. ug/sample 2. mg/m<sup>3</sup> 3. ppm 4. % 5. ug/m<sup>3</sup> 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

**Non-Responsive**

Relinquished by \_\_\_\_\_

Date/Time 8/15/13

Received by \_\_\_\_\_

Date/Time 08/19/13

1990

Relinquished by \_\_\_\_\_

Date/Time \_\_\_\_\_

Received by \_\_\_\_\_

Date/Time \_\_\_\_\_

960 West LeVoy Drive / Salt Lake City, UT 84123

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

ALS Environmental

**Non-Responsive**

## ANALYTICAL REQUEST FORM



Environmental



REGULAR Status



RUSH Status Requested - ADDITIONAL CHARGE

RESULTS REQUIRED BY

DATE

CONTACT ALS PRIOR TO SENDING SAMPLES

2. Date: 8/15/13 Purchase Order No. 013-TH 1449.08

4. Quote No. \_\_\_\_\_

3. Company Name: NES, Inc.ALS Project Manager Non-ResponsiveAddress: 1141 Sibley Street

5. Sample Collection \_\_\_\_\_

Folsom, CA. 95630

Person to Contact \_\_\_\_\_

Industrial Process \_\_\_\_\_

Telephone: \_\_\_\_\_

Date of Collection: 8/15/13

Fax Telephone: \_\_\_\_\_

Time Collected \_\_\_\_\_

E-mail Address: \_\_\_\_\_

Date of Shipment 8/15/13

Billing Address (if \_\_\_\_\_

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

SAME

## 8. REQUEST FOR ANALYSES

Laboratory Use Only	Client Sample Number	Matrix*	Sample Volume	ANALYSES REQUESTED - Use method number if known	Units**
	081513-HMLTARM-Bulk 3	Bulk		Asbestos 9002	% 16
	081513-HMLTARM-Bulk 4	Bulk		Asbestos 9002	% 16
	081513-HMLTARM-Bulk 5	Bulk		NIOSH 7300 Lead	ug/l 10

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

\*\* 1. mg/sample 2. mg/m<sup>3</sup> 3. ppm 4. % 5. \_\_\_\_\_ (other) Please indicate one or more units in the column entitled Units\*\*Comments: Please report results in ug/l

Possible Contaminant \_\_\_\_\_

Relinquished by \_\_\_\_\_

Received by \_\_\_\_\_

Relinquished by \_\_\_\_\_

Received by \_\_\_\_\_

Date/Time

Date/Time

Date/Time

4388 Glendale-Milford Road, Cincinnati, OH 45242

800-280-8071 or 800-458-1493 / FAX: 775-213-8852

ALS ENVIRONMENTAL - Attn: Stella Hanis





# Industrial Hygiene Southwest

## Violation Inventory Log

### LOG OF SCHEDULE OF CORRECTIVE ACTION - COMPLIANCE WITH SAFETY AND HEALTH STANDARDS Hamilton Armory & IFR - Hamilton, MT

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
MTHMLTARM- 08152013-4.5.1	Electrical meter box has exposed wiring	Outdoors, west side of building	3	Install a cover on the electrical meter box to prevent access to exposed wiring or hire an electrical contractor to remove the box if it is dead & not to be used.					29 CFR 1910.303(b)(1); 1910.303(b)(7)(i);
MTHMLTARM- 08152013-4.5.2	Damaged electrical outlet	West wall of Drill Floor	4	Repair or replace the damaged electrical outlet.					29 CFR 1910.303(b)(1)
MTHMLTARM- 08152013-4.5.3	Flammable materials storage locker is not self-closing	Supply Room & POL Storage	4	Repair the storage locker to ensure the doors are self- closing.					29 CFR 1910.106(d)(3)(i); Uniform Fire Code 79.201
MTHMLTARM- 08152013-4.5.4	Open container (rubber tray) of used oil	POL Storage Shed	4	Used oil should be stored in sealed containers with proper labels.					29 CFR 1910.106(d)(3)(i) & 40 CFR 299.22(a)
MTHMLTARM- 08152013-4.5.5	GFCI outlet with an open neutral	Closet (Lav)	4	Repair or replace the GFCI outlet.					29 CFR 1910.303(b)(1)





# Industrial Hygiene Southwest

## Violation Inventory Log

### LOG OF SCHEDULE OF CORRECTIVE ACTION - COMPLIANCE WITH SAFETY AND HEALTH STANDARDS Hamilton Armory & IFR - Hamilton, MT

BEST AVAILABLE COPY

CONTROL NUMBER	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/NCOIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
MTHMLTARM- 08152013-4.5.6	Electrical outlet is missing a cover	Floor of converted IFR	3	Install covers on all electrical outlets.					29 CFR 1910.303(b)(1); 1910.303(b)(7)(i);
MTHMLTARM- 08152013-4.5.7	Electrical junction box is missing a cover	Converted IFR	3	Install covers on all junction boxes.					29 CFR 1910.303(b)(1); 1910.303(b)(7)(i);
MTHMLTARM- 08152013-5.1	Lead concentrations exceed established criteria	Converted IFR	2	Prohibit use of the converted IFR (locker room) until the area is cleaned of lead below ARNG thresholds. Clean the locker in accordance with the Army SOP for lead cleanup. Have follow-up testing conducted to meet acceptable concentrations.					29 CFR 1910.1025 (h)(1)
MTHMLTARM- 08152013-5.3	Asbestos containing materials are present. The asbestos containing material in the closet (LAV) shows signs of disturbance.	Armory, Closet (Lav)	3	Do not allow employees to disturb materials which contain or are suspected to contain asbestos. Include asbestos in the Hazard Communication Program. Post warning signs. Ensure employees are aware asbestos is present in the building. Consult with a certified asbestos abatement contractor to have damaged asbestos removed or stabilized.					General Duty Clause 5(a)(1); 29 CFR 1910.1001; 29 CFR 1926.1101

## 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 Hamilton Armory and IFR. The paragraphs are numbered to correspond to the sections where first noted. (i.e., N.4.11 describes the following: the N is Conclusions & Recommendations and the 4.7 corresponds back to Section 4 – Observations and Recommendations; Item 11 – Other Safety Related Observations).
- N4.1 Water Intrusion** – Conduct periodic inspections of the facility for active water intrusion. If leaks are detected, repair them to prevent potential mold issues.
- N4.5.1 Exposed Electrical Components** – Install a cover on the electrical meter box, located to the west of the Armory's exterior, to prevent access to exposed wiring.
- N4.5.2 Damaged Electrical Outlet** – Repair or replace the damaged electrical outlet on the west wall of the drill floor.
- N4.5.3 Flammable Storage Cabinet** – Repair the storage locker, in the supply room, to ensure the doors are self-closing.
- N4.5.4 Used Oil Storage** – Store all used oil in sealed containers with proper labeling ("Used Oil") on the container.
- N4.5.5 GFCI Outlet** – Repair or replace the GFCI outlet in the closet labeled LAV.
- N4.5.6 Electrical Outlet** – Install a covers on electrical outlet located on the floor of the converted IFR (locker room).
- N4.5.7 Electrical Box Cover** – Install a cover on the junction box in the converted IFR (locker room). This junction box can be accessed through the ventilation duct.
- N5.1 Lead Sampling** – Prohibit the use of the converted IFR (Locker Room) until the area is cleaned of lead below the ARNG thresholds. Clean the locker room in accordance with the Army SOP for lead cleanup. Have follow-up testing conducted to meet acceptable thresholds.
- N5.3 Asbestos Containing Materials (ACM)** – Consult with a certified asbestos contractor to have damaged asbestos removed or stabilized. Do not allow employees to disturb building materials which contain or are suspected to contain asbestos. Include asbestos in the facility's Hazard Communication Program and training. Post warning signs on ACM. Ensure employees are aware that asbestos is present within the facility.
- N5.5 Illumination** – Increase lighting in the classroom to provide the necessary illumination for activities performed. 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.



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				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
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



FY 13 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				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				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
Number of design review packages which required IH evaluation and recommendations applicable to occupational health concerns		953-02-20				IHT

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

1. Date Prepared: **15 August 2013**
2. Names (and Company Name) of Personnel Conducting Industrial Hygiene Site Assistance Visit: **Non-Responsive** CIH and **Non-Responsive** associate of NES, Inc.
3. Facility Name and Brief Summary of Primary Activities Conducted at Facility:  
**Hamilton Armory – Vertical Construction Detachment**
4. Facility Address: **910 W. Main Street, Hamilton, Montana**
5. Primary Unit Assigned to Facility (Ensure to capture and provide Unit Identification Code (UIC)): **Non-Responsive** Det 3, 230<sup>th</sup> V En. Co.
6. Co-Tenant Units Assigned or Working Within Facility (LIST ALL): **None**
7. Square Ft. Area of Facility: **unknown**
8. Work Schedule: **Mon-Fri 0800 - 1700**
9. Number of work bays: **None**
10. Equipment Density and Type:
  - a. List Equipment Nomenclature Serviced or Maintained at Facility: **None**
  - b. List Total Number for Each Nomenclature Serviced or Maintained at Facility: **None**
11. Total Number of Personnel: **42**
12. No. of Admin. Personnel (Include Status – AGR, Fed. Tech., IDT, State or Contract Employee): **2- AGR**
13. No. of Maintenance Personnel (Include Status – AGR, Fed. Tech., IDT, State or Contract Employee): **None**
14. Total Number of Personnel Enrolled in the Hearing Conservation Program: **None**
15. Total Number of Personnel Enrolled in the Respiratory Protection Program: **None**
16. Total Number of Personnel Enrolled in the Medical Surveillance Program: **None**

PAGE 1 of 2

17. Total Number of Personnel Enrolled in the Vision Program: **None**

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

a. Email address, Commercial Telephone Number and Unit Assigned to:  
**Non-Responsive** (406) 324-5028 - Belgrade

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

a. Email address, Commercial Telephone Number and Unit Assigned to:  
**Non-Responsive** (406) 324-5701

20. Facility Telephone Number: (406) 363-2311



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

Five lead wipe samples collected from drill floor (take samples from dusty horizontal floor surfaces)	Yes, samples 081513-HMLTARM-01 to 05
Are any weapons cleaned in the facility, if yes where are they cleaned?	Yes, weapons are cleaned in the Supply Room
Additional lead wipe samples taken from 25% of the rest of the building	Yes, samples 081513-HMLTARM-06 to 07 collected from the Vault and Classroom
Is there a converted indoor firing range? If so collect additional wipe samples IAW the SOW.	Yes, the IFR was converted into a locker room. Samples 081513-HMLTIFR-01 to 03 were collected.
Is there any peeling paint? Take bulk sample if able.	Yes, peeling paint was identified on the exterior east wall of the building and on the handrail to the converted IFR.
Are there any signs of water damage or mold?	Water traces were observed beneath the windows along the north wall of the building. No signs of mold growth were observed.
Any suspected ACM? Where and what condition is it in. Bulk sample if able.	Yes, bulk samples were collected from the boiler room pipe insulation, closet ceiling tile, and the closet transite board.
Quality of housekeeping	Good
HVAC maintenance plan in place?	Facility is contacted if there are issues
Overall condition of HVAC system	Room units are used, no central system
Obtained CO2, Temp, RH monitoring	Yes, see Appendix E
HAZMAT inventory on hand (make copies for the report), MSDS available for all materials.	A chemical inventory is posted in the janitor's closet. MSDS available to personnel
HAZMAT storage, Condition of lockers, if outside storage building is used is it ventilated and does it meet OSHA standards.	Hazardous materials are stored in the supply room, outdoor POL storage shed and the "cold storage" shed.

<b>Fire alarm in working condition - -not usually in place in older armories</b>	<b>Yes, an alarm was present in the classroom</b>
<b>Fire extinguishers in place and properly identified and mounted</b>	<b>Yes</b>
<b>Evidence of monthly fire extinguisher inspections</b>	<b>Yes, last inspected July 2, 2013</b>
<b>Annual fire extinguisher inspections tags current</b>	<b>Yes, next inspection is due February, 2014</b>
<b>Are eye wash stations available in areas where hazardous materials are used and are they inspected weekly (inspections must be documented)</b>	<b>N/A</b>
<b>Egress routes accessible and properly marked - -noted on <u>Fire Evacuation Plan</u></b>	<b>Yes</b>
<b>Training programs in place; Hazcom, Respiratory Protection, Confined Spaces, Hearing conservation, PPE (if applicable)</b>	<b>Yes, the listed programs are maintained onsite</b>
<b>Any Photo labs</b>	<b>No</b>
<b>Any hazardous noise sources</b>	<b>No</b>
<b>Light levels checked throughout building</b>	<b>Yes, see Appendix E</b>
<b>Breaker panels properly labeled with no exposed wiring</b>	<b>Yes</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. 2 fulltime military personnel, 42 in unit guard members onsite once per month for drill</b> <b>2. Vertical Engineers</b>
<b>Any civilian activities in armory (cub scouts, classes, day care, parties etc)</b>	<b>None</b>
<b>Obtain two lead air samples</b>	<b>On IHSW Request Only</b>

Evaluate Kitchen Stove Hood Flow if Present IAW NFPA Standard 96.	None present
Collect Source Noise Measurements of Kitchen Appliances and Document Using DD 2214	None present
Conduct a safety walkthrough of entire facility document any safety deficiencies found.	Completed, see report for findings
Take photos of outside of building, all sample points and any pertinent hazards or concerns.	See Appendix C for photo log
Name of Armory, POC, phone #, address and organizations in Armory  (Add Checklist to Report)	Hamilton Armory & IFR <b>Non-Responsive</b> 910 West Main Street, Hamilton, MT Detachment 3 of the 230 <sup>th</sup> Vertical Engineers Company





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** 6-353-2360.

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 [REDACTED] **Non-Responsive**  
854-1490/ (916) 812-5838 or [REDACTED] **Non-Responsive**

**Non-Responsive**

NGB, IHSW, CIV  
Industrial Hygiene

CF:  
FMO  
OHN  
SSO

## ***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.

- 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.

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**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.

From:  
To:  
Cc:  
Subject:  
Date:  
Attachments:

**Non-Responsive**

Good afternoon

**Non-Responsive**

This email is a follow-up to the phone call regarding the IHSAV conducted Thursday August 15, 2013 at the Hamilton Armory and IFR in Montana. A pertinent hazard was observed in regards to access to electrical conductors, with the possibility for electrical shock.

The hazard was observed at the west side of the Armory's exterior. An electrical meter had been removed from an electrical panel. The area is not secured/fenced, and children were observed passing by the panel on their way to and from the park located to the north of the armory.

**Non-Responsive** was notified of the hazard during the IHSAV. **Non-Responsive** indicated she thought the electricity had been disconnected to that panel, however, we were unable to confirm. A photo of the hazard is attached for your review.

Please let me know if you have any questions or need additional information.

Thanks,

**Non-Responsive**

NES, Inc.  
1141 Sibley Street  
Folsom, CA 95630  
(916) 353-2360 or (800) 637-2384 extension 13  
Fax (916) 353-2375

Please visit our website at [www.nesglobal.net](http://www.nesglobal.net) for more information about our Industrial Hygiene & Environmental Compliance Consulting Services, our Occupational Health & Safety Training and the complete list of products and training we offer.

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# 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

### Harlowton Armory

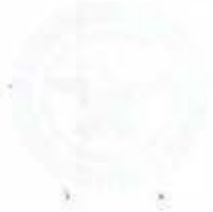
9899 HWY 12  
Harlowton, MT 59036

04 Oct 2012

10510 Superfortress Avenue, Suite C, Mather, CA 95655

(916) 854-1494





DEPARTMENT OF THE ARMY  
HEADQUARTERS  
WASHINGTON, D.C. 20315-6000  
ATTENTION: GPOC  
MATHER, CALIFORNIA

---

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

---

10510 Superfortress Avenue, Suite C, Mather, CA 95655

(916) 854-1494



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

ARNG-CSG-IHSW

23 April 2013

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

FOR Commander Harlowton Armory, 9899 HWY 12, Harlowton, MT 59036

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for the Harlowton  
Armory, 9899 HWY 12, Harlowton, MT 59036

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 Harlowton Armory at 9899 HWY 12, Harlowton, MT on 04 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. 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.3.4) RAC 3)

**ARNG-CSG-IHSW**

**SUBJECT:** Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for the Harlowton Armory, 9899 HWY 12, Harlowton, Montana conducted on 04 October 2012.

b. Housekeeping practices should be improved to help prevent migration of lead dust. Personnel should clean-up after themselves during each episode of weapons cleaning. Utilize the Armory Clean-up SOP included in this report to help improve housekeeping practices. (para. 4.11) (RAC 3)

c. The exhaust hood for the kitchen stove should be serviced and/or repaired to increase the airflow velocity. The fire suppression above the stove should receive an annual maintenance inspection by a qualified technician. (para. 4.1 & 4.11) (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.



ARNG-CSG-IHSW

**SUBJECT:** Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for the Harlowton Armory, 9899 HWY 12, Harlowton, Montana conducted on 04 October 2012.

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 undersigned at (916) 854-1491 or via email at

**Non-Responsive**



**Non-Responsive**

NGB, IHSW, CIV  
Industrial Hygiene



**Industrial Hygiene Southwest**  
**Violation Inventory Log**  
**LOG OF SCHEDULE OF CORRECTIVE ACTION - COMPLIANCE WITH SAFETY AND HEALTH STANDARDS**  
**Harlowton Armory, Montana**

CONTROL NUMBER	HAZARD DESCRIPTION	SITE	RAC	HAZARD COUNTERMEASURE	SUSPENSE DATE	ACTION OIC/NCOIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
<input type="checkbox"/> CLOSED									
MTHA-103112-3.4	No asbestos O/M plan or asbestos building survey was available.	Facility	3	Create an asbestos Operations & Maintenance Plan and have an asbestos building survey performed by a qualified MT asbestos building inspector.					29 CFR 1926.1110; TB MED 513
MTHA-103112-4.1	Lead dust on horizontal surfaces	Drill floor	3	Housekeeping practices need to be improved. Clean horizontal surfaces in these areas using the Armory Clean-up SOP included.					29 CFR 1910.1025; NG PAM 420-15
MTHA-103112-4.1	The canopy exhaust hood over the kitchen stove is insufficient.	Kitchen	4	Have the canopy exhaust hood serviced or repaired to increase air flow velocity.					TM 5-810-1
MTHA-103112-4.11	The fire suppression system above the stove has no annual inspection tag	Kitchen	4	Ensure kitchen stove fire suppression system receives an annual maintenance inspection by a qualified technician.					29 CFR 1910.160(b)(6)

## ***ARMORY***

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

#### **Materials Needed:**

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

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

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



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

#### **Post-Cleanup Precautionary Measures:**

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

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

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

#### **Initial Armory Cleanup:**

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

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

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

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

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

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

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

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



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

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

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

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

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



INDUSTRIAL HYGIENE SITE ASSISTANCE VISIT (IHSAY)

HARLOWTON ARMORY  
9899 HIGHWAY 12  
HARLOWTON, MONTANA 59036

October 31, 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.IH1374.69

*Prepared by:*

**Non-Responsive**

*Senior Industrial Hygienist*

*Reviewed by:*

**Non-Responsive**

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## EXECUTIVE SUMMARY

On October 31, 2012, **Non-Responsive** Industrial Hygienist of NES, Inc. (NES) conducted an Industrial Hygiene Site Assistance Visit (IHSAB) at the Harlowton Armory located at 9899 Highway 12, in Harlowton, Montana. The primary point of contact for information gathered during this survey was **Non-Responsive** may be reached by phone at (406) 632-4612 or by email at **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: **Non-Responsive** went above and beyond expectations to help NES complete the IHSAB. **Non-Responsive** completed the requested site visit documentation ahead of the IHSAB, which made for a more streamlined visit.

## 1.0 INTRODUCTION

On October 31, 2012, [Non-Responsive] Industrial Hygienist of NES, Inc. (NES) conducted an Industrial Hygiene Site Assistance Visit (IHSAV) at the Harlowton Armory located at 9899 Highway 12, in Harlowton, Montana. The primary point of contact for information gathered during this survey was [Non-Responsive] may be reached by phone at (406) 632-4612 or by email at [Non-responsive]

### 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 to make recommendations for any corrective actions or follow-up work in order 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 Harlowton Armory was built in 1985. The facility is staffed with one full time active guard reserve member and 11 M-day soldiers. The Armory has offices used for administrative purposes and also contains a drill floor, locker room, supply room and kitchen. The Harlowton Armory does not employ civilian employees. Civilian functions are carried out in this Armory by the Cub Scouts, Highway Patrol, U.S. Department of Veterans Affairs (VA) and the 4-H club.



### **3.0 METHODS**

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

Metals wipe samples were collected on horizontal 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 the ceilings of the facility. 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. There was no water damage or suspect mold growth identified during the site visit.

#### **3.4 Asbestos Documentation**

An evaluation of asbestos documentation was performed. During the site visit, no asbestos building survey assessment or asbestos operations and maintenance plan documentation could be found.

#### **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, and relative humidity were measured throughout the Armory using a TSI Model 8551 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. See Appendix E for IAQ data.

### **3.6 Illumination Level Monitoring**

Illumination measurements were taken throughout the Harlowton 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 was current at the time of the IHS AV.

### **3.9 Exhaust Ventilation Survey**

There are two canopy style ventilation hoods located in the kitchen within the facility. Air velocity and flow measurements were measured using a TSI VelociCalc™, 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 ventilation data table results.

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

Sound-level measurements were made on kitchen appliances using a Quest Model 2900 Sound Level meter in the A weighted decibel (DBA) range, using a slow meter response. DD Forms 2214 are provided in Appendix O.

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

A safety walk-through evaluation of the Harlowton 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, inspection of ground fault circuit interrupter (GFCI) electrical outlet measurements, 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
Konica Minolta Illuminance Meter	TL-1	279029	May 2012
TSI IAQ-Calc™ Meter	8551	51380	November 2012
Quest Sound Level Meter	2900	CDF020012	March 2012
TSI VelociCalc™ Meter	8386A	54110581	March 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 Harlowton 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 nine 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 surface areas. The analytical results for the samples listed above, ranged from 9.1 to 77  $\mu\text{g}/\text{ft}^2$ . All of the samples collected from the drill floor exceed the 40  $\mu\text{g}/\text{ft}^2$  criterion, except the south-center drill floor sample.

Additional lead wipe sampling was taken from approximately 25% of the rest of the building. The four additional areas samples were collected from the following areas: the hallway floor next to the orderly room; the men's locker room floor; the west hallway floor; and the north hallway floor. The analytical results for the additional sample locations were below the established criteria.

Sample Number	Sample Area	Sample Location	Results ( $\mu\text{g}/\text{ft}^2$ )	ARNG Standard ( $\mu\text{g}/\text{ft}^2$ )
103112-AFCR-HAR-01	Drill Floor	Center-west, floor sample	52	$\leq 40$
103112-AFCR-HAR-02	Drill Floor	Northwest corner, floor sample	67	$\leq 40$
103112-AFCR-HAR-03	Drill Floor	Center, floor sample	77	$\leq 40$

103112-AFCR-HAR-04	Drill Floor	Northeast corner, floor sample	49	≤ 40
103112-AFCR-HAR-05	Drill Floor	South-center, floor sample	9.1	≤ 40
103112-AFCR-HAR-06	Converted IFR	Hallway by orderly room, floor sample	6.5	≤ 200
103112-AFCR-HAR-07	Converted IFR	Men's locker room, floor sample	4.5	≤ 40
103112-AFCR-HAR-08	Storage Room	West hallway, floor sample	9.4	≤ 200
103112-AFCR-HAR-09	IT Room	North hallway, floor sample	< 2.5	≤ 200
103112-AFCR-HAR-10	Blank Control Sample		< 2.5	NA

Please see Appendix I table 1 for a table of analytical results. The 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 inspection of the facility there were no areas of water damage or suspected mold growth identified in the facility.

#### 4.4 Asbestos Documentation

Asbestos documentation including an asbestos building survey or an asbestos operations and maintenance plan was not available for review on site. Suspected asbestos containing materials are present in the Harlowton Armory and include: 12" floor tiles; cove base mastic; and 2' x 4' ceiling tiles.

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

The central heating, ventilation, and air-conditioning (HVAC) system was free of damage and functioning properly. No HVAC maintenance or inspection documentation was found during the time of the IHSAV. SSG Huot indicated HVAC maintenance is performed by Facilities. The Harlowton facility utilizes a central HVAC system. All heating and cooling air is direct-ducted to the offices and the drill floor.



The average outdoor carbon dioxide concentration at the time of the survey was approximately 360 ppm; therefore, the maximum indoor CO<sub>2</sub> concentration recommended by the ASHRAE Standard would be 962 ppm. Carbon dioxide concentrations throughout the facility were below 962 ppm. The highest CO<sub>2</sub> concentration measured was 559 ppm in one of the offices.

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 67.8 to 70.0°F and relative humidity was between 30.2% and 35.3% 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 criterion, the lighting throughout the facility is adequate for tasks being performed. A table of IAQ results is provided in Appendix E which indicates illumination data in specific areas.

#### **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 Harlowton Armory along with their associated Material Safety Data Sheets (MSDSs) are maintained in a master binder located in the mechanical room. 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 the Armory's chemical inventories are provided in Appendix D.



#### 4.7.2 Flammable Storage Cabinets

There is one flammable storage cabinet containing hazardous material (HAZMAT) located in the northeast corner of the drill floor of the Armory. The flammable storage cabinet was inspected and no storage incompatibilities or leaking materials were found. The locker was in good condition and all doors were noted to close properly. Fire extinguishers were mounted on the wall of the drill floor.

#### 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:

Montana Army National Guard Safety SOP:

- Army Safety Programs AR-385 series
- Environmental Compliance SOP
- Hazardous Materials and Waste Management SOP
- Spill Prevention and Response
- In Shop Safety Training Certificate, Mary Huot

#### 4.9 Exhaust Ventilation Survey

Air velocity measurements were taken from two canopy style vent hoods in the kitchen. TM 5-810-1, prepared by Headquarters, Department of the Army, June 1991 has set a criteria of 50 (fpm) for open hood sections and 75 (fpm) for grease filter sections, measured at the horizontal hood opening. The vent hood over the stove had air velocity measurements ranging from 25-49.2 feet per minute (fpm) at the hood itself and, below the 50 fpm criterion. The exhaust hood over the sink area had air velocity measurements ranging from 127-188 fpm at the face of the hood.

#### 4.10 Sound-Level Measurements

Sound-level measurements were performed on kitchen appliances. The following lists the noise level measurements obtained during this visit:

Noise Source	Noise Level Measurement
Kitchen Appliances	64.2-66.7 dBA at operator ear level

DD Forms 2214 are provided in Appendix O.

#### 4.11 Safety Walk-Through

1. Housekeeping throughout the facility was good.
2. Fire extinguishers are strategically located in the hallway and throughout the drill floor.
3. Fire evacuation plan is prominently posted throughout the building. Egress routes are marked of the fire evacuation plan.
4. The fire suppression system in the kitchen did not have an annual inspection tag.
5. Electrical panels were in good condition and GFCI electrical outlets functioned properly when tested.
6. Ear plugs, a first aid kit, and a defibrillator unit were properly mounted and accessible on the wall in the hallway and the drill floor.

## 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. *NES* 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 IHSAV report was reviewed and approved by:

**Non-Responsive**

A

June 14, 2013

Date

Technical Assistance: For technical assistance regarding information found in this report or the performed survey, please contact **Non-Responsive** 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  
ARMORY, HARLOWTON  
HARLOWTON, MT  
OCTOBER 31, 2012**



**Photo 1: Exterior of the Harlowton Armory.**



**Photo 2: Fire extinguisher located inside the armory.**

**PHOTO LOG  
ARMORY, HARLOWTON  
HARLOWTON, MT  
OCTOBER 31, 2012**



**Photo 1: Exterior of the Harlowton Armory.**



**Photo 2: Fire extinguisher located inside the armory.**

**PHOTO LOG  
ARMORY, HARLOWTON  
HARLOWTON, MT  
OCTOBER 31, 2012**



**Photo 3: Flammable locker.**



**Photo 4: Exercise Room**



**PHOTO LOG  
ARMORY, HARLOWTON  
HARLOWTON, MT  
OCTOBER 31, 2012**

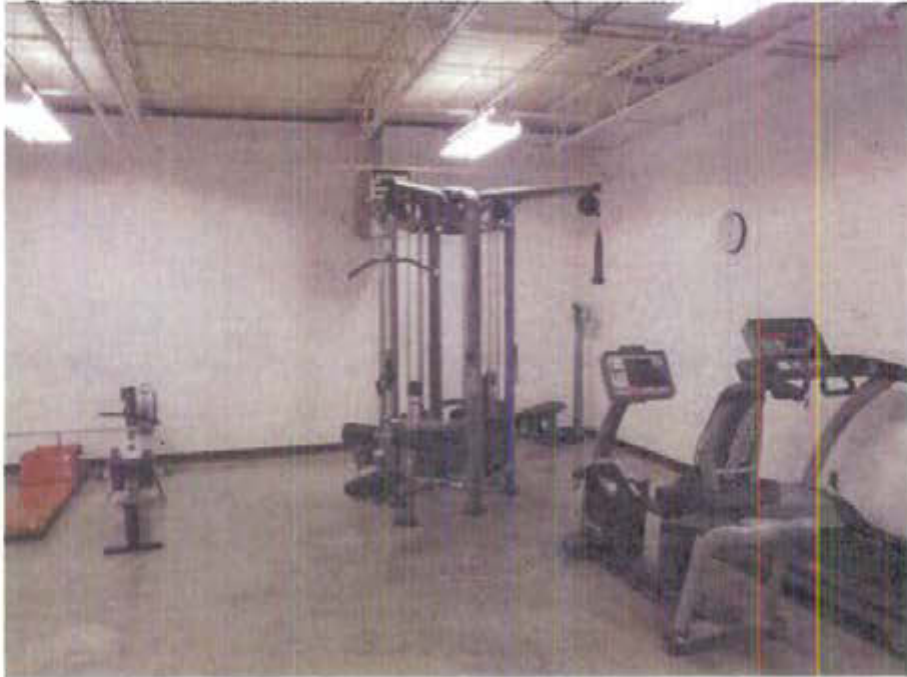


**Photo 5: Storage room.**



**Photo 6: Drill floor.**

**PHOTO LOG  
ARMORY, HARLOWTON  
HARLOWTON, MT  
OCTOBER 31, 2012**



**Photo 7: Gym room.**



**Photo 8: Lead wipe floor sample 103112-AFRC-Har-06 from hallway by orderly room.**

# Hazardous Materials Center

## Item Search

Print Inventory

Cancel

Harlowton Readiness Center / Det 1  
1063 SMC

Download to Excel

F01 - 2/2012

SLN	Product Name	NSN	Manufacturer	Description	MSDSID	Quantity	Unit of Issue	Shelf Life	HCC	Excess
1	Interior Acrylic Semi-gloss	8010	Columbia Paint			2	CN			
12	ENAMEL PAINT DK BLUE		COLUMBIA		12	1	CN		F2	
13	ENAMEL PAINT WHITE		COLUMBIA		13	1	CN		F2	
18	LATEX PAINT WHITE		ACE		18	1	CN			
198	guardfleet rc 15w-40	9150-01-421-1427	unimark oil co llc			6	qt			
2	Latex Enamel Undercoat	8010	Columbia Paint			1	cn			
21	FLOORING ADHESIVE		ACE		21	1	CN			
219	Motor Oil	9150015189471	safety-kleen corp		219	2	qt			
220	Gear lube	9150010355392	texaco			2	qt			
3	Latex Deep Base	8010	Columbia Paint			2	CN			
48	Dexron ATF	9150	PETRO-Canada INC		48	2	qt			
53	antifreeze	9150014649125	old world industries inc			3	GL			
8	ENAMEL PAINT BLUE		COLUMBIA		08	2	CN		F2	



Food Svc - 1/2012

SLN	Product Name	NSN	Manufacturer	Description	MSDSID	Quantity	Unit of Issue	Shelf Life	HCC	Excess
	Dawn	000-00-0000	proctor & gambel			1	bt			

POL Rm - 1/2012

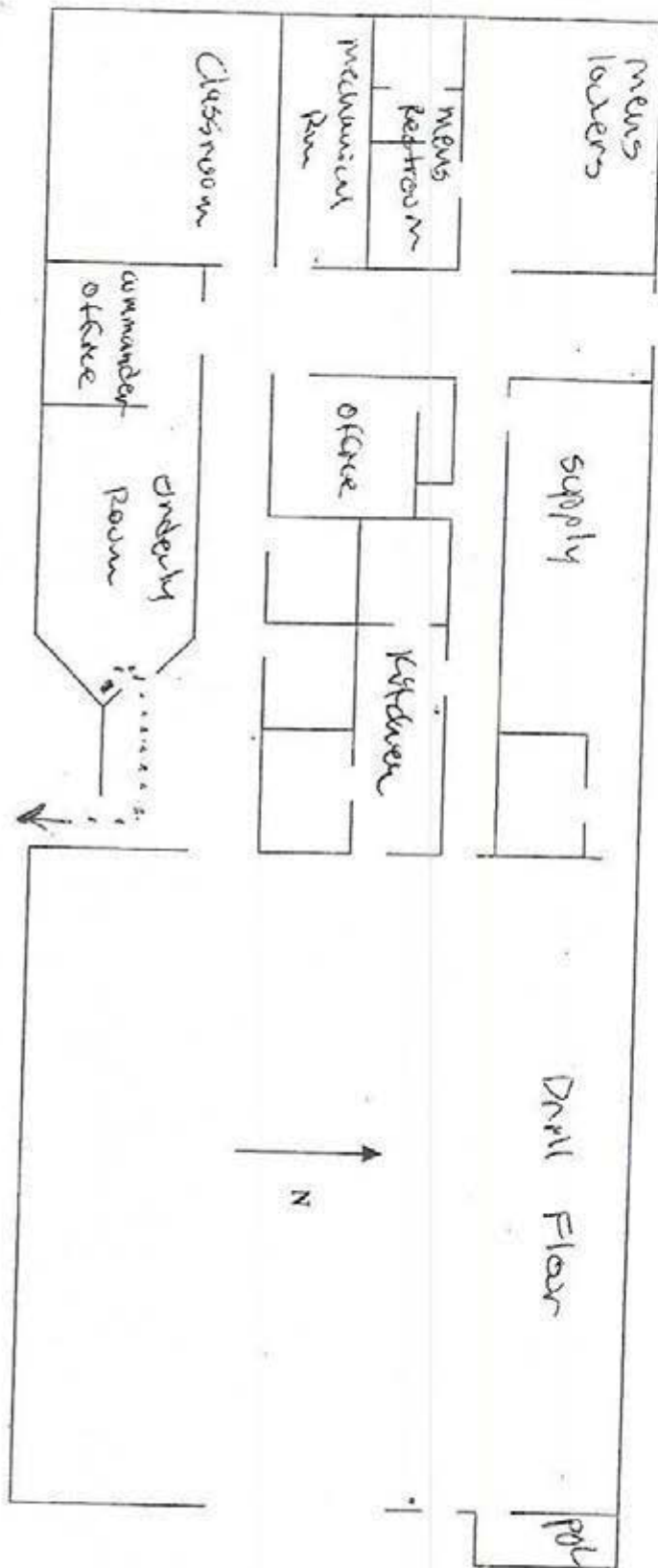
SLN	Product Name	NSN	Manufacturer	Description	MSDSID	Quantity	Unit of Issue	Shelf Life	HCC	Excess
	Nuber 2 Diesel Fuel		Conoco			20	GL			
	Unleaded Gasoline		Conoco			1	Gal			

## Storage Closet - 1/2012

SLN	Product Name	NSN	Manufacturer	Description	MSDSID	Quantity	Unit of Issue	Shelf Life	HCC	Excess
1	Bleach	7930	Clorox			4	bt			
10	Ice Melt		CP Industries		B0206	1	BX			
12	Dust Mop Treatment	7930	Betco			2	bt			
2	Power Time Foam Cleaner	7930	RMC			1	bt			
21	Ax It Plus	7930	Betco			2	bt			
25	BAB-O	7930	Maint pro			1	cn			
26	Stainless Steel Cleaner	7930	Betco			2	cn			
27	Concrete Sealer	7930	Tough Guy			17	GL			
28	GREZ OFF	7930	Spray Nine corp			12	bt			
29	Micrell antibacterial soap	7930	GOJO ind			4	bt			
3	AJAX	7930	Colgate-Palmolive			3	cn			
30	GOJO orange hand cleaner	7930	GOJO ind			1	bt			
31	HI TECH	7930	Betco			5	gl			
31	High Tech Floor Finish	7930	BETCO			5	BT			
4	Push Drain Maintainer	7930	Betco			2	bt			
5	Detergent, General	7930	LHB			2	bt			
6	Glass Cleaner	7930	Drackett			1	bt			
7	A-125	7930	Airkem			1	cn			
8	A-33	7930	Airkem			1	cn			
9	Furniture Polish	7930	Betco			4	cn			



# HARLOWTON ARMORY



\*\*\* IN CASE OF EMERGENCY DIAL 911 \*\*\*



- - DENOTES FIRE EXTINGUISHER
- - DENOTES ESCAPE ROUTE
- FOLLOW UNIT SOP FOR FIRE PREVENTION, SUPPRESSION AND EVACUATION OF PERSONNEL AND MATERIALS.

**IAQ MEASUREMENTS  
HARLOWTON ARMORY  
HARLOWTON, MT  
OCTOBER 31, 2012**

Location	CO <sub>2</sub> max permissible level 962 ppm	Temperature permissible range 68 - 75°F	RH% permissible range 30-60%
Drill Floor, Center	506	68.4	30.2
Men's Locker Room	438	67.9	32.4
Mechanical Room	444	68.5	32.2
Supply Room	422	67.8	32.4
Hallway, outside of Commander's Office	435	68.4	31.5
Orderly Room	453	68.1	31.2
Outdoors	360	61.4	28.5

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

°F = Fahrenheit

RH = Relative Humidity

CO = Carbon Monoxide

STEL = Short Term Exposure Limit

ILLUMINANCE SURVEY  
HARLOWTON ARMORY  
HARLOWTON, MT  
OCTOBER 31, 2012

Location	Light – FC	Minimum lighting requirements – FC
Drill Floor, center of room	35.2	30
Men's Locker Room	20.3	30
Men's Latrine	24.5	30
Classroom	63.5	50
Office	67.2	50
Kitchen	60.6	30
Hallway, outside of Kitchen	18.1	10
Hallway, outside of Orderly room	35.4	10

\*FC= foot candle measurement



**LOCAL EXHAUST VENTILATION SYSTEM MEASUREMENTS**  
**HARLOWTON ARMORY**  
**HARLOWTON, MONTANA**  
**OCTOBER 31, 2012**

Monitoring Location	Linear Feet per Minute (FPM)
Kitchen Stove Exhaust Hood	25-49
Exhaust Hood over sink area	127-188

Harlowton MT.

10-31-12

PPE - Ear Plugs available in Drill Floor  
Latex gloves for emergency available too  
No other PPE found on site

Respirators - not worn

Suspect ACM - 12" Floor tiles, core base mastics  
2'x4' Ceiling tiles

# of Employees - got list

No hazardous noises noted.

Fire suppression system above kitchen area does not have annual inspection tag.

Illumination readings low in some areas below 50 Fc/d.

Shop safety officer? Many

Non-DoD Contractors? NA

No eye wash stations present / eyewash bottle in drill floor

(1) hummer

(1) LMTV - Light mobility tactical vehicle + welding

Hankawton MT

10-31-12

MIG welding outside on in trailer  
during winter when cold

Rarely stick welding too.

POC -

**Non-Responsive**

Age of Building: Built in 1985

Inspection:

No water damage noted / mold

No Peeling Paint

HVAC system operation / no issues

(POL) Hazmat stored in room at NE corner of Drill Floor & Flame cabinet  
(Accessed from outside) in Drill Floor  
Cleaning supplies, light bulbs etc are in  
mechanical room, MSDS is present w/inventory list

Electrical Panels OK

Central HVAC system throughout - OK

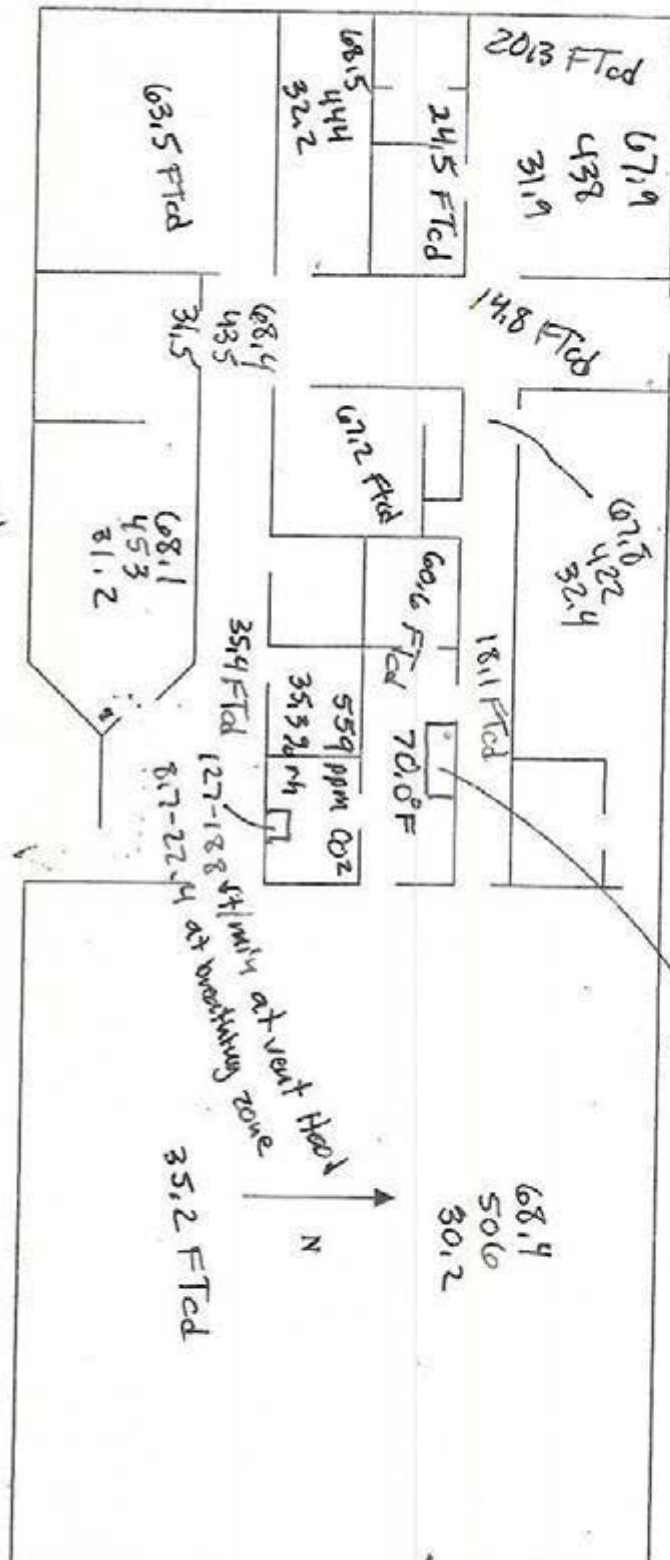
No weapons cleaning here - Go to Billings  
1 fire extinguisher in Drill Floor - monthly inspection  
done Sept 12. Same for a total of (2) Fire  
Extinguishers in the Hallways

1 Pallet Jack - looks brand new

~~1 fire extinguisher mounted on the outside of the~~



# HARLOWTON ARMORY



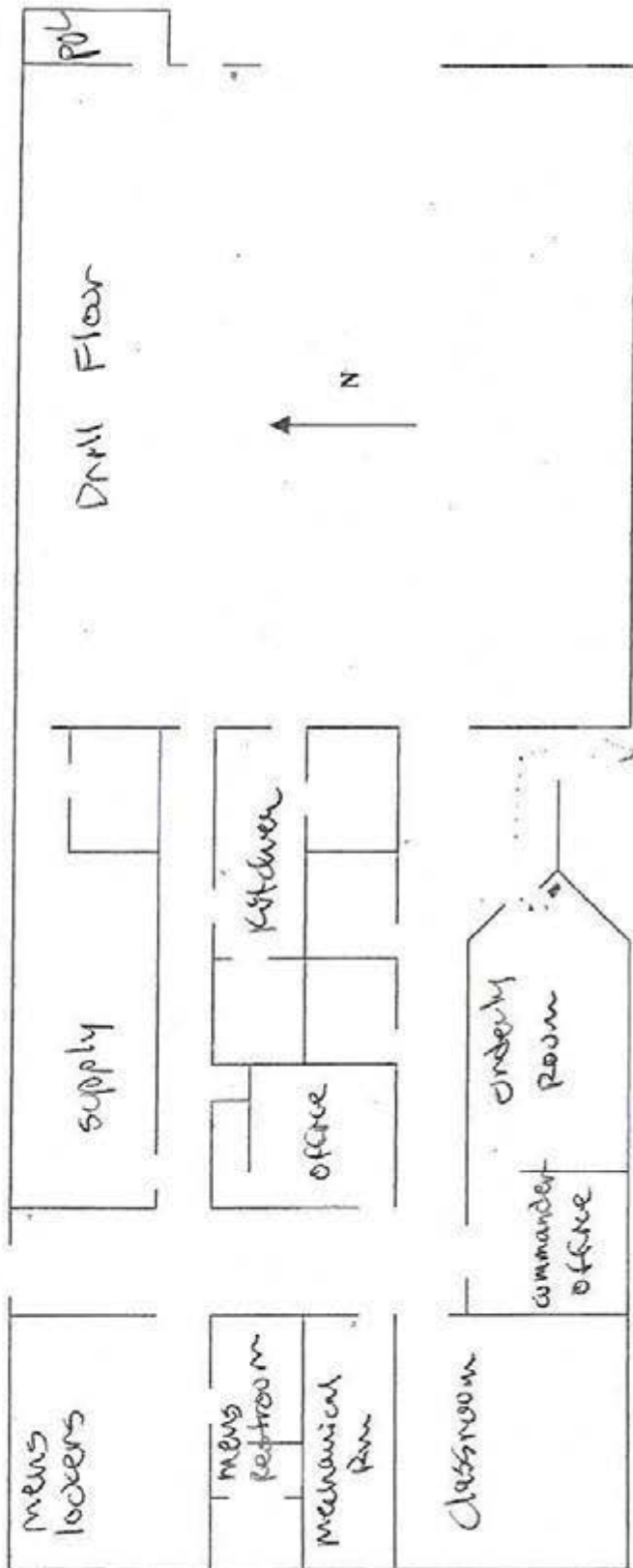
\*\*\* IN CASE OF EMERGENCY DIAL 911 \*\*\*

TAC, Air Flow, Illumination



- - DENOTES FIRE EXTINGUISHER
- - DENOTES ESCAPE ROUTE
- FOLLOW UNIT SOP FOR FIRE PREVENTION, SUPPRESSION AND EVACUATION OF PERSONNEL AND MATERIALS.

# HARLOWTON ARMORY



\*\*\* IN CASE OF EMERGENCY DIAL 911 \*\*\*

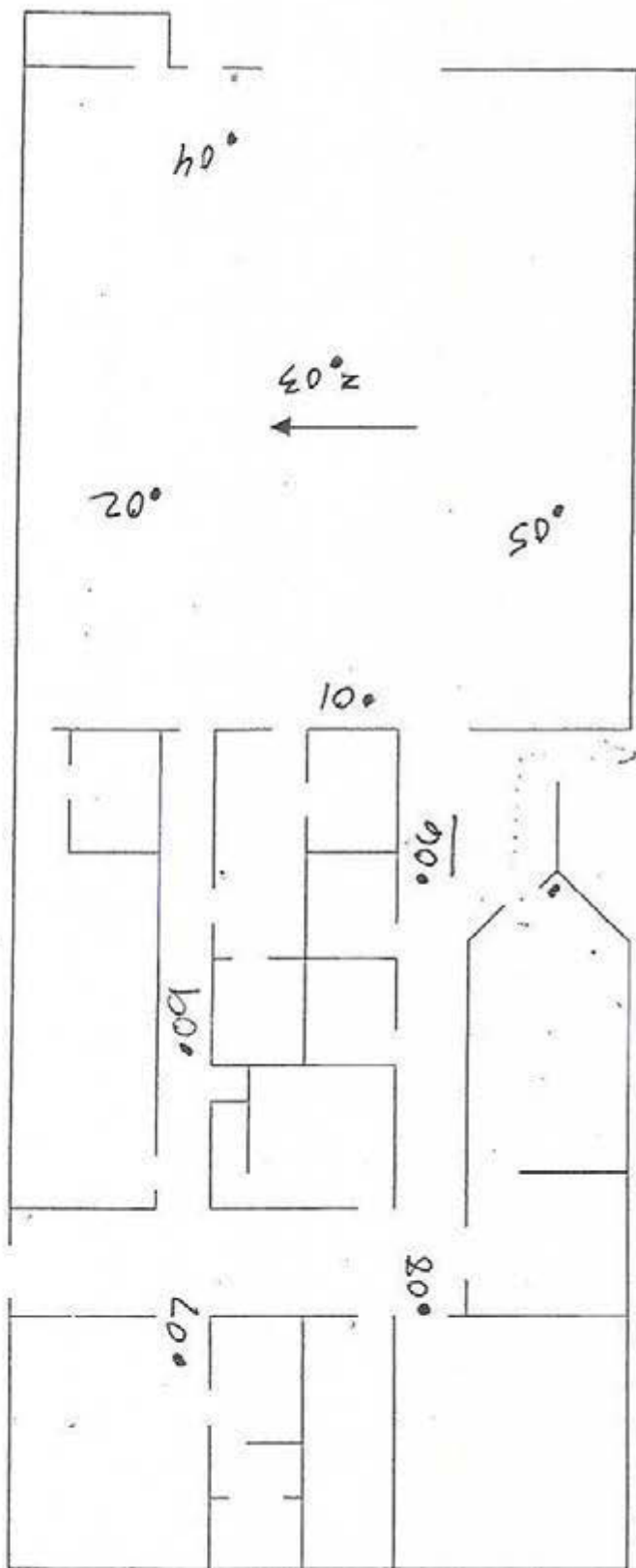
- - DENOTES FIRE EXTINGUISHER
- - DENOTES ESCAPE ROUTE
- FOLLOW UNIT SOP FOR FIRE PREVENTION, SUPPRESSION AND EVACUATION OF PERSONNEL AND MATERIALS.



10-31-12

BEST AVAILABLE COPY

HARLOWTON ARMORY



\*\*\* IN CASE OF EMERGENCY DIAL 911 \*\*\*

Pb wipe samples

- - - DENOTES FIRE EXTINGUISHER
- - - DENOTES ESCAPE ROUTE
- FOLLOW UNIT SOP FOR FIRE PREVENTION, SUPPRESSION AND EVACUATION OF PERSONNEL AND MATERIALS.





## Wipe Sampling Summary Form

NES Job # 013 IH1374.69Collected By Non-ResponsiveSample # 103112-AFRC-HAR-01Analyte LeadSample Collected From Drill FloorWipe Area 1 ft<sup>2</sup> units      Date 10-31-12 Time     Sample # 103112-AFRC-HAR-02Analyte     Sample Collected From Drill FloorWipe Area 1 ft<sup>2</sup> units      Date      Time     Sample # 103112-AFRC-HAR-03Analyte     Sample Collected From Drill FloorWipe Area 1 ft<sup>2</sup> units      Date      Time     Sample # 103112-AFRC-HAR-04Analyte     Sample Collected From Drill FloorWipe Area 1 ft<sup>2</sup> units      Date      Time     Sample # 103112-AFRC-HAR-05Analyte     Sample Collected From Drill FloorWipe Area 1 ft<sup>2</sup> units      Date      Time     

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

## Wipe Sampling Summary Form

NES Job # 013, IH1374.69Collected By Non-ResponsiveSample # 103112-AFRC-HAR-06Analyte LeadSample Collected From Hallway Floor by orderly roomWipe Area 1 ft<sup>2</sup> units      Date 10-31-12 Time     Sample # 103112-AFRC-HAR-07Analyte LeadSample Collected From Floor - mens locker roomWipe Area 1 ft<sup>2</sup> units      Date      Time     Sample # 103112-AFRC-HAR-08Analyte     Sample Collected From Floor - W HallwayWipe Area 1 ft<sup>2</sup> units      Date      Time     Sample # 103112-AFRC-HAR-09Analyte     Sample Collected From Floor N HallwayWipe Area      units      Date      Time     Sample # 103112-AFRC-HAR-10Analyte LeadSample Collected From     Wipe Area 1 ft<sup>2</sup> units      Date      Time     

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

013.IH1374.69

10-31-12

## ARNG Site Assistance Visit Checklist

## General Information

Facility: Harlowen MT  
 Physical Address: 9899 Hwy 12, Harlowen MT  
 Number of Employees: \_\_\_\_\_ Dates: \_\_\_\_\_

## Standard Items

IAQ: Collected Readings Illumination: Collected Readings Lasers: \_\_\_\_\_  
 Jack Stands: 1 pallet Jack CO Monitors: 1 yes  
 Bloodborne Pathogens: Many - Red cross First Aid Confined Space: \_\_\_\_\_  
 LOTO: Equipment available N/A & CPR Equipment used: \_\_\_\_\_  
 Cranes/Hoists: None observed Fall Protection: \_\_\_\_\_  
 Respirators: NA  
 Hearing Protection: earplugs available in Drill Floor  
 Flammables Cabinets: 1 - has Inventory list, MSDS, cabinet operational  
 Radon Detectors: NA  
 Fire Extinguishers serviced: ☒ Inspected: ☒

## Ventilation

Paint Booth: N/A Work Bays: \_\_\_\_\_ Welding: MIG - outside on in welding trail  
 Soldering: on Drill Floor Carpenter: N/A Other?: \_\_\_\_\_

## Noise

Noise Dosimetry: N/A  
 SPL Measurements: Pneumatics: \_\_\_\_\_  
 Welding: \_\_\_\_\_  
 Machinery: Office equipment  
 Vehicles: 1 Hummer



Sampling

Welding:

MIG:

TIG:

Stick:

Plasma Cutting:

Stainless:

Galvanized:

Painting:

CARC:

Chromates:

Solvents:

Lead:

Wipes:

Soldering:

Paint Removal:

Particulates:

Wood Working:

Solvents:

Lubrication:

Documentation

Fire Prevention and Evacuation Plan:

in onsite SOP safety

Respiratory Protection:

Spirometry:

None

Fit tests:

None

Addressed in onsite Safety SOP

Hazard Communication: Included in onsite Safety SOP

Hearing Protection:

Included in onsite Safety SOP

Noise Survey?

Protective Eyewear: Included in onsite Safety SOP

Job Safety Analysis / Hazard Assessments: None available to do.

- No Asbestos Survey / mgt plan available
- Haz Waste & Haz materials management SOP onsite
- Army Safety programs AR-385 series on site
- in shop Safety training certificate 5-14-2010 for many
- Confined space

# 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.

Non-Responsive

Approved &  
Service Representative

### Calibration Standards

NIST Traceable#	Inst. ID#	Description	Manufacturer	Model	Cal Date	Date Due
1700230828	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.





## Certificate of Calibration

Certificate No: 1095258CDF020012

Submitted By: INSW-NGB  
10510 SUPERFORTRESS AVE.  
MATHER, CA 95655

Serial Number: CDF020012

Date Received: 3/28/2012

Customer ID:

Date Issued: 3/29/2012

Model: 2900 SLM

Valid Until: 3/29/2013

Test Conditions:

Model Conditions:

Temperature: 18°C to 29°C

As Found: IN TOLERANCE

Humidity: 20% to 80%

As Left: IN TOLERANCE

Barometric Pressure: 890 mbar to 1050 mbar

SubAssemblies:

Description:

Serial Number:

MICROPHONE QE 7052 1/2 IN. ELECTRET

25923

TYPE 2 PREAMP

N/A

Calibration Procedure: 56V996

Reference Standard(s):

I.D. Number	Device
ET0000453	FLUKE 45 MULTIMETER
ET0000556	B&K ENSEMBLE

Last Calibration Date	Calibration Due
3/2/2011	3/2/2013
4/27/2011	4/27/2012

Measurement Uncertainty:

+/- 2.2% ACOUSTIC (0.19dB) +/- 1.4% VAC +/- 0.1% VDC  
Estimated at 95% Confidence Level (k=2)

Calibrated By:

**Non-Responsive**

3/29/2012

Technician

Reviewed/Approved By:

3/29/2012

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 Quest Technologies.



## Certificate of Calibration

Certificate No: 1095258CDF020012

(A) indicates out of tolerance condition

Test Type	Nominal	Tolerance-	Tolerance+	As Found	As Left	Unit
Calibration	110.0	109.5	110.5	110.1	110.0	dB
A Weighting/125Hz	93.9	92.4	95.4	94.4	94.3	dB
A Weighting/250Hz	101.4	99.9	102.9	101.8	101.7	dB
A Weighting/500Hz	106.8	105.3	108.3	107.0	106.9	dB
A Weighting/1kHz	110.0	109.5	110.5	110.1	110.0	dB
A Weighting/2kHz	111.2	109.2	113.2	111.5	111.4	dB
C Weighting/125Hz	109.8	108.3	111.3	110.6	110.5	dB
C Weighting/250Hz	110.0	108.5	111.5	110.7	110.5	dB
C Weighting/500Hz	110.0	108.5	111.5	110.5	110.3	dB
C Weighting/1kHz	110.0	109.5	110.5	110.2	110.1	dB
C Weighting/2kHz	109.8	107.8	111.8	110.2	110.1	dB
Lin Weighting/125Hz	110.0	108.5	111.5	110.8	110.7	dB
Lin Weighting/250Hz	110.0	108.5	111.5	110.7	110.6	dB
Lin Weighting/500Hz	110.0	108.5	111.5	110.5	110.4	dB
Lin Weighting/1kHz	110.0	109.5	110.5	110.2	110.1	dB
Lin Weighting/2kHz	110.0	108.0	112.0	110.4	110.3	dB
Lin/60 - 120/120	120.0	118.8	121.2	120.6	120.5	dB
Lin/60 - 120/110	110.0	109.5	110.5	110.1	110.0	dB
Lin/60 - 120/100	100.0	98.8	101.2	99.9	99.8	dB
Lin/60 - 120/90	90.0	88.8	91.2	90.0	89.9	dB
Lin/40 - 100/90	90.0	88.8	91.2	89.8	89.8	dB
Lin/40 - 100/80	80.0	78.8	81.2	79.9	79.8	dB
Peak/60 - 120/120	123.0	121.5	124.5	122.2	122.0	dB
Peak/60 - 120/110	113.0	111.5	114.5	113.1	112.9	dB
Peak/60 - 120/100	103.0	101.5	104.5	103.0	102.8	dB
Peak/60 - 120/90	93.0	91.5	94.5	93.1	93.0	dB
DC Out/120dB	1.000	0.950	1.050	1.008	1.005	VDC
AC Out/120dB	3.160	2.920	3.430	3.252	3.196	VAC

\* indicates non accredited





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 / 35.8 %

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 #
CC3185	MULTIFUNCTION PROCESS CALIBRATOR	728	1355148	FLUKE	Nov 5, 2013	2008120211043
J2270	LASER PARTICLE COUNTER	200L-1-115-1	90053761A	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-IL 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.





# 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 (499.7~512.3)	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	12-15-11	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

BRT\_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)		

☒ 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)	529~667 (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	E001759	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	E003539	02-28-12	08-28-12	DC Voltage	E001638	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

**TABLE 1**  
**LEAD WIPE SAMPLE RESULTS**  
**HARLOWTON ARMOR**  
**OCTOBER 31, 2012**

Sample Number	Sample Area	Sample Location	Results ( $\mu\text{g}/\text{ft}^2$ )	ARNG Standard ( $\mu\text{g}/\text{ft}^2$ )
103112-AFCR-HAR-01	Drill Floor	Center-west, floor sample	<b>52</b>	$\leq 40$
103112-AFCR-HAR-02	Drill Floor	Northwest corner, floor sample	<b>67</b>	$\leq 40$
103112-AFCR-HAR-03	Drill Floor	Center, floor sample	77	$\leq 40$
103112-AFCR-HAR-04	Drill Floor	Northeast corner, floor sample	<b>49</b>	$\leq 40$
103112-AFCR-HAR-05	Drill Floor	South-center, floor sample	9.1	$\leq 40$
103112-AFCR-HAR-06	Converted IFR	Hallway by orderly room, floor sample	6.5	$\leq 200$
103112-AFCR-HAR-07	Converted IFR	Men's locker room, floor sample	4.5	$\leq 40$
103112-AFCR-HAR-08	Storage Room	West hallway, floor sample	9.4	$\leq 200$
103112-AFCR-HAR-09	IT Room	North hallway, floor sample	< 2.5	$\leq 200$
103112-AFCR-HAR-10	Blank Control Sample	—	< 2.5	NA

$\mu\text{g}/\text{ft}^2$  = 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: November 12, 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: 34-1231121

Client Project ID: 013.IH1374.69/Harlowton MT

Purchase Order: 013.IH1374.69

Project Manager:

Non-Responsive

## Analytical Results

Sample ID: <b>103112-AFCR-HAR-01</b>		Media: Ghost Wipe		Collected: 10/31/2012	
Lab ID: 1231121001		Sampling Location: Harlowton MT		Received: 11/06/2012	
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 1 ft <sup>2</sup>		Prepared: 11/06/2012	
				Analyzed: 11/07/2012	
Analyte	ug/sample	ug/ft <sup>2</sup>	RL (ug/sample)		
Lead	52	52	2.5		

Sample ID: <b>103112-AFCR-HAR-02</b>		Media: Ghost Wipe		Collected: 10/31/2012	
Lab ID: 1231121002		Sampling Location: Harlowton MT		Received: 11/06/2012	
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 1 ft <sup>2</sup>		Prepared: 11/06/2012	
				Analyzed: 11/07/2012	
Analyte	ug/sample	ug/ft <sup>2</sup>	RL (ug/sample)		
Lead	67	67	2.5		

Sample ID: <b>103112-AFCR-HAR-03</b>		Media: Ghost Wipe		Collected: 10/31/2012	
Lab ID: 1231121003		Sampling Location: Harlowton MT		Received: 11/06/2012	
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 1 ft <sup>2</sup>		Prepared: 11/06/2012	
				Analyzed: 11/07/2012	
Analyte	ug/sample	ug/ft <sup>2</sup>	RL (ug/sample)		
Lead	77	77	2.5		

Sample ID: <b>103112-AFCR-HAR-04</b>		Media: Ghost Wipe		Collected: 10/31/2012	
Lab ID: 1231121004		Sampling Location: Harlowton MT		Received: 11/06/2012	
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 1 ft <sup>2</sup>		Prepared: 11/06/2012	
				Analyzed: 11/07/2012	
Analyte	ug/sample	ug/ft <sup>2</sup>	RL (ug/sample)		
Lead	49	49	2.5		

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

ALS GROUP USA, CORP. Part of the ALS Laboratory Group A Campbell Brothers Limited Company

Environmental

www.alsglobal.com

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## ANALYTICAL REPORT

Workorder: 34-1231121

Client Project ID: 013.IH1374.69/Harlowton MT

Purchase Order: 013.IH1374.69

Project Manager: Non-Responsive

## Analytical Results

Sample ID: <b>103112-AFCR-HAR-05</b>		Media: Ghost Wipe		Collected: 10/31/2012
Lab ID: 1231121005		Sampling Location: Harlowton MT		Received: 11/06/2012
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 1 ft <sup>2</sup>		Prepared: 11/06/2012
				Analyzed: 11/07/2012
Analyte	ug/sample	ug/ft <sup>2</sup>	RL (ug/sample)	
Lead	9.1	9.1	2.5	

Sample ID: <b>103112-AFCR-HAR-06</b>		Media: Ghost Wipe		Collected: 10/31/2012
Lab ID: 1231121006		Sampling Location: Harlowton MT		Received: 11/06/2012
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 1 ft <sup>2</sup>		Prepared: 11/06/2012
				Analyzed: 11/07/2012
Analyte	ug/sample	ug/ft <sup>2</sup>	RL (ug/sample)	
Lead	6.5	6.5	2.5	

Sample ID: <b>103112-AFCR-HAR-07</b>		Media: Ghost Wipe		Collected: 10/31/2012
Lab ID: 1231121007		Sampling Location: Harlowton MT		Received: 11/06/2012
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 1 ft <sup>2</sup>		Prepared: 11/06/2012
				Analyzed: 11/07/2012
Analyte	ug/sample	ug/ft <sup>2</sup>	RL (ug/sample)	
Lead	4.5	4.5	2.5	

Sample ID: <b>103112-AFCR-HAR-08</b>		Media: Ghost Wipe		Collected: 10/31/2012
Lab ID: 1231121008		Sampling Location: Harlowton MT		Received: 11/06/2012
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 1 ft <sup>2</sup>		Prepared: 11/06/2012
				Analyzed: 11/07/2012
Analyte	ug/sample	ug/ft <sup>2</sup>	RL (ug/sample)	
Lead	9.4	9.4	2.5	

Sample ID: <b>103112-AFCR-HAR-09</b>		Media: Ghost Wipe		Collected: 10/31/2012
Lab ID: 1231121009		Sampling Location: Harlowton MT		Received: 11/06/2012
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 1 ft <sup>2</sup>		Prepared: 11/06/2012
				Analyzed: 11/07/2012
Analyte	ug/sample	ug/ft <sup>2</sup>	RL (ug/sample)	
Lead	<2.5	<2.5	2.5	



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## ANALYTICAL REPORT

Workorder: 34-1231121  
Client Project ID: 013.IH1374.69/Harlowton MT  
Purchase Order: 013.IH1374.69  
Project Manager: Non-Responsive

## Analytical Results

Sample ID: 103112-AFCR-HAR-10		Media: Ghost Wipe		Collected: 10/31/2012
Lab ID: 1231121010		Sampling Location: Harlowton MT		Received: 11/06/2012
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 1 ft <sup>2</sup>		Prepared: 11/06/2012
				Analyzed: 11/07/2012
Analyte	ug/sample	ug/ft <sup>2</sup>	RL (ug/sample)	
Lead	<2.5	<2.5	2.5	

## Report Authorization

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

## Laboratory Contact Information

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

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





## ANALYTICAL REPORT

Workorder: 34-1231121

Client Project ID: 013.IH1374.69/Harlowton MT

Purchase Order: 013.IH1374.69

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/bdwl/abservice.htm">http://ndep.nv.gov/bdwl/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.



173112

DATE \_\_\_\_\_

CONTACT ALS SALT LAKE PRIOR TO SENDING SAMPLES

Billing Ad

ALS Project Manager

## 5. Sample Collection

Sampling Site Harlowton 1715

### Industrial Process

Date of Collection 10-5-72

Time Collected

Date of Shipment

Chain of Custody No.

6. How did you first learn about ALS?

## 7. REQUEST FOR ANALYSES

REQUEST FOR ANALYSES					
Laboratory Use Only	Client Sample Number	Matrix*	Sample Volume	ANALYSES REQUESTED - Use method number if known	Units**
	103112-AFCR-HAR-01	Wipe	1 ft <sup>2</sup>	NIOSH T30	
	103112-AFCR-HAR-02				
	103112-AFCR-HAR-03				
	103112-AFCR-HAR-04				
	103112-AFCR-HAR-05				
	103112-AFCR-HAR-06				
	103112-AFCR-HAR-07				
	103112-AFCR-HAR-08				
	103112-AFCR-HAR-09				
	103112-AFCR-HAR-10				

\* 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 Command

Relinquished

Received by

Relinquished

Received by

Date/Time 11-27-11

Date/Time 11/06/12 0920

Date/Time

Date/Time

960 West LeVoy Drive / Salt Lake City, UT 84123

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

ALS Environmental

Posted to NGB FOIA Reading Room  
May, 2018.

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FOIA Requested Record #J-15-0085 (MT)  
Released by National Guard Bureau  
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## ALPHABETICAL ALERT ROSTER

27 Jun 2012

Unit Name: DET 2 1063RD SMC

UPC: PLUAZ

PRN: NU2

Name	Rank	Home Address	Home Phone	Work Phone	AIN
BAUCH ARIC DANIEL	PFC	2918 CUSTER AVE BILLINGS, MT 59102	(406)850-4019		
BUCKLEY JORDAN THOMAS	SPC	1143 HARRISON ST GREAT FALLS, MT 59404	(406)799-5667		
COONSE REX DONALD	PFC	711 MAIN STREET ROUNDUP, MT 59072	(406)323-1330		
HOFFELDT TIMOTHY ADAM	SGT	9180 ELLOAM RD CHINOOK, MT 59523	(406)357-3215		
HUOT MARY ELLEN <i>Only Full Time Employee</i>	SSG	PO BOX 63 HARLOWTON, MT 59036	(406)579-8214	(406)632-4612	
NEELSON BRETT RUDOLPH	SGT	2502 ATCHISON LAUREL, MT 59044	(406)350-2810	(406)628-3247	
POUCHER THERON JAMES	PFC	PO BOX 48 BALLANTINE, MT 59006	(406)694-9360		
REVIJOUS JASON WAYNE	SSG	1125 ORION ROAD APT #1 HELENA, MT 59602	(406)461-0839	(406)324-3294	
SADLER SAMMANTHA M	PFC	BOX 254 HARLOWTON, MT 59036	(406)350-0081		
SIMMONS ROBERT ALAN JR	PFC	2719 S 28TH RD BALLANTINE, MT 59006			
SZILLAT JOSEPH JOHN	SPC	11122 N CHASE WAY WESTMINSTER, CO 80020	(406)855-8763		

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**Industrial Hygiene Southwest**  
**Violation Inventory Log**  
**LOG OF SCHEDULE OF CORRECTIVE ACTION - COMPLIANCE WITH SAFETY AND HEALTH STANDARDS**  
**Harlowton 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
MTHA-103112-3.4	No asbestos O/M plan or asbestos building survey was available.	Facility	3	Create an asbestos Operations & Maintenance Plan and have an asbestos building survey performed by a qualified MT asbestos building inspector.					29 CFR 1926.1110; TB MED 513
MTHA-103112-4.1	Lead dust on horizontal surfaces	Drill floor	3	Housekeeping practices need to be improved. Clean horizontal surfaces in these areas using the Armory Clean-up SOP included.					29 CFR 1910.1025; NG PAM 420-15
MTHA-103112-4.1	The canopy exhaust hood over the kitchen stove is insufficient.	Kitchen	4	Have the canopy exhaust hood serviced or repaired to increase air flow velocity.					TM 5-810-1
MTHA-103112-4.11	The fire suppression system above the stove has no annual inspection tag	Kitchen	4	Ensure kitchen stove fire suppression system receives an annual maintenance inspection by a qualified technician.					29 CFR 1910.160(b)(6)

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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 Harlowton 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).

### **N3.4 Asbestos Documentation**

Consult with MT state certified inspector to evaluate the facility for ACM.

Develop and implement a written asbestos Operations and Management plan.

### **N4.1 Lead Wipe Sampling**

Housekeeping practices need to be improved. 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 concentrations have dropped to acceptable levels.

Post warning signage at the entry for potential lead dust exposure to pregnant females or females of child bearing age and to children.

### **N4.9 Exhaust Ventilation Survey**

Have the canopy exhaust hood serviced or repaired to increase air flow velocity.

### **N4.11 Safety Walk-Through**

Ensure kitchen stove fire suppression system receives an annual maintenance inspection by a qualified technician.

# NOISE SURVEY (SOUND LEVEL METER SURVEY)

1. DATE (YYYYMMDD) <b>20121031</b>		2. TYPE SURVEY (ENTER CODE) 01 1 - INITIAL SURVEY 2 - RE-SURVEY 3 - OTHER	
3. SOUND LEVEL METER A. MANUFACTURE <b>QUEST TECHNOLOGIES</b>		4. MICROPHONE A. MANUFACTURE ATTACHED TO SOUND LEVEL METER	
B. MODEL <b>2900</b>	C. SERIAL NO. <b>CDF020012</b>	B. MODEL	C. SERIAL NO.
D. LAST ELECTROACOUSTIC CALIB. DATE (YYYYMMDD) <b>20120300</b>		D. LAST ELECTROACOUSTIC CALIB. DATE (YYYYMMDD) <b>201203</b>	
6. WIND SCREEN (X ONE) Used <input checked="" type="checkbox"/> NOT USED <input type="checkbox"/>		7. MEASUREMENTS OBTAINED (X ONE) INDOORS <input checked="" type="checkbox"/> OUTDOORS <input type="checkbox"/>	
8. DESCRIPTION OF AREA/DUTIES WHERE NOISE SURVEY CONDUCTED (Illustrate on additional sheet and attach to form)  <b>Evaluation of kitchen canopy hood over gas stove</b>		9. PRIMARY SOURCE OF NOISE <b>Kitchen Appliances</b>	
		10. SECONDARY SOURCE OF NOISE	
11. SOUND LEVEL DATA		12. PROTECTION REQUIRED (RE: dBA + LEVEL)	
A. LOCATION	B. METER ACTION	C. dBC	D. dBA
			E. RISK ASSESSMENT CODE
			A. NONE (<85 dBA)
			B. PLUG OR MUFF (85-108)
			C. PLUG AND MUFF (108-118)
			D. PLUG + MUFF + TIME LIMIT (>118)
<b>Stove top height</b>	<b>S</b>		<b>64.2 - 66.7</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.			
<b>KITCHEN NOT USED BY MILITARY PERSONNEL; RENTED OUT TO CIVILIANS, ONCE A YEAR.</b>			
14. MORE DETAILED NOISE EVALUATION REQUIRED:		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (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) <b>NONE</b>			
16. SUPERVISOR OF NOISE-HAZARDOUS AREA OF OPERATION			
B. TELEPHONE (include area code) <b>406-632-4612</b>		C. ORGANIZATION <b>HARLOWTON ARMORY, HARLOWTON, MT</b>	
Name, First, MI <b>Non-Responsive</b>		18. HEARING CONVERSATION MONITOR (Last Name, First, MI)	



## *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.

# Non-Responsive

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.

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

1. Date Prepared: **24 September 2012**
2. Names (and Company Name) of Personnel Conducting Industrial Hygiene Site Assistance Visit: **Non-Responsive** ES, Inc.
3. Facility Name and Brief Summary of Primary Activities Conducted at Facility: **Harlowton Armory is currently a Maintenance detachment with welders and recovery personnel**
4. Facility Address: **9895 HWY 12 W, Harlowton, MT 59036**
5. Primary Unit Assigned to Facility: **Det 2, 1063<sup>rd</sup> SMC, Non-Responsive**
6. Co-Tenant Units Assigned or Working Within Facility (LIST ALL): **none**
7. Square Ft. Area of Facility:
8. Work Schedule: **8-5 Mon-Fri, and 1 weekend per month**
9. Number of work bays: **0**
10. Equipment Density and Type:
  - a. List Equipment Nomenclature Serviced or Maintained at Facility: **N/A**
  - b. List Total Number for Each Nomenclature Serviced or Maintained at Facility: **N/A**
11. Total Number of Personnel: **11**
12. No. of Admin. Personnel (Include Status – AGR, Fed. Tech., IDT, State or Contract Employee): **1**
13. No. of Maintenance Personnel (Include Status – AGR, Fed. Tech., IDT, State or Contract Employee): **11**
14. Total Number of Personnel Enrolled in the Hearing Conservation Program: **0**
15. Total Number of Personnel Enrolled in the Respiratory Protection Program: **0**
16. Total Number of Personnel Enrolled in the Medical Surveillance Program: **0**

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

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

a. Email Address, Commercial Telephone Number and Unit Assigned to:  
Jaylynn.p **Non-Responsive** 6-324-3269, 1063<sup>rd</sup> SMC

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

a. Email Address, Commercial Telephone Number and Unit Assigned to:  
**Non-Responsive** 1063<sup>rd</sup> SMC

20. Facility Telephone Number: 406-324-5580



## 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)	Yes. Samples 103112-AFRC-HAR-01, 02, 03, 04, & 05.
Are any <b>weapons cleaned</b> in the facility, if yes where are they cleaned?	N/A
Additional <b>lead wipe</b> samples taken from 25% of the rest of the building - <b>-(on floor areas only)</b>	Yes. Samples 103112-AFRC-HAR-06, 07, 08, & 09.
Is there a <b>converted indoor firing range</b> ? If so collect additional wipe samples IAW the SOW.	Yes. Now a men's locker room.
Is there any peeling <b>paint</b> ? Take bulk sample if able.	N/A
Are there any signs of water damage or <b>mold</b> ?	N/A
Any suspected <b>ACM</b> ? Where and what condition is it in. Bulk sample if able.	Yes, in 12" floor tiles, mastic and ceiling tiles.
Quality of housekeeping	Good
HVAC maintenance plan in place?	Yes, through Facilities.
<b>Overall condition</b> of HVAC system	Looks new and works good.
Obtained <b>CO2, Temp, RH</b> monitoring	Yes
<b>HAZMAT inventory</b> on hand (make copies for the report), <b>MSDS</b> 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.	Storage locker is in good condition with proper ventilation.

Evaluate Kitchen Stove Hood Flow if Present IAW NFPA Standard 96.	Not used by NGB. Used once a year by the youth camp.
Collect Source Noise Measurements of Kitchen Appliances and Document Using DD 2214	Done
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)	<b>Non-Responsive</b> DET 2, 1063D SMC 9899 HIGHWAY 12 HARLOWTON, MT 59036 406-324-5580  (Add Checklist to Report)

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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 DOE/HRs-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 DOE/HRs-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			

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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	2			
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	2			
Number of design review packages evaluated and addressed by an IH with recommendations applicable to occupational health concerns		953-02-20	IHT			
Number of design review packages which required IH evaluation and recommendations applicable to occupational health concerns		953-02-20	IHT			

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## 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

**Havre Armory**  
**1050 2<sup>nd</sup> West Street**  
**Havre, MT 59501**

10510 Superfortress Avenue, Suite C, Mather, CA 95655

(916) 854-1491



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

ARNG-CSG-IHSW

7 January 2013

MEMORANDUM THRU Montana Army National Guard, ATTN: **Non-Responsive** Montana  
Medical DET, Troop Medical Clinic Rm 1009, 1956 MT Majo Street, Fort Harrison, MT 59636

FOR Commander, Havre Armory 1050 2<sup>nd</sup> West Street, Havre, MT 59501

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for the Havre Armory  
1050 2<sup>nd</sup> West Street, Havre, Montana conducted on 02 October 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 Havre Armory at 1050 2<sup>nd</sup> West St., Havre, 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. A building inspection of the armory, for asbestos, should be provided and a management plan in



**ARNG-CSG-IHSW**

**SUBJECT:** Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for the Havre Armory 1050 2<sup>nd</sup> West Street, Havre, Montana conducted on 02 October 2012.

place for personnel working at and on the facility should be written from that inspection. (para. 4.4) (RAC 3)

b. Record fire extinguishers inspections which should be done monthly and annually with documentation on extinguisher. (para. 4.11.2) (RAC 4)

c. A current Chemical Inventory should be done and MSDS's acquired for these chemicals and placed in a centrally located binder for easy access. A HazCom program should be incorporated and annual training documented and kept in individuals personal records. (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.

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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 undersigned at (916) 854-1491 or via email at

**Non-Responsive**

*FOR*  
**Non-Responsive**

NGB, IHSW, CIV  
Industrial Hygiene





Industrial Hygiene, Southwest  
Hazard Inventory Log  
Have Armory - MT

CONTROL NUMBER	HAZARD DESCRIPTION	SITE	RAC	HAZARD COUNTERMEASURE	SUSPENSE DATE	ACTION OIC/COIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
<input checked="" type="checkbox"/> MTHA-100212-4.11.2	No documented evidence of monthly fire extinguisher inspections	Armory	4	Fire extinguishers should be inspected monthly. Monthly inspections should be documented on the fire extinguisher.					29 CFR 1910.157(e)(3)
<input type="checkbox"/> MTHA-100212-4.8	No safety training or record keeping.	Armory	4	A written HAZCOM Program should be implemented.					29 CFR 1910.120(e); NIOSH 385-10, Ch. 6-4(a)
<input type="checkbox"/> MTHA-100212-4.4	No Asbestos documentation on file at the Armory	Armory	3	Consult with a Montana state-certified inspector to inspect the facility for any ACM. If there is asbestos located in the building then a Operations & Maintenance Plan must be written and communicated to personnel working at the facility.					29 CFR 1910.1001(b) & 29 CFR 1926.1101

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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)

HAVRE ARMORY  
1050 2<sup>ND</sup> STREET WEST  
HAVRE, MONTANA 59501

October 2, 2012

*Prepared for:*  
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*Prepared by:*  
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*Prepared by:*

**Non-Responsive**

*Reviewed by:*

**Non-Responsive**

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## 1.0 INTRODUCTION

On October 2, 2012, **Non-Responsive** Industrial Hygiene Field Technician of NES, Inc. (NES) conducted an Industrial Hygiene Site Assistance Visit (IHS AV) at the Havre Armory located at 1050 2<sup>nd</sup> Street West in Havre, Montana 59501. The primary point of contact for information gathered during this survey was **Non-Responsive** one: (406) 265-3444, 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 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 Havre Armory has one full time guard member. There is one part time recruiter who is also an employee at this facility. The Armory has offices used for administrative and recruiting purposes. The Havre Armory also contains a drill floor, storage rooms, a classroom, a gym and a kitchen. There are no civilian employees at this Armory. No civilian functions are carried out in this Armory. 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 I, Table 1 for lead wipe sampling analytical results and lead wipe sample locations recorded on Havre Armory's floor plan. 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, are submitted to ALS Laboratory Group (ALS) in Salt Lake City, Utah. ALS analyzes 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 were 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.

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

An evaluation of the heating, ventilation, and air-conditioning systems that serves 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 Q-Trak™ IAQ Monitor 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 Havre Armory. The instrument used for the illumination survey was a Konica Minolta Light Meter, Model TL1. 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.

- 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 Havre 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 6 Ghost Wipe™ lead samples were taken during the time of the IHS AV. During the IHS AV, there was no available access to the drill floor. The main lobby, the hallways and the gym were sampled for lead.

The analytical results for each of the aforementioned areas were below the 40  $\mu\text{g}/\text{ft}^2$  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
10212-Havre-01	Lobby Entrance	Lobby entrance at the front door	<2.5	< 40 $\mu\text{g}/\text{ft}^2$
10212-Havre-02	Main Lobby	Lobby at the waiting area in front of the chairs	<2.5	< 40 $\mu\text{g}/\text{ft}^2$
10212-Havre-03	Recruiter Office	Main lobby at the door entrance into the recruiters office	<2.5	< 40 $\mu\text{g}/\text{ft}^2$
10212-Havre-04	Main Hallway	Main hallway at the classroom door entrance	<2.5	< 40 $\mu\text{g}/\text{ft}^2$
10212-Havre-05	Gym	Gym area floor sample near door	2.5	< 40 $\mu\text{g}/\text{ft}^2$
10212-Havre-06	Hallway	Door entrance to drill floor	<2.5	< 40 $\mu\text{g}/\text{ft}^2$

See Table 1 in Appendix I for a table of results. The laboratory reports are supplied in Appendix J.

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

No peeling paint was seen in the interior or on the exterior of the building at the Havre Armory. The paint was in good condition. No bulk samples were taken during the IHSAV.

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

During the inspection of the facility water damage was not observed in any areas of the Armory. According to our POC there have been no problems with water damage in the building.

#### **4.4 Asbestos Documentation**

No asbestos documentation could be provided during the IHSAV. No suspected ACM was observed in the building.

#### **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 IHSAV.

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 651 ppm in the hallway near the restrooms.

Building air temperatures ranged from 69°F to 71°F and relative humidity was between 33% and 37% 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.

The carbon dioxide, temperature, and relative humidity were all within the ASHRAE recommended levels.

#### **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 general lighting throughout the Havre Armory was adequate. See Appendix E for a data table.

#### **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) should be maintained in a master binder. Inventories and MSDSs should also be maintained in separate binders, one for each satellite storage location (i.e. flammable storage room or cabinet). The master chemical inventory and MSDS binder should be arranged by a Federal Stock Class and National Stock Number (NSN). The inventories and MSDSs should be arranged by product location on the shelf, using alphanumeric designations. There was no access to any MSDS binders or hazardous material storage areas during the time of the IHS AV.

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

During the IHS AV there were no areas where hazardous chemicals were able to be observed, due to the lack of access into the necessary parts of the building that contain such.

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

Not applicable to the facility as stated by Justin O'Neal.

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

No training records or training documents could be provided during the IHS AV.

#### **4.9 Ventilation Survey**

No access to the kitchen was available during the site visit. There is a kitchen inside of the drill floor as stated by Justin O'Neal; however access was not available to this area. If there



## 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**

November 28, 2012

Date

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** 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  
HAVRE ARMORY  
HAVRE, MONTANA  
OCTOBER 02, 2012**



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



**Photo 2:** Lead sample 10212-Havre-01 which was taken from the floor in the main entrance to Armory.



**PHOTO LOG  
HAVRE ARMORY  
HAVRE, MONTANA  
OCTOBER 02, 2012**



**Photo 3:** Lead sample 10212-Havre-02 which was taken from the floor in Lobby waiting area.



**Photo 4:** Lead sample 10212-Havre-03 which was taken from the floor at the entrance to the administrative office.

**PHOTO LOG  
HAVRE ARMORY  
HAVRE, MONTANA  
OCTOBER 02, 2012**



**Photo 5:** Lead sample 10212-Havre-04 which was taken from the hallway floor area.



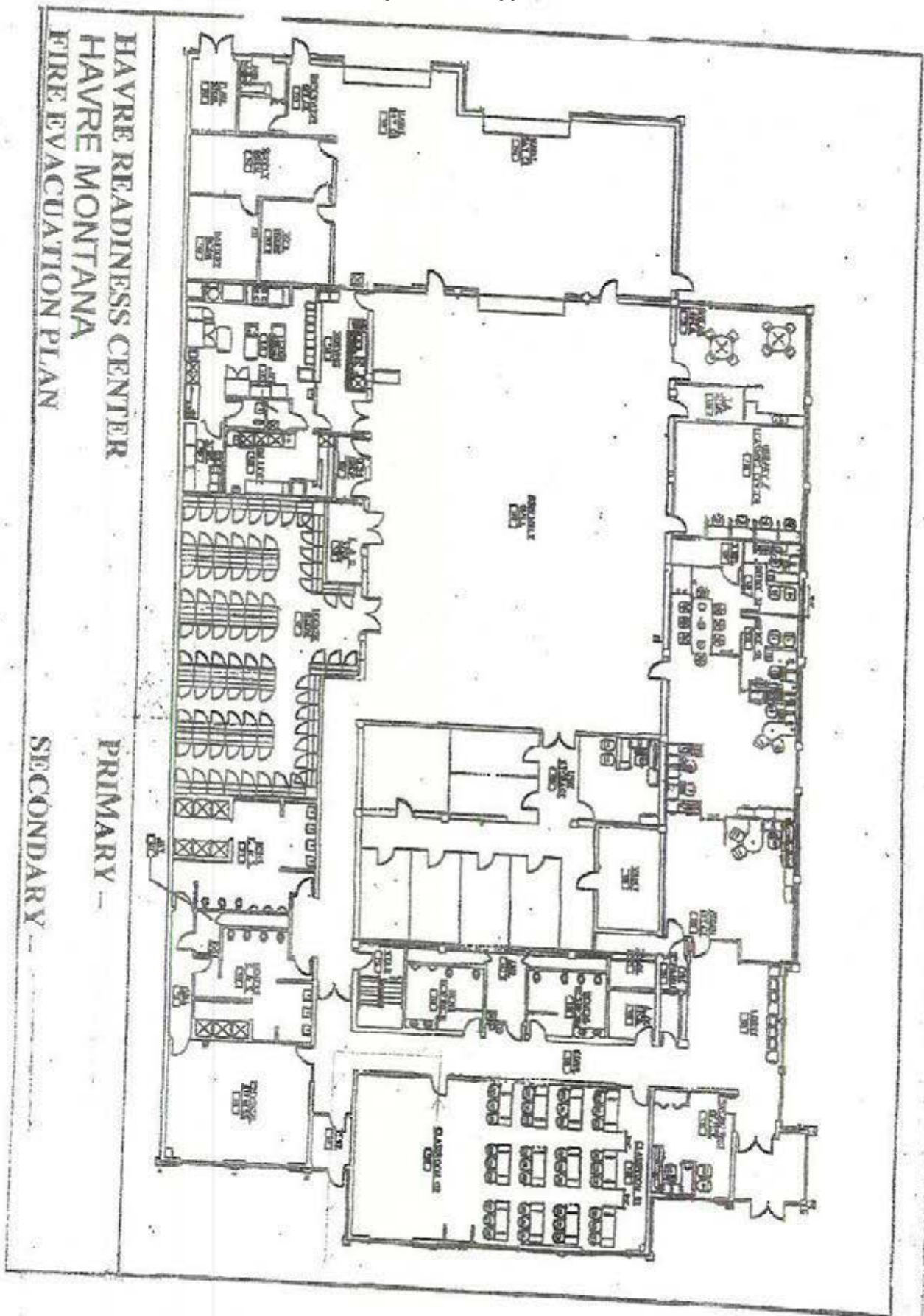
**Photo 6:** Lead sample 10212-Havre-05 which was taken from the floor in the gym area.

**PHOTO LOG  
HAVRE ARMORY  
HAVRE, MONTANA  
OCTOBER 02, 2012**



**Photo 7:** Lead sample 10212-Havre-06 which was taken from the hallway entrance to the Drill Floor.





**IAQ MEASUREMENTS**  
**HAVRE ARMORY**  
**HAVRE, MONTANA**  
**OCTOBER 02, 2012**

Building	Location	CO <sub>2</sub> max permissible level 1,035 ppm	Temperature permissible range 68 - 75°F	RH% permissible range 30-60%	CO max permissible range 200 ppm.
Armory	Classroom #108 at desktop	390	69	36.6	1
Armory	Lobby	386	70.2	35.8	1
Armory	Hallway by restrooms	651	71.0	37.0	1
Armory	Hallway at Drill Floor entrance	636	71.0	35.2	1
Armory	Room #112, Physical Fitness	549	70.8	34.7	1
Armory	Room #109 Classroom	382	69.6	33.3	1

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

ppm = Parts per million

°F = Fahrenheit

RH% = Relative humidity percentage

CO = Carbon monoxide

**ILLUMINANCE SURVEY  
HAVRE ARMORY  
HAVRE, MONTANA  
OCTOBER 02, 2012**

Building	Location	Light – FC*	Minimum Lighting Requirement Level - FC
Armory	Classroom #108 at desktop	89.9	50
Armory	Room #109 desktop at computer station	58	50
Armory	Lobby Entrance	78.3	10
Armory	Lobby at Guest Chairs	91.3	10
Armory	Hallway at Entrance to Room #108	83.0	10
Armory	Room #112 Physical Fitness Area	70.1	30
Armory	Hallway at Entrance to Drill Floor	64.4	10

\*FC = foot candle measurement



10/2/12 - Havre

BEST AVAILABLE COPY

*Handwritten:* ~~Handwritten~~

~~Handwritten~~ ~~Handwritten~~

**Non-Responsive**

Lead Wipe Sample #

Location

10212-Havre-01

Lobby Entrance @ door

10212-Havre-02

Lobby Entrance @ chair

10212-Havre-03

Lobby-Entrance to office

10212-Havre-04

**Non-Responsive**

10212-Havre-05

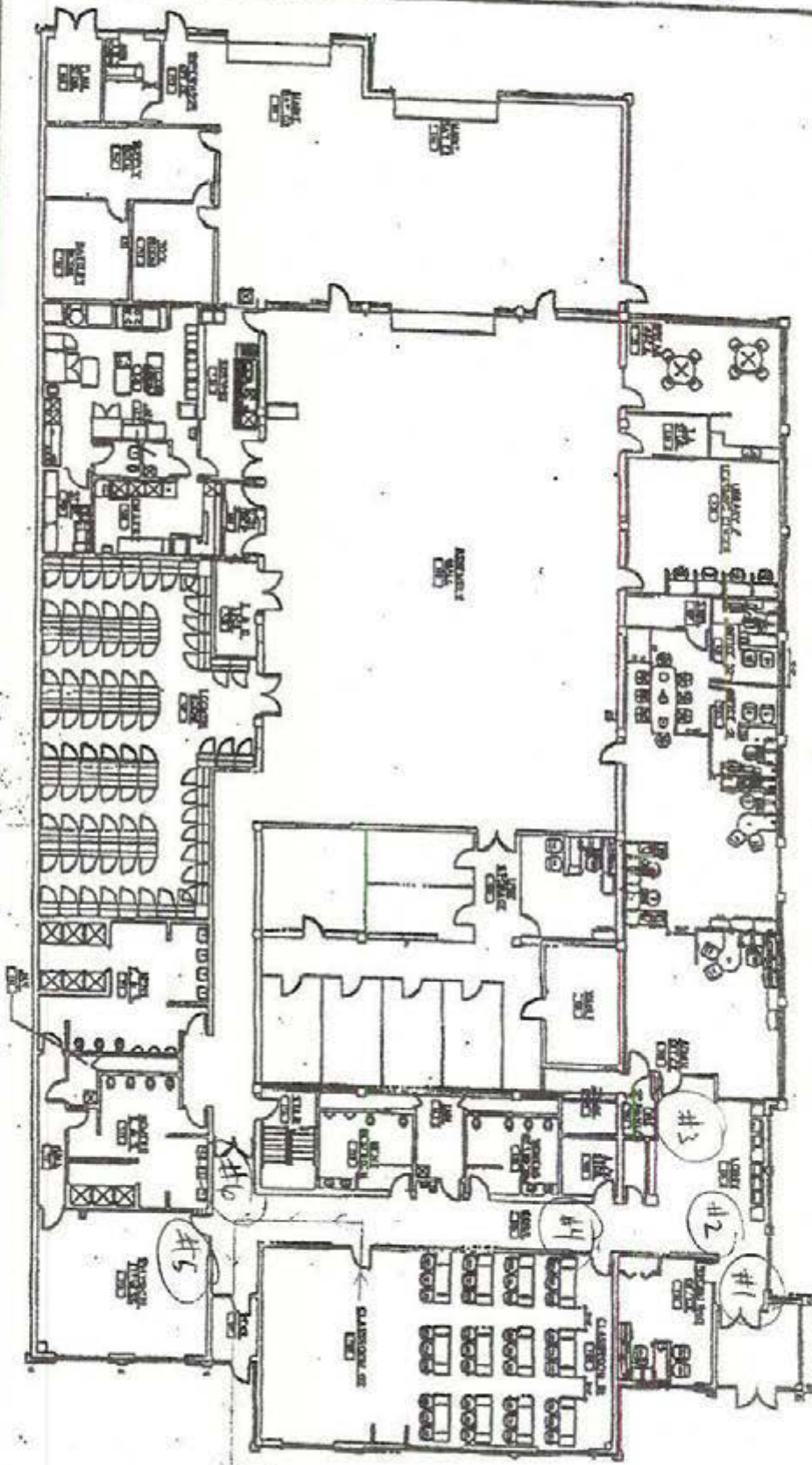
gym door entrance

10212-Havre-06

Hallway-entrance to drill floor

HAYRE READINESS CENTER  
HAYRE MONTANA  
FIRE EVACUATION PLAN

PRIMARY -  
SECONDARY -



Lead Wire Sample Locations

Hayre Atomics O13.1H174.61

10/2/2012

Name:

Date:

NES Job Number:

HAPE Armory 10/2/12 IAQ Data 0151H1374.61

Building	Location	CO <sub>2</sub>	Temp	RH %	CO
Armory	Classroom 109	390	69°F	36.6	1
	Library	386	70.2°F	35.8	1
	Hallway @ Restrooms	651	71.0°F	32.0	1
	Hallway @ Drill Floor	636	71.0°F	35.2	1
	Rm #112 physical Fitness	549	70.8°F	34.7	1
	Rm #109 Classroom	382	69.6°F	33.3	1
✓					

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



Name:

Date:

NES Job Number:

## Light Survey

Building	Location	Light - ft/c
Armon	Rm # 108 @ Desk Classroom top	89.4 f/c
	Rm # 109 @ Computer Classroom	58.0 f/c
	Lobby entrance	78.3 f/c
	Lobby @ Chairs	91.3 f/c
	Hallway @ Rm # 108 entrance	83.0 f/c
	Rm # 112 Physical fitness	70.1 f/c
	Hallway @ Pill Floor	64.4 f/c

# **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)	No Access —
Are any weapons cleaned in the facility, if yes where are they cleaned?	Yes, Drill floor
Additional lead wipe samples taken from 25% of the rest of the building - (on floor areas only)	✓ 01-06 01 - Hallway/Lobby 02 " " 03 " " 04 " " 05 - Gym 06 - Hallway to Drill floor
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?	NO
Any suspected ACM? Where and what condition is it in. Bulk sample if able.	<del>NO</del> NO
Quality of housekeeping	Great
HVAC maintenance plan in place?	Yes, though State
Overall condition of HVAC system	Working Condition
Obtained CO2, Temp, RH monitoring	✓ Attached
HAZMAT inventory on hand (make copies for the report), MSDS available for all materials.	Unavailable
HAZMAT storage, Condition of lockers, if outside storage building is used is it ventilated and does it meet OSHA standards.	Unavailable

Fire alarm in working condition - -not usually in place in older armories	✓
Fire extinguishers in place and properly identified and mounted	✓
Evidence of monthly fire extinguisher inspections	✓ Not Current - but evidence missing August / September
Annual fire extinguisher inspections tags current	Due in Feb 2013
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>	✓
Training programs in place; Hazcom, Respiratory Protection, Confined Spaces, Hearing conservation, PPE (if applicable)	N/A
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	No Access
Check building occupancy 1. How many military personnel, how many civilian personnel 2. What types of units occupy facility, i.e. Administrative, Maintenance, etc.?	<b>Non-Responsive</b> ② Supply unit
Any civilian activities in armory (club scouts, classes, day care, parties etc)	No
Obtain two lead air samples	On IHSW Request Only



Evaluate Kitchen Stove Hood Flow if Present IAW NFPA Standard 96.	N/A
Collect Source Noise Measurements of Kitchen Appliances and Document Using DD 2214	N/A
Conduct a safety walkthrough of entire facility document any safety deficiencies found.	
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	Have Answer <b>Non-Responsive</b>
(Add Checklist to Report)	(Add Checklist to Report)

1050 2nd W Street #  
Spring Unit

**Non-Responsive**



## Certificate of Calibration

Certificate No: 1095258 CDF020012

Submitted By: IHSW-NGB  
10510 SUPERFORTRESS AVE.  
MATHER, CA 95655

Serial Number: CDF020012  
Customer ID:  
Model: 2900 SLM

Date Received: 3/28/2012  
Date Issued: 3/29/2012  
Valid Until: 3/29/2013

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:  
MICROPHONE QE 7052 1/2 IN. ELECTRET  
TYPE 2 PREAMP

Serial Number:  
25923  
N/A

Calibration Procedure: 56V996

Reference Standard(s):

I.D. Number	Device
ET0000453	FLUKE 45 MULTIMETER
ET0000556	B&K ENSEMBLE

Last Calibration Date	Calibration Due
3/2/2011	3/2/2013
4/27/2011	4/27/2012

Measurement Uncertainty:

+/- 2.2% ACOUSTIC (0.19dB) +/- 1.4% VAC +/- 0.1% VDC  
Estimated at 95% Confidence Level (k=2)

Calibrated By:

**Non-Responsive**

3/29/2012

Reviewed/Approved By:

3/29/2012

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 Quest Technologies.



## Certificate of Calibration

Certificate No: 1095258 CDF020012

(A) indicates out of tolerance condition

Test Type	Nominal	Tolerance-	Tolerance+	As Found	As Left	Unit
Calibration	110.0	109.5	110.5	110.1	110.0	dB
A Weighting/125Hz	93.9	92.4	95.4	94.4	94.3	dB
A Weighting/250Hz	101.4	99.9	102.9	101.8	101.7	dB
A Weighting/500Hz	106.8	105.3	108.3	107.0	106.9	dB
A Weighting/1kHz	110.0	109.5	110.5	110.1	110.0	dB
A Weighting/2kHz	111.2	109.2	113.2	111.5	111.4	dB
C Weighting/125Hz	109.8	108.3	111.3	110.6	110.5	dB
C Weighting/250Hz	110.0	108.5	111.5	110.7	110.5	dB
C Weighting/500Hz	110.0	108.5	111.5	110.5	110.3	dB
C Weighting/1kHz	110.0	109.5	110.5	110.2	110.1	dB
C Weighting/2kHz	109.8	107.8	111.8	110.2	110.1	dB
Lin Weighting/125Hz	110.0	108.5	111.5	110.8	110.7	dB
Lin Weighting/250Hz	110.0	108.5	111.5	110.7	110.6	dB
Lin Weighting/500Hz	110.0	108.5	111.5	110.5	110.4	dB
Lin Weighting/1kHz	110.0	109.5	110.5	110.2	110.1	dB
Lin Weighting/2kHz	110.0	108.0	112.0	110.4	110.3	dB
Lin/60 - 120/120	120.0	118.8	121.2	120.6	120.5	dB
Lin/60 - 120/110	110.0	109.5	110.5	110.1	110.0	dB
Lin/60 - 120/100	100.0	98.8	101.2	99.9	99.8	dB
Lin/60 - 120/90	90.0	88.8	91.2	90.0	89.9	dB
Lin/40 - 100/90	90.0	88.8	91.2	89.8	89.8	dB
Lin/40 - 100/80	80.0	78.8	81.2	79.9	79.8	dB
Peak/60 - 120/120	123.0	121.5	124.5	122.2	122.0	dB
Peak/60 - 120/110	113.0	111.5	114.5	113.1	112.9	dB
Peak/60 - 120/100	103.0	101.5	104.5	103.0	102.8	dB
Peak/60 - 120/90	93.0	91.5	94.5	93.1	93.0	dB
DC Out/120dB	1.000	0.950	1.050	1.008	1.005	VDC
AC Out/120dB	3.160	2.920	3.430	3.252	3.196	VAC

\* indicates non accredited





# 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
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**Service Information:**

Purchase Order

CO **Non-Responsive**

Purchase Order Date

05/26/2012

**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	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	4301 (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	12-15-11	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

C 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: f/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	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

ENC 10: CERT\_DEFAULT



# Tektronix

Service Solutions

## Certificate of Calibration



6209119

Certificate Page 1 of 1

Company ID: 607229

INDUSTRIAL HYGIENE SW

Non-Responsive

10510 SUPERFORTRESS AVE SUITE  
MATHER, CA 95655

### Instrument Identification

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 Rep

Non-Responsive

### Calibration Standards

NIST Traceable#	Inst. ID#	Description	Manufacturer	Model	Cal Date	Date Due
1700230620	17-1001070	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: 800-438-8185 - Fax: 407-678-4854



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 #
CC0105	MULTIFUNCTION PROCESS CALIBRATOR	726	1355148	FLUKE	Nov 5, 2013	2008120211043
J2270	LASER PARTICLE COUNTER	200L-1-115-1	90058751A	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

Non-Responsive

Calibrating Technician:

QC Approval:

Non-Responsive

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

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

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



**TABLE 1**  
**LEAD WIPE SAMPLE RESULTS**  
**HAVRE ARMORY**  
**HAVRE, MONTANA**  
**OCTOBER 02, 2012**

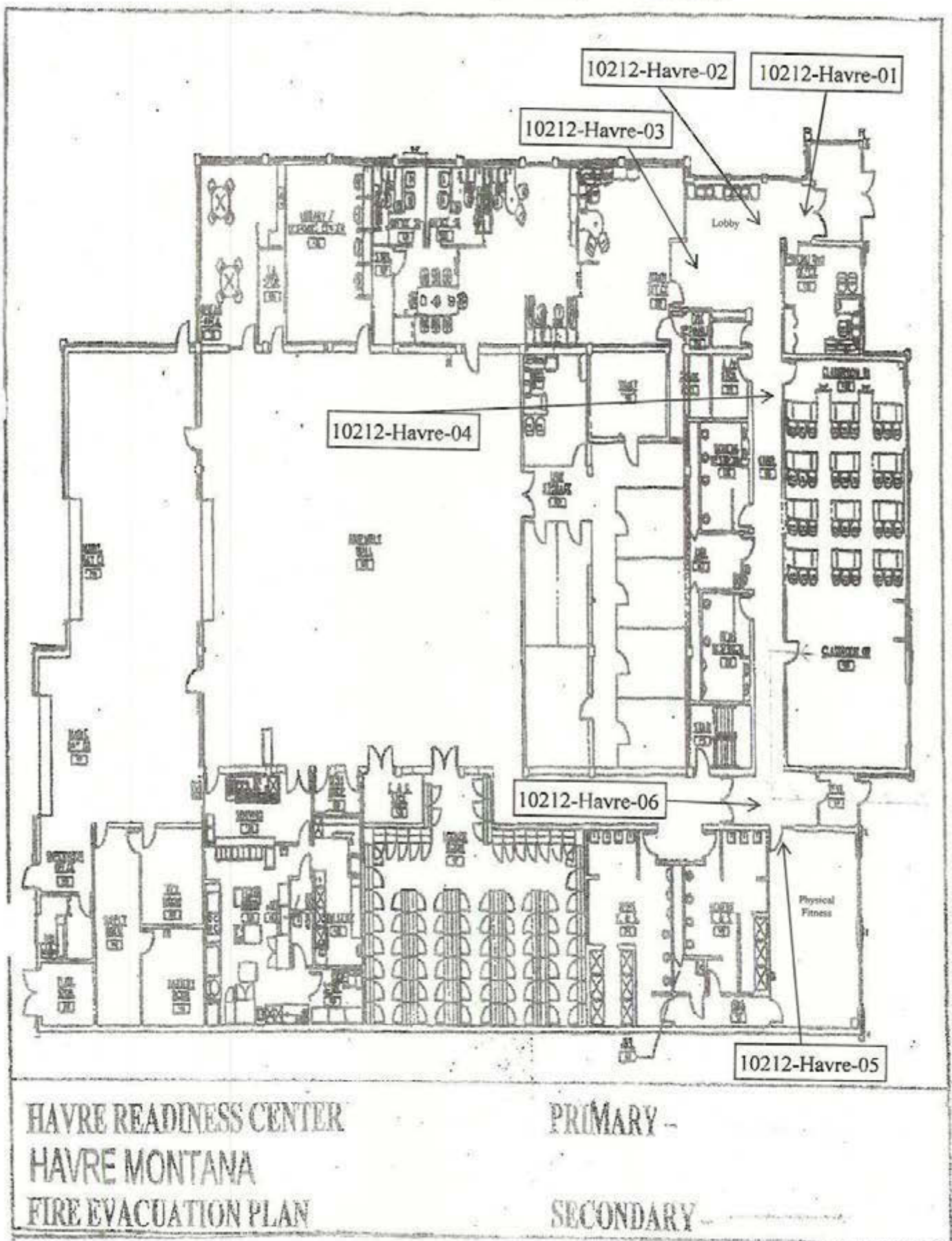
Sample Number	Sample Area	Sample Location	Results ( $\mu\text{g}/\text{ft}^2$ )	ARNG Standard
10212-Havre-01	Lobby entrance	Lobby entrance at the front door	< 2.5	< 40 $\mu\text{g}/\text{ft}^2$
10212-Havre-02	Main Lobby	Lobby at the waiting area in front of the chairs	< 2.5	< 40 $\mu\text{g}/\text{ft}^2$
10212-Havre-03	Recruiter Office	Main lobby at the door entrance into the recruiters office	< 2.5	< 40 $\mu\text{g}/\text{ft}^2$
10212-Havre-04	Main Hallway	Main hallway at the classroom door entrance	< 2.5	< 40 $\mu\text{g}/\text{ft}^2$
10212-Havre-05	Gym	Gym area floor sample near door	2.5	< 40 $\mu\text{g}/\text{ft}^2$
10212-Havre-06	Hallway	Door entrance to the drill floor	< 2.5	< 40 $\mu\text{g}/\text{ft}^2$

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



Havre Armory- Lead Wipe Sample Locations

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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: **34-1228527**

Client Project ID: 013.IH1374.61/Havre, MT

Purchase Order: 013.IH1374.61

Project Manager: **Non-Responsive**

## Analytical Results

Sample ID: <b>10212-Havre-01</b>	Media: Ghost Wipe	Collected: 10/02/2012
Lab ID: 1228527001	Sampling Location: Havre, 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	<2.5	<2.5 2.5

Sample ID: <b>10212-Havre-02</b>	Media: Ghost Wipe	Collected: 10/02/2012
Lab ID: 1228527002	Sampling Location: Havre, 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	<2.5	<2.5 2.5

Sample ID: <b>10212-Havre-03</b>	Media: Ghost Wipe	Collected: 10/02/2012
Lab ID: 1228527003	Sampling Location: Havre, 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	<2.5	<2.5 2.5

Sample ID: <b>10212-Havre-04</b>	Media: Ghost Wipe	Collected: 10/02/2012
Lab ID: 1228527004	Sampling Location: Havre, 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	<2.5	<2.5 2.5

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

ALS GROUP USA, CORP. Part of the ALS Laboratory Group A Campbell Brothers Limited Company

Environmental

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER





## ANALYTICAL REPORT

Workorder: 34-1228527

Client Project ID: 013.IH1374.61/Havre, MT

Purchase Order: 013.IH1374.61

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.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/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.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.





1728527

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

DATE \_\_\_\_\_  
CONTACT ALS SALT LAKE PRIOR TO SENDING SAMPLES

2. Date 10/2/2012 Purchase Order No. 013.141374.61

3. Company Name NES

Address 1141 Sidney Street

4. Quote No.

ALS Project Manager *Stella*

## 5. Sample Collection

Sampling Site Harpe, MT

Industrial Process National Guard Armory

Date of Collection 10/7, 112

Time Collected 9:15 AM

Date of Shipment 10/9/12

Chain of Custody No.

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. 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

7. Chain

Relinquist

Received

Relinquish

Received

Date/Time 10/9/12 12:00 PM

Date/Time 10/9/12 2:43 PM

Date/Time

Date/Time 10/11/12 0915

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

LS Environmental

Non-Responsive

## Employee List

[illegible]

Industrial Hygiene, Southwest Hazard Inventory Log Havre Armory - MT									
CONTROL NUMBER	HAZARD DESCRIPTION	SITE	RAC	HAZARD COUNTERMEASURE	SUSPENSE DATE	ACTION OIC/NCOIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
POSED [X]									
MTHA-100212-4.11.2	No documented evidence of monthly fire extinguisher inspections	Armory	4	Fire extinguishers should be inspected monthly. Monthly inspections should be documented on the fire extinguisher.					29 CFR 1910.157(e)(3)
MTHA-100212-4.8	No safety training or record keeping.	Armory	4	A written HAZCOM Program should be implemented.					29 CFR 1910.1200(e); NGR 385-10, Ch. 6-4(e)
MTHA-100212-4.4	No Asbestos documentation on file at the Armory	Armory	3	Consult with a Montana state-certified inspector to inspect the facility for any ACM. If there is asbestos located in the building then a Operations & Maintenance Plan must be written and communicated to personnel working at the facility.					29 CFR 1910.1001(b) & 29 CFR 1926.1101



## **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 Havre 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 Evaluations).
- N4.4 Asbestos Documentation** – Personnel at the Armory should acquire documentation from the contractor or have the building surveyed for asbestos by a Montana state-certified asbestos inspector. If there is asbestos located in the building then an Operations & Maintenance Plan needs to be written and communicated to employees working at the facility.
- N4.8 Safety Training and Record Keeping** – No training records or training documents could be provided during the IHSAV. A written HAZCOM program should be implemented at this facility.
- N4.9 Ventilation Survey** – If there is a stove hood in the kitchen, it should be evaluated by an Industrial Hygienist to have flow measurements taken.
- N4.11 Safety Walk-Through** – There was no documented evidence for monthly inspections on all of the fire extinguishers.

## *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.



## 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)	No Access to the Drill Floor. Other areas were sampled from floor surface areas.
Are any <b>weapons cleaned</b> in the facility, if yes where are they cleaned?	Yes, weapons are cleaned on the Drill Floor.
Additional <b>lead wipe</b> samples taken from 25% of the rest of the building -- <b>(on floor areas only)</b>	A total of 6 lead wipe samples were collected at the Havre Armory from the main hallway, lobby and gym area.
Is there a <b>converted indoor firing range</b> ? If so collect additional wipe samples IAW the SOW.	There is no converted indoor firing range at the Havre Armory.
Is there any peeling paint? 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.
Quality of housekeeping	Great. Clean facility.
HVAC maintenance plan in place?	Yes, through State.
<b>Overall condition</b> of HVAC system	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.	Unavailable to obtain during the IHSAV.
<b>HAZMAT storage</b> , Condition of lockers, if outside storage building is used is it ventilated and does it meet OSHA standards.	Unavailable to be inspected during the time of the IHSAV.

<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>	Not current as of July 2012.
<b>Annual</b> fire extinguisher inspections tags current	Current. Annual inspection 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)	Not applicable to this facility.
<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)	N/A.
Any Photo labs	N/A.
Any hazardous <b>noise</b> sources	No hazardous high noise areas were identified during the visit.
<b>Light</b> levels checked throughout building	Attached to report.
<b>Breaker</b> panels properly labeled with no exposed wiring	No access to beaker panels during the IHSAV.
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. 1 full time military, 0 civilian. 2. Supply Unit.
Any <b>civilian</b> activities in armory (cub scouts, classes, day care, parties etc)	No.
Obtain two <b>lead</b> air samples	On IHSW Request Only

Evaluate Kitchen Stove Hood Flow if Present IAW NFPA Standard 96.	No access to kitchen during the time of the IHS AV.
Collect Source Noise Measurements of Kitchen Appliances and Document Using DD 2214	No high noise/ hazardous noise areas were identified during the IHS AV.
Conduct a safety walkthrough of entire facility document any safety deficiencies found.	Done
<b>Take photos</b> 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)	Havre Armory <b>Non-Responsive</b> 406-265-3444 1050 2 <sup>nd</sup> W Street Havre, MT Supply Unit  (Add Checklist to Report)



# FY 11 Installation Status Report (ISR) Services Documentation

Breathing Zone samples collected above Occupational Exposure Limit (OEL), with no controls	Intellicode	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	953-01-05				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	953-01-06				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	953-01-07				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	953-01-08				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	953-01-09				0
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	953-02-10	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	953-02-11	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	953-02-12	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				0
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				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			0
Number of design review packages which required IH evaluation and recommendations applicable to occupational health concerns	953-02-20	IHT			0

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OCT 3, 2014



## ARMY NATIONAL GUARD INDUSTRIAL HYGIENE - SOUTHWEST

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

# Industrial Hygiene Site Assistance Visit

**Havre Armory**  
**1050 2<sup>nd</sup> Street**  
**Havre, MT 59501**

10510 Superfortress Avenue, Suite C, Mather, CA 95667

(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

9 July 2015

MEMORANDUM THRU Montana Army National Guard, ATTN: [REDACTED] (DSS), 1956  
Mt. Majors St., Room 1009, Helena, MT 59636

FOR Commander, Havre Armory 1050 2<sup>nd</sup> Street, Havre, MT 59501

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for Havre Armory 1050 2<sup>nd</sup> Street, Havre, MT on 03 OCT 2014.

1. References. See survey report.

2. General.

a. At the request of the NGB Industrial Hygiene, Southwest (IHSW) Region, an Industrial Hygiene Site Assistance Visit and cursory review of safety related items and programs was conducted at the Havre Armory 1050 2<sup>nd</sup> Street, Havre, MT on 03 OCT 2014.

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

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

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

3. Findings. See survey report.

4. Commendable.

a. [REDACTED] reserve accolades for their assistance provided during this IHSAV. They were cooperative with questions asked, knowledgeable in site work processes, and provided assistance obtaining information. The details within this report are a direct result of the assistance provided by the Armory personnel.

5. Observations / Recommendations.

**ARNG-CSG-P**

**SUBJECT:** Executive Summary for Industrial Hygiene Site Assistance Visit (IHS AV) for Havre Armory 1050 2<sup>nd</sup> Street, Havre, MT on 03 OCT 2014.

**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. Personnel should continue to maintain the facility areas, especially after weapons cleaning activities, to ensure surface lead concentrations are maintained as clean as practical. It is important for personnel to clean areas after all weapons cleaning activities, all surfaces, e.g. table tops, desks and floors. Designate tables used for weapons cleaning by labeling "For Weapons Cleaning Only". Do not dry sweep areas. All perishable cleaning products/equipment (i.e. rags, towels, etc.) should be properly disposed of after use. (reference DODI 6055.01 Appendix to Enclosure 4 (date 14 OCT 2014), 29 CFR 1910.1025 (h)(1)) (Exec. Summary) **(RAC NOT ASSIGNED)**

b. The facility's chemical inventory and safety data sheet (SDS) are maintained within Janitors Closet, dated 1 JAN 13. (para. 7.1) **(RAC 4)**

(1) Recommendation. Assemble a current chemical inventory list and acquire all current SDS's for the hazardous materials used in this facility. Develop and implement a written Hazard Communication Program (HazCom) which should include, as a minimum, training that is documented in personnel's records at this facility.

c. During this IHS AV an Asbestos Containing Material (ACM) Management Plan could not be located. The survey may have been completed, however, at the time of this assistance visit, awareness training, ACM identification, or the ACM Management Plan was not available. (para. 5.3) **(RAC 3)**

(1) Recommendation. Conduct a facility survey to identify Asbestos Containing Material (ACM) within the facility and develop an ACM Management Plan. Conduct awareness training to all personnel who occupy the facility regarding the findings and the ACM Management Plan.

d. Electrical power strips within the Classroom plugged into each (daisy chained) creating a potential electrical hazard. (para. 7.4.2 and 7.4.3) **(RAC 4)**

(1) Recommendation. Ensure power strips are plugged directly into an appropriate outlet. If necessary, increase the number of outlets to meet electrical demands. Do not use extension cords for permanent use. If extension cords must be used, ensure they are deployed in a fashion not to create an additional hazard (slips, trips, and falls).

e. RECURRING OBSERVATION. Multiple fire extinguishers missing documentation of monthly inspections. Extinguishers should be inspected monthly to ensure they are ready for use in an emergency. (para. 7.4.3) **(RAC 3)**



**ARNG-CSG-P**

**SUBJECT:** Executive Summary for Industrial Hygiene Site Assistance Visit (IHS AV) for Havre Armory 1050 2<sup>nd</sup> Street, Havre, MT on 03 OCT 2014.

(1) Recommendation. Conduct annual and monthly inspections on all fire extinguishers found at this facility, record on the tag attached to each fire extinguisher. Ensure all fire extinguishers are properly mounted.

**6. Violation Correction Log.**

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

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

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

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

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

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

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

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

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

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

## ARNG-CSG-P

**SUBJECT:** Executive Summary for Industrial Hygiene Site Assistance Visit (IHS AV) for Havre Armory 1050 2<sup>nd</sup> Street, Havre, MT on 03 OCT 2014.

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).

**NOTE:** The enclosed Hazard Assessments can be used for monthly meetings to brief/train, and document large group training events and activities, 5 Minute Training Topic.

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**  
**Have Armory, MT**

CONTROL NUMBER <input type="checkbox"/> CLOSED		HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/NCIC	Estimated Cost(s)	DATE CORRECTED	REFERENCE
MTHA-100314-5.3		Suspected Asbestos- Containing building materials; inspection, re-inspection, & Hazard Management Plan	Facility	3	Conduct a facility survey to identify Asbestos Containing Material (ACM) within the facility and develop an ACM Management Plan. Conduct awareness training to all personnel who occupy the facility regarding the findings and the ACM Management Plan.					AR 420-1 5-24b, c, & e
MTHA-100314-7.1		Chemical inventory and safety data sheet is maintained within the Janitors Closet.	Facility	4	Assemble a current chemical inventory list and acquire all current SDS's for the hazardous materials used in this facility. Develop and implement a written Hazard Communication Program (HazCom) which should include as a minimum, training that is documented in personnel's records at this facility					29 CFR 1910.1200 (h)
MTHA-100314-7.4.2		Misuse of extension cords and (daisy chaining) of power strips	Classroom	4	Ensure power strips are plugged directly in an appropriate outlet. If necessary, increase the number of outlets to meet electrical demands. Do not use extension cords for permanent use. If extension cords must be used, ensure they are deployed in a fashion not to create and additional hazard (slips, trips, falls).					29 CFR 1910.22(b)(1) NFPA 704 08(1) & NFPA 400-7(b)

BEST AVAILABLE COPY





**Industrial Hygiene Southwest**  
*Violation Inventory Log*  
**LOG OF SCHEDULE OF CORRECTIVE ACTION - COMPLIANCE WITH SAFETY AND HEALTH STANDARDS**  
**Have Armory, MT**

CONTROL NUMBER	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/NCIC	Estimated Cost(s)	DATE CORRECTED	REFERENCE
RECURRING OBSERVATION: MTHA-100314-7.4.3	Fire extinguisher(s) were missing inspection	Facility	3	Conduct annual and monthly inspections on all fire extinguishers at this facility, record on the tag attached to each fire extinguisher. Ensure all fire extinguishers are properly mounted.					29 CFR 1910.157(e)

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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.

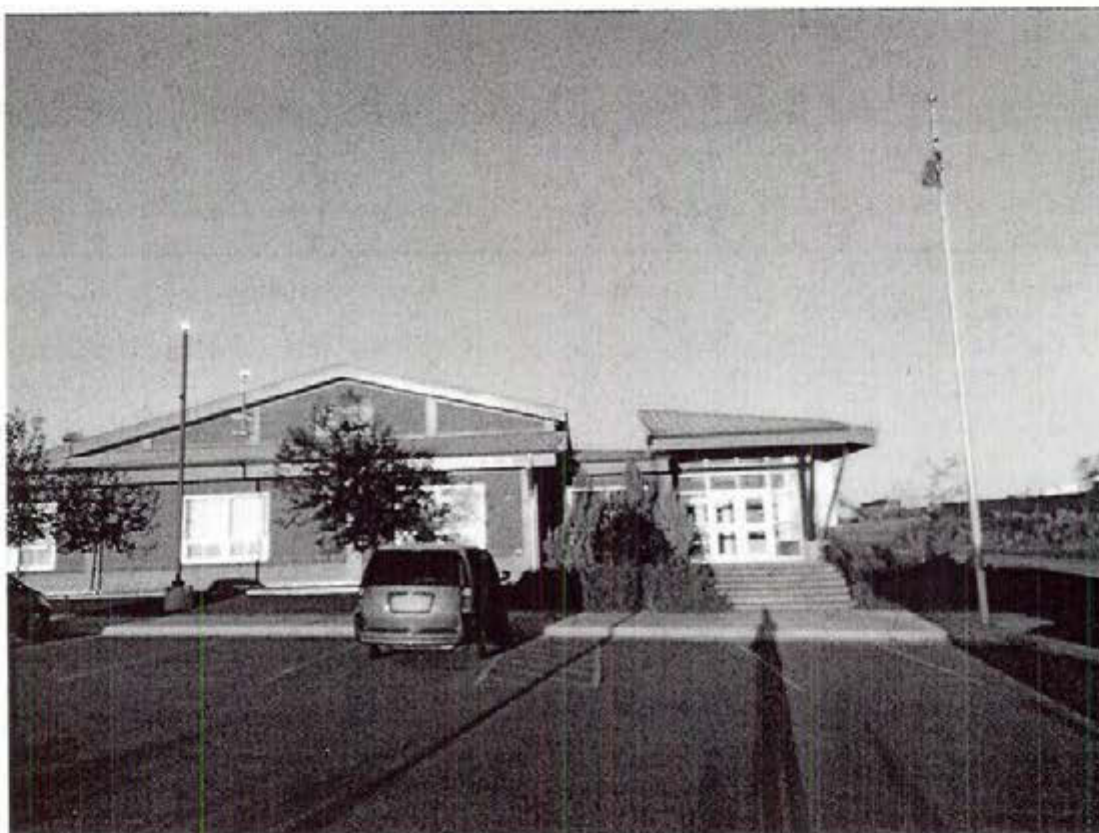
**NOTE:** Clearance sampling/testing is to be accomplished by certified personnel after these cleanup procedures are followed. If the area is an average Armory, occupied by adults only, for which you are cleaning and **is not a Converted IFR space**, you may continue to utilize the Armory space before 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  
Havre Armory  
Havre, Montana  
October 3, 2014**







INDUSTRIAL HYGIENE SITE ASSISTANCE VISIT (IHSAV)

HAVRE ARMORY  
1050 2<sup>ND</sup> STREET WEST  
HAVRE, MT 59501

October 3, 2014

*Prepared for:*  
Industrial Hygiene Southwest  
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*Prepared by:*  
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Non-Responsive

Industrial Hygiene Specialist

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Principle-In-Charge



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## EXECUTIVE SUMMARY

On October 3, 2014, **Non-Responsive** Industrial Hygiene Specialist with Network Environmental Systems, Inc. (NES), conducted an Industrial Hygiene Site Assistance Visit (IHSAV) at the Havre Armory located at 1050 2<sup>nd</sup> Street West in Havre, Montana. The primary point of contact (POC) for information gathered during this survey was **Non-Responsive** **Non-Responsive** who may be reached by phone at (406) 324-5566 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** deserve accolades for assisting with this IHSAV. **Non-Responsive** is skilled, knowledgeable in site work processes, and provided assistance obtaining information. The details within this report are a direct result of the assistance provided by the Armory personnel.

## 1.0 INTRODUCTION

On October 3, 2014, **Non-Responsive** Industrial Hygiene Specialist with NES, conducted an IHSAV at the Havre Armory located at 1050 2<sup>nd</sup> Street West in Havre, Montana. The primary POC for information gathered during this survey was **Non-Responsive** who may be reached by phone at (406) 324-5566 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 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 Havre Armory operated in a facility that consisted of the following: offices, drill floor, storage rooms, a classroom, weight room, and a kitchen. General administrative duties and recruiting activities were conducted in the offices. The facility was located south of U.S. Highway 2 Northwest, between County Road 651 West and 12<sup>th</sup> Avenue. There was an adjacent National Guard Firefighting facility to the east of the Armory facility. Vacant lots and farms were located to the north, south and west.

The facility was constructed in the 1980's, but the size of the facility was unknown. The facility was reportedly renovated in 2000. The primary unit assigned to the facility was the 639<sup>th</sup> CS Supply Company; no Unit Identification Code (UIC) was identified. There were a total of two (2) full time guard members assigned to the facility. The facility operates from 0800 to 1700. A copy of the employee list is provided in Appendix K.

NES had conducted one (1) previous IHSAB at the Havre Armory on 2 October 2014. No other records or IHSAB's were known to exist for this facility. NES reviewed a copy of the full report, including the Violation Inventory Log, for the previous IHSAB conducted. Three (3) issues were identified, including: fire extinguisher inspections not being performed, no documentation of asbestos building materials, and no safety training records on site.

During the Opening Conference meeting, NES was informed of the following:

- There was no indoor firing range (IFR) or converted IFR on site.
- Personnel reported that there are no civilian activities conducted within the facility.
- The drill floor was occasionally used by Army National Guard members as a staging area to clean weapons.



### 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 Gray Wolf IAQ Meter, model IQ-410. 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 Gray Wolf IAQ Meter, model IQ-410. 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**

Exhaust ventilation systems were assessed to determine their functionality and ability to sufficiently exhaust air and contaminants from the areas they operate within. Ventilation measurements were collected from the three (3) functioning kitchen canopy hoods. NES collected air velocity and flow measurements using a TSI VelociCalc, model 8384A. A copy of the annual calibration certificate for this instrument is located in Appendix H.



### 3.7 Personal Noise Dosimetry and Sound-Level Measurements

Personal noise dosimetry measurements were not collected during this IHS AV. However, 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
Gray Wolf IAQ	IQ-410	01-936	22 January 2014
Quest Sound Level Meter	SLM-2	BIH090008	27 November 2013
Quest Acoustic Calibrator	QC-10	QIH090203	27 November 2013
TSI VelociCalc Plus Meter	8384A	01080127	20 March 2014
Konica Minolta Light Meter	TL-1	90480819	2 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 conducted 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 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 938 ppm; therefore, the maximum indoor CO<sub>2</sub> concentration recommended by ASHRAE was 1,635 ppm. The CO<sub>2</sub> concentrations from inside the facility ranged between 853 and 998 ppm. The areas measured were within the ASHRAE recommended concentration.

ASHRAE recommends maintaining temperatures between 68 and 79°F and relative humidity below 65% to minimize the potential for growth of allergenic or pathogenic organisms. Temperatures inside the building ranged between 65 and 70°F. Relative humidity ranged from 24 to 27%. Several of the rooms measured were below the ASHRAE recommended ranges for temperature.

A table of the sample locations and summary of 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 eight (8) locations throughout the facility using a Gray Wolf IAQ Meter, model IQ-410. The concentration of CO inside the facility was 0.0 ppm consistently, close to outdoor background concentrations. These concentrations are also below the exposure limit ceiling of 200 ppm set forth by OSHA. A summary of CO measurements collected is provided in Appendix E.

### **4.4 Metal Wipe Sampling**

Wipe samples for lead dust were collected from horizontal surfaces in selected areas of the Havre Armory 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 nine (9) 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: drill floor, entryway, break room, kitchen and weight room. 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 Location	Sample Surface	Results ( $\mu\text{g}/\text{ft}^2$ )	ARNG/HUD Standard ( $\mu\text{g}/\text{ft}^2$ )
100314-HA-W-01	Drill Floor	North Corner, Floor	3.2	40
100314-HA-W-02	Drill Floor	East Corner, Floor	17	40
100314-HA-W-03	Drill Floor	South Corner, Floor	2.4	40
100314-HA-W-04	Drill Floor	West Corner, Floor	7.3	40
100314-HA-W-05	Drill Floor	Center, Floor	6.5	40
100314-HA-W-06	Entryway	Floor	<1.3	40
100314-HA-W-07	Break Room	Floor	<1.3	40
100314-HA-W-08	Kitchen	Floor	<1.3	40
100314-HA-W-09	Weight Room	Floor	1.9	40

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

The analytical results indicate acceptable lead concentrations in the 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

Air velocity measurements were taken from the three (3) functioning kitchen canopy hoods located above the serving area, dishwasher and sink. Measurements for the canopy hoods were collected in a grid pattern across the exhaust opening. The average airflow of the exhaust systems was calculated and ranged from 111 to 138 feet per minute. Air velocity for the canopy hoods were found to exceed the minimum of 50 fpm required in Section 4-9 of the U.S. Army Technical Manual (TM) 5-810-1: *"Mechanical Design: Heating, Ventilating, and Air Conditioning,"* dated, June 1991.

One (1) ventilation system, a hood located over the range, was not operational at the time of the IHS AV. Thus, functionality could not be assessed.

A summary of the ventilation measurements collected and calculations made are provided in Appendix F of this report.

#### 4.7 Personal Noise Dosimetry and Sound Level Measurements

Personal noise dosimetry was not performed during this IHS AV. Sound-level measurements were collected from three (3) work processes suspected to be Noise Hazardous. Measurements were recorded into the appropriate DD 2214 Forms. Copies of the completed DD 2214 Forms are provided in Appendix O of this report. A summary of measurements collected is provided in Table 2.

**Table 2:** Summary of sound level measurements

Location/Activity	Noise Source	Noise Level Measurement (dBA)
Kitchen Canopy Hood	Over Serving Area	65.3
	Over Dishwasher	60.1
	Over Sink	61.5

Sound level measurements were collected during the kitchen canopy hood operations were below 85 A-weighted decibels (dBA) and did not present a noise hazard.

## 9.0 PROJECT APPROVAL

This IHSAV was reviewed and approved by:

**Non-Responsive**

*Senior Industrial Hygienist*

February 24, 2015

Date

**Non-Responsive**

*Principal Investigator*

February 24, 2015

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



## 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), Various
- American National Standards Institute, Z358. 1-2009. 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
- AR 420-1, Army Facilities Management
- ARNG “Maintenance Shop Local Exhaust Ventilation Measurements”, issued by Non-Responsive Non-Responsive dated 14Nov2013,
- American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE), Various
- Corps of Engineers Guide Specification, CECS-1585 1, Overhead vehicle tailpipe (and welding fume) Exhaust Systems
- DA PAM 40-ERG, Ergonomics
- DA PAM 40-501, Hearing Conservation.
- MIL-STD-1472E, Illumination Level Standard
- NGR 385-15, National Guard Bureau, Policy and Responsibilities for Inspection, Evaluation and Operation of Army National Guard Indoor Firing Ranges, 3NOV2006
- OR 385-10, Army National Guard Safety and Occupational Health Program
- TB MED 503, The Army Industrial Hygiene Program
- 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
- Title 40, Code of Federal Regulations (CFR), Protection of Environment, Part 262, Standards Applicable to Generators of Hazardous Waste.
- TM 5-810-1, Department of the Army, Heating, Ventilating, and Air Conditioning, 15 June 1991

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

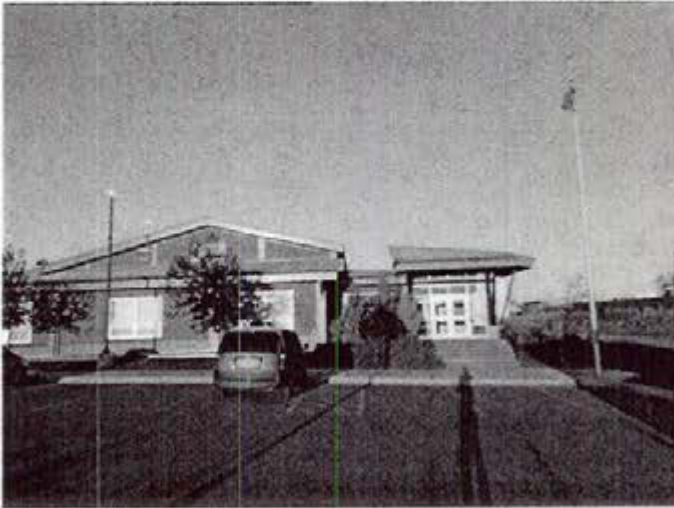
In accordance with the Department of the Army (DA) Pamphlet 40-503, Industrial Hygiene Program (DA PAM 40-503), "The DA mandates the use of ACGIH TLVs when they are more stringent than OSHA regulations or when there is no PEL." The DA defines the resulting exposure limit as the Occupational Exposure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



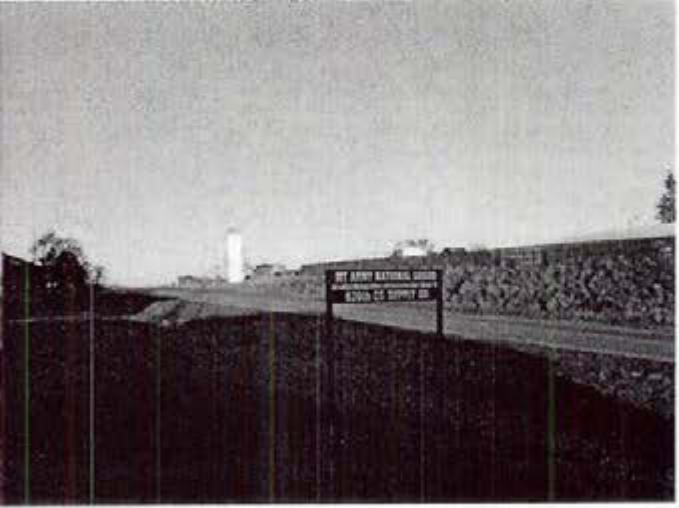
APPENDIX C

PHOTO LOG

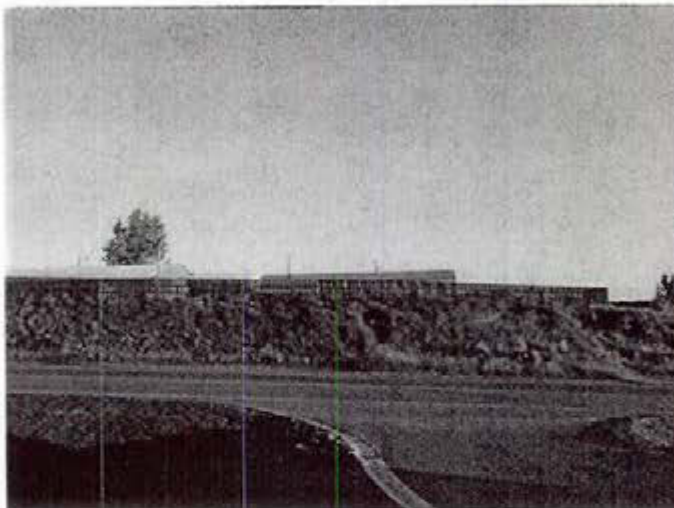
**PHOTO LOG  
HAVRE ARMORY  
HAVRE, MT  
OCTOBER 3, 2014**



**Photo 1: Front of Havre Armory; view to the west.**



**Photo 2: Facility signage; view to the northwest.**



**Photo 3: Adjacent vacant property; view to the north.**



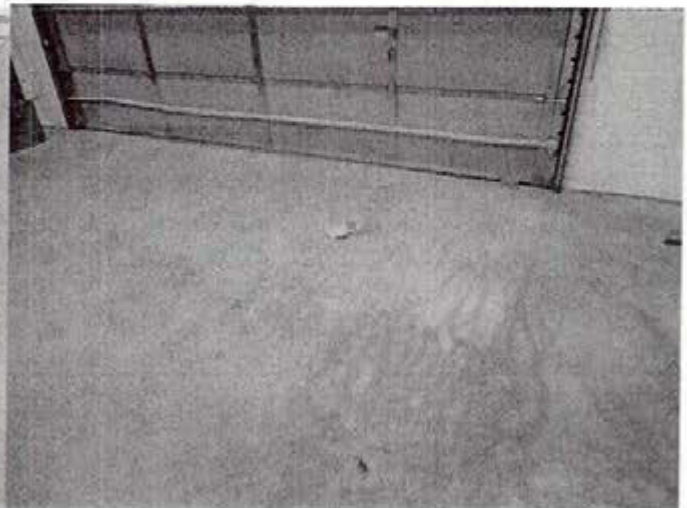
**Photo 4: Army National Guard Firefighting facility; view to the east.**



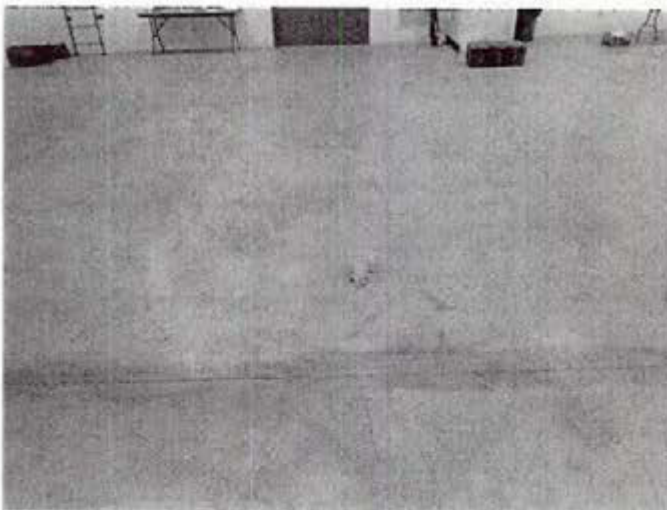
**PHOTO LOG  
HAVRE ARMORY  
HAVRE, MT  
OCTOBER 3, 2014**



**Photo 9:** Lead wipe sample (100314-HA-W-03) collected from the drill floor; south corner.



**Photo 10:** Lead wipe sample (100314-HA-W-04) collected from the drill floor; west corner.



**Photo 11:** Lead wipe sample (100314-HA-W-05) collected from the drill floor; center.



**Photo 12:** Lead wipe sample (100314-HA-W-06) collected from the entryway; floor.



PHOTO LOG  
HAVRE ARMORY  
HAVRE, MT  
OCTOBER 3, 2014



Photo 17: Non-operational kitchen canopy hood over range.



Photo 18: Kitchen canopy hood over serving area.



Photo 19: Kitchen canopy hood over dishwasher.



Photo 20: Kitchen canopy hood over sink.

APPENDIX D

CHEMICAL INVENTORY

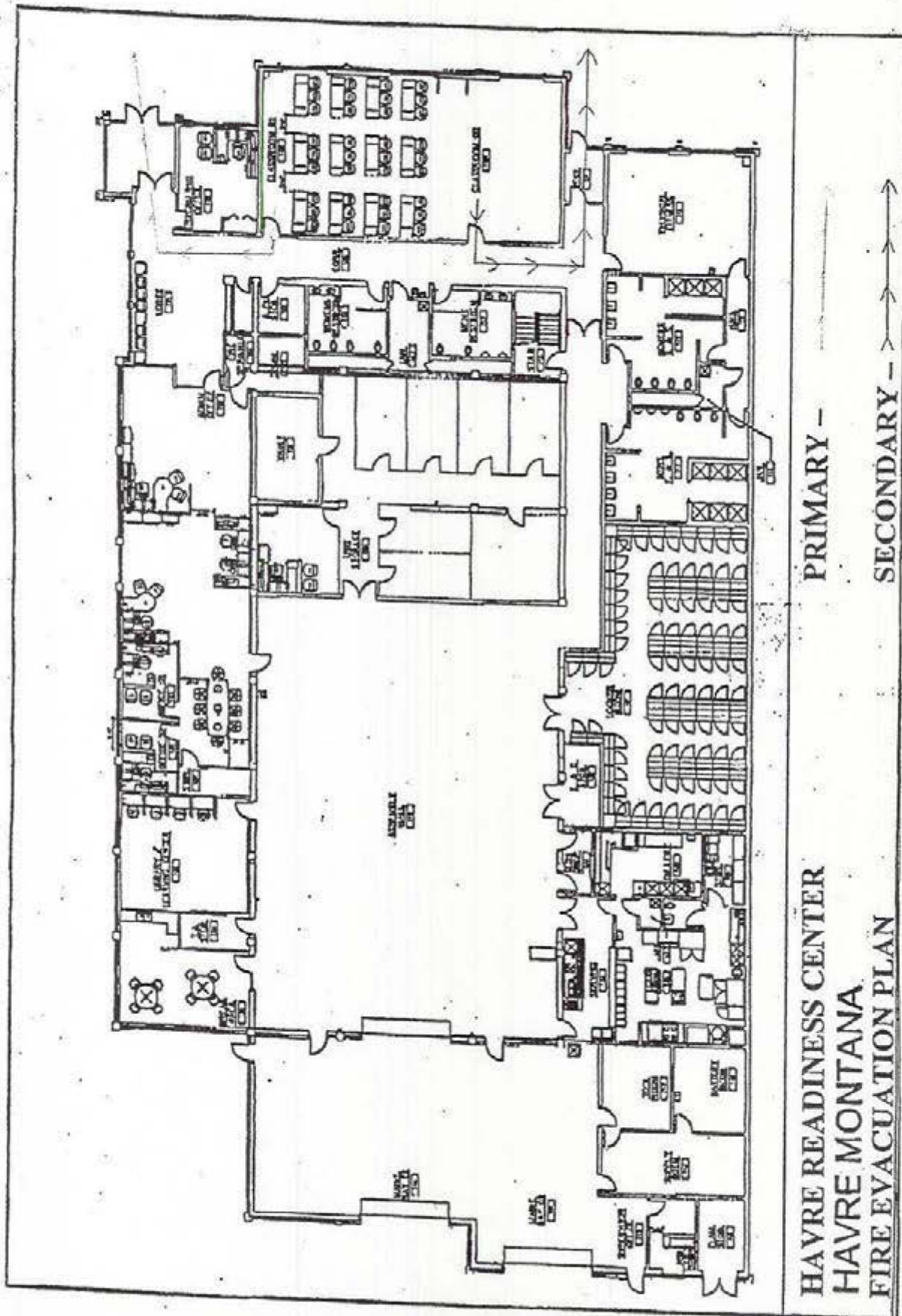


## Print Inventory

 Unit: 639th QM Supply  
Co (-)Storage: Janitorial Closet-  
FloorMonth:  
1/1/2013

SLN	Item	NSN	Manufacturer	MSDSID	Quantity	Unit of Issue	Shelf Life	HCC
01	Laminate Resurface Emulsion concentrate	LOCAL PURCHASE	Solar system		1	5 GAL	4	
02	Master Guard Latex Modified Asphalt Sealer	LOCAL PURCHASE	Conklin Company		2	5 GAL	4	
03	Sure Cure	LOCAL PURCHASE	Betco Corp		4	5 GAL	4	N1
04	Metalist Floor Finish	7930-00N0587	National Laboratories	CBBNM	1	5 GAL	4	N1





**ILLUMINATION SURVEY**  
**HAVRE ARMORY**  
**HAVRE, MT**  
**OCTOBER 2, 2014**

Room	Location	Light Measurement (FC)	Minimum Lighting Requirement (FC)
Entryway	Center of Entryway	75.9	$\geq 30$
108 Classroom	Desktop	52.2	$\geq 50$
Drill Floor	Center of Room	85.4	$\geq 30$
Kitchen	Center of Room	51.0	$\geq 30$
Locker Room	Center of Room	31.3	$\geq 30$
Break Room	Center of Room	64.2	$\geq 30$
Library/Learning Center	Desktop	50.7	$\geq 50$
Administrative Office	Desktop	66.4	$\geq 50$

\*FC = foot candle measurement

**Bold** = Insufficient Lighting



APPENDIX F

VENTILATION DATA



**Exhaust Ventilation System Survey****Facility: Havre Armory, MT****Date: October 3, 2014**Name of LEV System: Kitchen canopy hood over dishwasherModel: NASerial Number: NADimensions of LEV: 32" x 32"

Sketch of ventilation measurement grid; all measurements in feet per minute (fpm)

116	102	97
143	140	130
175	186	157

*Average Velocity* = 138 fpm*Calculated Airflow* = 984 CFM**NOTES:**Name of LEV System: Kitchen canopy hood over sinkModel: NASerial Number: NADimensions of LEV: 32" x 32"

Sketch of ventilation measurement grid; all measurements in feet per minute (fpm)

101	83	94
136	164	140
151	187	169

*Average Velocity* = 136 fpm*Calculated Airflow* = 968 CFM**NOTES:**

APPENDIX G

FIELD NOTES



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 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



FY 14 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	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





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## Facility Information Form

Revised: December 4, 2013



## General Facility Information

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

Date(s) of Previous IHSAs: October 2, 2010

Date(s) of IHSAs: October 3, 2014

Facility Name: Havre Armory

Address: 1050 2<sup>nd</sup> Street W, Havre, MT

Facility Commander:

**Non-Responsive**

406) 324-5566

**Non-Responsive**

Name / Phone Number / email

Safety Officer:

**Non-Responsive**

406) 324-5566

**Non-Responsive**

Name / Phone Number / email

No Person(s): 2 Admin: 2 Maint: 0 Work Sched: Mon-Fri 0800-1700 Size of Facility: Unknown

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

Unit(s): 639<sup>th</sup> CS Supply Company

Include UIC if available

Co-Tenant(s): None

List All

Build Date: 1980's

Renovation: 2000

Primary work  
activities at  
Facility:

Administrative duties

## Written Health &amp; Safety Programs / SOPs

Program	Program Needed	Have Program	Date of Last Training	# Enrolled	Comments
Confined Space	No				
Emergency Preparedness	Yes	No	Unknown		Training documents were not available
Hazard Communication	Yes	Yes	Unknown		Training documents were not available
Hearing Conservation	No				
PPE	No				
Respiratory Protection	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		Laundry	
Tools		Pest Control	
Rags		Hazardous Waste	
Refuse		Crane Maintenance	

Others:

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 1121 of 1990



## 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)	Yes, lead wipe Samples 100314-HA-W-01 to 05
Are any <b>weapons cleaned</b> in the facility, if yes where are they cleaned?	Yes, on the drill floor
Additional lead <b>wipe</b> samples taken from 25% of the rest of the building - -(on floor areas only)	Yes, lead wipe samples 100314-HA-W-06 to 09
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 Peeling paint identified
Are there any signs of water damage or mold?	Small staining on ceiling tiles
Any suspected <b>ACM</b> ? Where and what condition is it in. Bulk sample if able.	Suspect ACM were identified at the facility. 12x12 vinyl floor tiles and mastic, 2x4 ceiling tiles, base cove mastic, brick mortar, dry wall tape and joint compound. Building materials were in good condition and no samples were collected.
Quality of housekeeping	Good
HVAC maintenance plan in place?	State Maintenance Handles the HVAC maintenance plan
<b>Overall condition</b> of HVAC system	Good
Obtained <b>CO2, Temp, RH</b> monitoring	See Appendix E for measurements
<b>HAZMAT inventory</b> on hand (make copies for the report), <b>MSDS</b> available for all materials.	See Appendix D for chemical inventory

Any <b>civilian</b> activities 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.	See Appendix F for ventilation measurements
Collect Source Noise Measurements of Kitchen Appliances and Document Using DD 2214	See Appendix O for noise level measurements
Conduct a safety walkthrough of entire facility document any safety deficiencies found.	Completed, see report for findings
<u>Take photos</u> of outside of building, all <b>sample points</b> and any <b>pertinent hazards</b> or concerns.	See Appendix C for photo log
Name of Armory, POC, phone #, address and organizations in Armory  (Add Checklist to Report)	Havre Armory <b>Non-Responsive</b> (406) 324-5566 1050 2 <sup>nd</sup> Street W Havre, MT 639 <sup>th</sup> CS Supply Company



APPENDIX R

SAFETY RELATED INFORMATION



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**THIS TASK DOES NOT APPLY TO THIS FACILITY**

APPENDIX S

NOISE DOSIMETRY DATA

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NOT PERFORMED AT THIS FACILITY



APPENDIX T

ADDITIONAL SUPPORTING DOCUMENTATION





# Industrial Hygiene Site Assessment Visit (IHSAB)

## Scope of Work (Checklist)

Revised: May 14, 2014



Done	Task
✓	Review File: Past IHSAB Reports (determine additional tasks to be completed) & completed forms
✓	Opening Conference: intro, IHSAB summary, ID POC's, review <i>Facility Work Activities</i> , ID Non-DoD Contractors (o/w separator, laundry, tools, pest control, rags, haz waste, refuse, crane maint., etc.), & discuss civilian activities performed onsite (use of drill floor or other facilities). Obtain/Review Previous IH Assessments
✓	Complete <i>Facility Information Form</i>
✓	Record Adjacent Properties (North, South, East, West)
✓	Safety Program/ SOP/ Safety Training Review: review safety programs, list those present & date of most recent revision, training records, topics covered and date of most recent training
NA	Conduct Personal Breathing Zone Sampling; record data in <i>Exposure Sample Data Sheets</i>
✓	Collect IAQ and lighting measurements (+ outdoor control), record data on <i>IAQ &amp; Illumination Measurement Form</i>
✓	Collect metal wipe samples; record data on <i>Wipe Sampling Summary Form</i>
✓	Identify Exhaust Ventilation systems & collect measurements; record data on <i>LEV System Survey Form</i>
✓	Identify Noise Hazardous areas & collect sound level measurements; complete <i>DD 2214 Noise Survey Form</i>
✓	Develop list of IH equipment used during IHSAB; record data on <i>Equipment List Form</i>
✓	Asbestos Survey: identify whether facility has Asbestos Inspection Report, list suspect building materials present within facility; identify damaged suspect materials (take pictures)
✓	Lead Paint Survey: identify whether facility has deteriorating paint, list areas & substrate where deterioration is occurring (take pictures), & collect bulk samples where paint is not adhered to substrate
✓	Mold Survey: identify evidence of moisture intrusion (take pictures), identify any historic water intrusion / mold issues, identify presence or lack thereof mold growth
✓	HVAC / Facility Ventilation Survey: conduct a general assessment of HVAC / facility ventilation system, define how fresh air is provided, & develop written summary
✓	HAZMAT Inventory & Storage: obtain chemical inventory & evaluate areas where chemicals are stored
NA	POL Handling & Storage: evaluate how POL is handled & stored
NA	General & Tool Supply Area (If Present): evaluate general condition of tool & supply areas
✓	Safety Walkthrough: Conduct a walk of the entire facility & document conditions, violations & findings; record data on <i>General Safety Compliance Assessment Form</i>
✓	Complete Photo Log: including front / back of facility, sample locations & all conditions observed
NA	Converted IFR: Verify that historically an IFR was not present, if present conduct applicable lead samples.
NA	Paint Booth: complete the paint booth evaluation checklist & conduct ventilation assessment
NA	Conduct detailed Hazard Assessments (prioritized by highest risk); complete <i>IH Hazard Assessment Forms</i> SEE Attached checklist for common UTES work activities
✓	Conduct Closing Conference to summarize findings & Immediate Hazards

**Bold Font** = Form is available in H:\Army National Guard\IHSAB Documents\Forms

# **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
Are any weapons cleaned 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)	✓
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?	NO
Any suspected ACM? Where and what condition is it in. Bulk sample if able.	Yes, Documented
Quality of housekeeping	Good
HVAC maintenance plan in place?	State maintenance
Overall condition of HVAC system	Good
Obtained CO2, Temp, RH monitoring	✓
HAZMAT inventory on hand (make copies for the report), MSDS available for all materials.	Yes - Over 1 year old
HAZMAT storage, Condition of lockers, if outside storage building is used is it ventilated and does it meet OSHA standards.	Good



Evaluate Kitchen Stove Hood Flow if Present IAW NFPA Standard 96.	✓
Collect Source Noise Measurements of Kitchen Appliances and Document Using DD 2214	✓
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	<div style="background-color: black; color: red; padding: 2px;">Non-Responsive</div> <p>1050 2nd Street W Hamp, MT</p> <p>406-324-5566</p> <div style="background-color: black; color: red; padding: 2px;">Non-Responsive</div>
(Add Checklist to Report)	



# IAQ & Illumination Measurements

Facility: Havre Armory

Date: 10/2/2014

Revised: September 18, 2013



Location	CO <sub>2</sub> Site Permissible Level _____ ppm	Temperature Permissible Range 68 - 79°F	RH% Permissible Level < 65%	CO Ceiling Limit 200 ppm	Illumination (FC)
Outdoor Control	938	40.1	22.7	0.0	
Entryway	892	66.0	25.5	0.0	75.9c
108 Classroom	912	70.1	26.7	0.0	52.2t
Drill Floor	878	67.5	26.1	0.0	85.4c
Kitchen	901	65.4	24.0	0.0	51c
Locker Room	853	66.4	26.2	0.0	31.3c
Break Room	858	70.1	26.2	0.0	64.2c
Library/Learning Center	882	67.7	25.5	0.0	50.7d
Admin. Office	998	68.6	26.1	0.0	66.4d

CO<sub>2</sub> = Carbon Dioxide  
 °F = Fahrenheit  
 RH = Relative Humidity  
 CO = Carbon Monoxide  
 FC = Foot Candles



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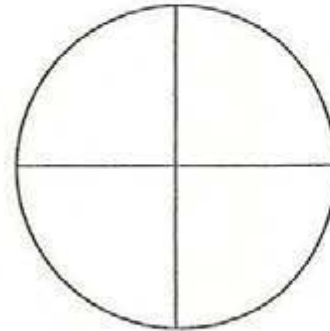
## LEV System Survey Form

Facility: Harris Armory  
Date: 10/03/14  
Revised: September 18, 2013



Name of LEV System: Hood over Dish washer  
Model: N/A Serial Number: N/A  
Dimensions of LEV: 32" x 32" OR    " diameter

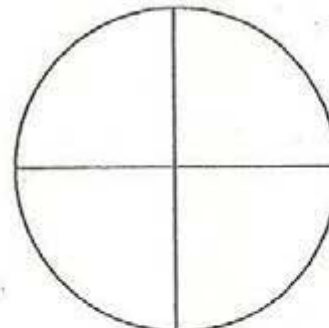
116	162 <del>150</del>	97	
143	140	130	
175	186	157	



NOTES: 60.1 DBA

Name of LEV System: Hood over Sink  
Model: N/A Serial Number: N/A  
Dimensions of LEV: 32" x 32" OR    " diameter

101	83	94	
136	164	140	
151	187	169	



NOTES: 61.5 DBA



Employee List

**Non-Responsive**

406-324-5566

406-324-5566

Hazmat

.19

Posted Inventory out of date

Cleaning supplies in janitor's closet

MSDS binder for cleaning supplies

Spill kit present

materials stored on shelves, upright &amp; organized

Materials handled by janitorial service

## Asbestos

(19)

12X12 VA & mastic (white, gray, black red)

2X4 Ceiling Tiles

Base core mastic

Brick Mortar

Drywall, JT/JC

No Asbestos Hazard Management Plan Present

## Lead

No peeling paint observed

## Mold

No visible water damage

Reported historical issues with roof leaking, leaking pipes and pipes freezing and bursting



APPENDIX H

CALIBRATION CERTIFICATES

# GrayWolf Sensing Solutions Calibration Certificate

Serial Number: 01-936  
Display Software Version: ws2013.13

Probe Software Version: v1.3.1.1

Model Number of UUT: IQ-410  
Display Model Number: Socket SoMo

Company Name: Industrial Hygiene SW  
Calibration Date: 1/22/2014  
Calibration Due Date: 1/22/2015  
RA #: 140109MSIHS

Ambient Conditions:  
Temperature: 20.9°C  
Relative Humidity: 32.0%RH  
Barometric Pressure: 994.7mbar

Relative Humidity:		31.9%RH		75.0%RH	
Actual:	1.2%RH	31.9%RH	31.9%RH	75.0%RH	75.0%RH
Measured:	1.2%RH	31.9%RH	31.9%RH	75.0%RH	75.0%RH

Carbon Monoxide: s/n 10466773-439	
Actual:	100.0ppm
Measured:	100.0ppm

Temperature:		38.1°C	
Actual:	16.5°C	20.5°C	38.1°C
Measured:	16.5°C	20.5°C	38.1°C

Carbon Dioxide: s/n JX 002577	
Actual:	375ppm
Measured:	375ppm

Non-Responsive

GrayWolf Sensing Solutions  
GrayWolf Calibration Information: calibration.GrayWolfSensing.com  
Phone: (203) 402-3477  
www.GrayWolfSensing.com





## Certificate of Calibration



8710348

Certificate Page 1 of 2

Company ID: 607229

Instrument Identification

PO Number:

Non-Responsive

Non-Responsive

MENTAL SYSTEMS

1141 SIBLEY STREET  
FOLSOM, CA 95630

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: OUT OF TOLERANCE

As Left Condition: IN TOLERANCE, ADJUSTED

Procedure: 33K4-4-475-1 30-JAN-13

Remarks:

Technician

Cal Date: 02Jun2015

Cal Due Date: 02Jun2015

Interval: 12 MONTHS

Temperature: 24.0 C

Humidity: 43.0 %

Non-Responsive

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.

Non-Responsive

Issue Date: 8/2/2014

## Calibration Standards

NIST Traceable#	Inst. ID#	Description	Manufacturer	Model	Cal Date	Date Due
7302057	000800	STANDARD SHUNT	RUBICON	ABS 1	26Apr2013	26Apr2015
1700294988	17-1001076	6 STEEL RULE	STARETT	C416R-72	22Mar2013	22Mar2015
8095776	17-1001081	LUMINANCE STD	OPTRONIC LABS	OL 455-4	16Dec2013	16Dec2014



APPENDIX I

AIR SAMPLING & METAL/LEAD WIPE TABLES



APPENDIX J

LABORATORY REPORTS



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## ANALYTICAL REPORT

Report Date: October 15, 2014

**Non-Responsive**

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

Phone: (916) 353-2360

Fax: (916) 353-2375

E-mail:

**Non-Responsive**

Workorder: 34-1428263

Client Project ID: 013.IH1716.19/Havre Armory

Purchase Order: **Non-Responsive**

Project Manager:

## Analytical Results

Sample ID: 100314-HA-W-01		Collected: 10/03/2014	
Lab ID: 1428263001	Sampling Location: Havre Armory		Received: 10/08/2014
Method: NIOSH 7300 Mod.		Media: Ghost Wipe	Prepared: 10/13/2014
		Sampling Parameter: Area 1 ft <sup>2</sup>	Analyzed: 10/14/2014
Analyte	ug/sample	ug/ft <sup>2</sup>	RL (ug/sample)
Lead	3.2	3.2	1.3

Sample ID: 100314-HA-W-02		Collected: 10/03/2014	
Lab ID: 1428263002	Sampling Location: Havre Armory		Received: 10/08/2014
Method: NIOSH 7300 Mod.		Media: Ghost Wipe	Prepared: 10/13/2014
		Sampling Parameter: Area 1 ft <sup>2</sup>	Analyzed: 10/14/2014
Analyte	ug/sample	ug/ft <sup>2</sup>	RL (ug/sample)
Lead	17	17	1.3

Sample ID: 100314-HA-W-03		Collected: 10/03/2014	
Lab ID: 1428263003	Sampling Location: Havre Armory		Received: 10/08/2014
Method: NIOSH 7300 Mod.		Media: Ghost Wipe	Prepared: 10/13/2014
		Sampling Parameter: Area 1 ft <sup>2</sup>	Analyzed: 10/14/2014
Analyte	ug/sample	ug/ft <sup>2</sup>	RL (ug/sample)
Lead	2.4	2.4	1.3

Sample ID: 100314-HA-W-04		Collected: 10/03/2014	
Lab ID: 1428263004	Sampling Location: Havre Armory		Received: 10/08/2014
Method: NIOSH 7300 Mod.		Media: Ghost Wipe	Prepared: 10/13/2014
		Sampling Parameter: Area 1 ft <sup>2</sup>	Analyzed: 10/14/2014
Analyte	ug/sample	ug/ft <sup>2</sup>	RL (ug/sample)
Lead	7.3	7.3	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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## ANALYTICAL REPORT

Workorder: 34-1428263

Client Project ID: 013.IH1716.19/Havre Armory

Purchase Order: 013.IH1716.19

Project Manager: Non-Responsive

Report Authorization (/S/ is an electronic signature that complies with 21 CFR Part 11)

Method	Analyst	Peer Review
NIOSH 7300 Mod.	Non-Responsive 10/15/2014 11:10	Non-Responsive 10/15/2014 12:10

## Laboratory Contact Information

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

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

## General Lab Comments

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

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

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

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

Testing Sector	Accreditation Body (Standard)	Certificate Number	Website
Environmental	ACCLASS (DoD ELAP)	ADE-1420	<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/lobc/bars/sas/qa/">http://www.dep.state.fl.us/lobc/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.

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

1428263

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

CONTACT ALS SALT LAKE PRIOR TO SENDING SAMPLES

2. Date 10/03/14 Purchase Order No. 013 IH1716.143. Company Name NES, Inc.Address: 1141 Keston Sibley Street.Fullerton, CA

Person to Contact \_\_\_\_\_

Telephone ( ) \_\_\_\_\_

Fax Telephone ( ) \_\_\_\_\_

E-mail Address \_\_\_\_\_

Billing Address (if different from above) \_\_\_\_\_

4. Quote No. \_\_\_\_\_

ALS Project Manager \_\_\_\_\_

**Non-Responsive**

5. Sample Collection

Sampling Site Havre Army

Industrial Process \_\_\_\_\_

Date of Collection 10/03/14

Time Collected \_\_\_\_\_

Date of Shipment 10/6/14

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

6. How did you first learn about ALS? \_\_\_\_\_

## 7. REQUEST FOR ANALYSES

Laboratory Use Only	Client Sample Number	Matrix*	Sample Volume	ANALYSES REQUESTED - Use method number if known	Units**
	100314-114-W-01	Wipe	1 Pk <sup>2</sup>	NIOSH 7200 - Lead only	µg/ft <sup>2</sup>
	-02				
	-03				
	-04				
	-05				
	-06				
	-07				
	-08				
	-09				
	-blank				

\* 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 Contaminants

7. Chain of Custody

Relinquished by \_\_\_\_\_

Date/Time 10/4/14

Received by \_\_\_\_\_

Date/Time 10-08-14 9:39

Relinquished by \_\_\_\_\_

Date/Time \_\_\_\_\_

Received by \_\_\_\_\_

Date/Time \_\_\_\_\_

960 West LeVoy Drive / Salt Lake City, UT 84123

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

ALS Environmental



APPENDIX K

EMPLOYEE LIST



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**PHOTO LOG  
HAVRE ARMORY  
HAVRE, MT  
OCTOBER 3, 2014**

BEST AVAILABLE COPY

PHOTO LOG  
HAVRE ARMORY  
HAVRE, MT  
OCTOBER 3, 2014

**Non-Responsive**

APPENDIX L

IHSW VIOLATION INVENTORY LOG



APPENDIX M

HAZARD ASSESSMENTS

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NOT PERFORMED AT THIS FACILITY

## 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 Havre Armory. The paragraphs are numbered to correspond to the sections where first noted. (i.e., N.5.3 describes the following: the N is Conclusions & Recommendations and the 5.3 corresponds back to Section 5 – Facility Systems & Hazards; Item 3 – Asbestos Evaluation).

**N4.2 IAQ: Temperature** – Adjust temperatures throughout the facility to be within ASHRAE guidelines, unless occupants prefer lower temperatures and are comfortable.

**N5.3 Asbestos Management** – Conduct a facility survey to identify and assess extent of asbestos 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 site specific Emergency Response program.

**N6.2 Safety Training and Record Keeping** – Perform and document training for the facility's Hazard Communication and Emergency Preparedness Programs.

**N7.1 Hazardous Materials Inventory** – Maintain a current chemical inventory, which has an accurate and current date.

### **N7.4 Safety Walk-Through**

1. Relocate materials in the kitchen to allow unobstructed access to the electrical panels and to ensure their safe operation.
2. Ensure power strips are plugged directly in an outlet; prevent using extension cords for permanent use; and / or increase the number of outlets to meet electrical demands.
3. Perform monthly inspections for the fire extinguisher and record the date and initials on the inspection tag.
4. Re-position, secure and/or cover the extension cords in the Classroom to control the potential trip hazard.



<b>NOISE SURVEY</b> <b>(SOUND LEVEL METER SURVEY)</b>									
1. DATE (YYYYMMDD) <b>20141003</b>				2. TYPE SURVEY (ENTER CODE)					
				1 1 - INITIAL SURVEY 2 - RE-SURVEY 3 - OTHER					
3. SOUND LEVEL METER			4. MICROPHONE			5. CALIBRATOR			
A. MANUFACTURE			A. MANUFACTURE			A. MANUFACTURE			
QUEST			ATTACHED TO SOUND LEVEL METER			QUEST			
B. MODEL <b>SLM-2</b>		C. SERIAL NO. <b>BIH090008</b>	B. MODEL		C. SERIAL NO.	B. MODEL <b>QC-10</b>		C. SERIAL NO. <b>QIH090203</b>	
D. LAST ELECTROACOUSTIC CALIB. DATE (YYYYMMDD) <b>20131127</b>			D. LAST ELECTROACOUSTIC CALIB. DATE (YYYYMMDD)			D. LAST ELECTROACOUSTIC CALIB. DATE (YYYYMMDD) <b>20131127</b>			
6. WIND SCREEN (X ONE)					7. MEASUREMENTS OBTAINED (X ONE)				
USED		<b>X</b>	NOT USED		<b>X</b>		INDOORS		OUTDOORS
8. DESCRIPTION OF AREA/DUTIES WHERE NOISE SURVEY CONDUCTED					9. PRIMARY SOURCE OF NOISE				
Noise measurements were collected from the three (3) functioning kitchen canopy hoods located above the serving area, dishwasher, and sink.					Kitchen Canopy Hoods				
					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)
Kitchen canopy hood over serving area		S		65.3		X			
Kitchen canopy hood over dishwasher		S		60.1		X			
Kitchen canopy hood over sink		S		61.5		X			
Notes: Range of levels noted by /; i.e., 102/109. At operator stations, measure at ear level. Meter Action: Enter F for fast meter action and S for slow meter action.									
13. MORE DETAILED NOISE EVALUATION REQUIRED:									
					YES	<b>X</b>	No (if "Yes," identify type evaluation needed.)		
14. NAME(S) OF PERSON(S) IDENTIFIED FOR AUDIOMETRIC MONITORING (Use additional sheet if more space is needed and attach to form)									
15. SUPERVISOR OF NOISE-HAZARDOUS AREA OF OPERATION									
A. NAME (Last, First, Middle Initial)				B. TELEPHONE (Include area code)			C. ORGANIZATION		
16. SURVEY PERFORMED BY (Last Name, First, MI)				17. HEARING CONVERSATION MONITOR (Last Name, First, MI)					
<b>Non-Responsive</b>									

DD FORM 214, 6/74 2000

APPENDIX P

INSTALLATION STATUS REPORT





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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**

**Helena Armed Forces Reserve  
Center (HAFRC)  
Indoor Firing Range (IFR)**

**1956 Mt. Majo Street  
Helena, MT 59636**

**14 AUG 2013**

---

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

143



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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

05 December 2013

ARNG-CSG-P

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

FOR Commander Helena Armed Forces Reserve Center (HAFRC) Indoor Firing Range (IFR) at 1956 Mt. Majo St., Helena, MT 59636

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (SAV) for the Helena Armed Forces Reserve Center (HAFRC) Indoor Firing Range (IFR) at 1956 Mt. Majo St., Helena, MT on 14 AUG 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 Helena Armed Forces Reserve Center (HAFRC) Indoor Firing Range (IFR) at 1956 Mt. Majo St., Helena, MT on 14 AUG 2013.

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

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

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

3. Findings. See survey report.

4. Commendable.

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

5. Observations / Recommendations.

## ARNG-CSG-P

**SUBJECT:** Executive Summary for Industrial Hygiene Site Assistance Visit (SAV) for the Helena Armed Forces Reserve Center (HAFRC) Indoor Firing Range (IFR) at 1956 Mt. Majo St., Helena, MT on 14 AUG 2013

**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. Remove the broom from the range and prohibit all sweeping of the range floor until the range has been cleaned of lead and subsequent samples validate the floor is clean. (para. 4.1.6) (RAC 2)

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 a lead dust exposure in this facility/area. Make sure staff and maintenance personnel are aware of the associated hazards for lead. (Exec. Summary) (RAC 3)

c. Improve housekeeping practices and utilize SOP included to help prevent migration of noted lead dust in this Converted IFR. A thorough cleaning of the IFR should be accomplished before continuous use of this Converted IFR. Areas noted to be above 40 ug/ft<sup>2</sup> should get special attention and areas should be retested once thoroughly cleaned as noted in NG Pam 420-15 (Conversion of Indoor Firing Ranges). (para. 5.3) (RAC 2)

d. Increase all fire extinguishers monthly and annually. Documentation should be placed on the extinguisher tag by inspectors signature. (para. 5.5) (RAC 4)

e. Secure CO2 cylinders and add protective collars to prevent damage, tipping or missile hazard. Ensure cylinders are sealed when not in use. (para. 4.1.5) (RAC 3)

f. Ensure the staff and anybody going into the Converted IFR are aware of the associated hazards for lead.

## 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.



**ARNG-CSG-P**

**SUBJECT:** Executive Summary for Industrial Hygiene Site Assistance Visit (SAV) for the Helena Armed Forces Reserve Center (HAFRC) Indoor Firing Range (IFR) at 1956 Mt. Majo St., Helena, MT on 14 AUG 2013

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

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

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

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

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

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

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

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

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

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).

ARNG-CSG-P

**SUBJECT:** Executive Summary for Industrial Hygiene Site Assistance Visit (SAV) for the Helena Armed Forces Reserve Center (HAFRC) Indoor Firing Range (IFR) at 1956 Mt. Majo St., Helena, MT on 14 AUG 2013

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  
Helena IFR - Helena, MT



CONTROL NUMBER	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/NOIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
<input type="checkbox"/> CLOSED MTHIFR- 08142013-4.1.5	CO <sub>2</sub> cylinders are unsecured and missing protective collars	IFR	3	Secure CO <sub>2</sub> cylinders and add protective collars to prevent damage and tipping. Ensure cylinders are sealed when not in use.					29 CFR 1910.253b(2)(ii)
MTHIFR- 08142013-4.1.6	Sweeping inside the range	IFR	2	Remove the broom from the range and prohibit all sweeping of the range floor until the range has been cleaned of lead and subsequent samples validate the floor is clean.					NGR 385-15 (2- 3e)
MTHIFR- 08142013- Executive Summary-C	No signage to warn personnel of lead hazard	IFR	2	Post warning signage at the entryway(s) of the facility and on Converted IFR door(s) to warn all personnel but especially pregnant or nursing females and children under seven years of age that there is a potential for a lead dust exposure in this facility/area. Make sure staff and maintenance personnel are aware of the associated hazards of lead exposure.					Prudent Industrial Hygiene Practice
MTHIFR- 08142013-5.3 & Executive Summary-D	Lead concentrations exceed established criteria	IFR	2	Review the Armory SOP for lead cleanup and follow the guidelines for cleaning. Have follow-up testing conducted to meet acceptable concentrations.					29 CFR 1910.1025 (h)(1) & NG Pam 420-15



**Industrial Hygiene Southwest**  
**Violation Inventory Log**  
**LOG OF SCHEDULE OF CORRECTIVE ACTION - COMPLIANCE WITH SAFETY AND HEALTH STANDARDS**  
**Helena IFR - Helena, MT**



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"/> MTHIFR- 08142013-5.5	Low temperatures in range	IFR	4	Increase temperatures inside the range in order to meet the minimum 68F required.					ASHRAE Standard 55-1992
MTHIFR- 08142013-5.6.1	Fire extinguisher inspections are out of date.	IFR	4	Inspect all fire extinguishers monthly and document the date and inspector's signature on the inspection tag.					29 CFR 1910.157 (e)(2)

## **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  
Helena Indoor Firing Range  
Helena, Montana  
14 August, 2013**





**INDUSTRIAL HYGIENE SITE ASSISTANCE VISIT (IHSAY)**

**HELENA INDOOR FIRING RANGE (IFR)**

1956 MT. MAJO STREET  
HELENA, MONTANA 59636

**August 14, 2013**

*Prepared for:*

Industrial Hygiene Southwest  
10510 Superfortress Avenue, Suite C  
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*Prepared by:*

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**NES Job Number: 013.IH1449.16**

*Prepared by:*

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## EXECUTIVE SUMMARY

On August 14, 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 Helena Indoor Firing Range (IFR) located at 1956 Fleshman Creek Road in Helena, Montana. The primary point of contact (POC) for information gathered during this survey was [Non-Responsive] who can be reached by phone at 406-324-3548 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] went above and beyond expectations to help NES complete the IHS AV.

## 1.0 INTRODUCTION

On August 14, 2013, [Non-Responsive] Associate Industrial Hygienist, and [Non-Responsive] Certified Industrial Hygienist (CIH) of Network Environmental Systems, Inc. (NES), conducted an IHSAV at the Helena IFR located at 1956 Fleshman Creek Road in Helena, Montana. The primary POC for information gathered during this survey was [Non-Responsive] who can be reached by phone at 406-324-3548 or by email at [Non-Responsive]

### 1.1 Objectives

The primary objective of the IHSAV 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 IHSAV will serve to establish a baseline Hazard Assessments (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 Helena IFR is located within the Helena Armed Forces Reserve Center. The facility currently has three (3) full time guard members assigned to the IFR. The primary unit assigned to this facility is the [REDACTED] Non-Responsive. The IFR operates from 0800 to 1700, Monday through Friday. The range currently utilizes an electronic Beamhit Laser system for marksmanship training. Live ammunition had been used previously before the IFR was converted to the electronic system.



### 3.0 METHODS

#### 3.1 Breathing Zone Air Sampling

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

#### 3.2 Ventilation

The IFR has a plenum wall where air is blown into the space. The air velocity at the 7 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. 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.

The US Department of Housing and Urban Development (HUD) recommends 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 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 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 Helena 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 (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 current annual calibration certificate for this instrument is located in Appendix H.

### 3.6 Equipment Used

The following equipment was used for this survey.

Type	Model Number	Serial Number	Calibration Date
TSI IAQ-Calc Meter	7545	T75450846008	October 2013
TSI VelociCalc Plus Meter	8386A	54110581	March 2013
Konica Minolta Light Meter	TL-1	90480719	May 2013

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

### 3.7 Quality Assurance

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

- 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 Physical Safety Inspection established by the Army National Guard. Two of the seven firing lanes, lanes 1 and 7, were measured to be at least four feet wide as required. The remaining five lanes were less than the required four feet in width. Pipes, conduits and walls were sealed and baffled or covered to prevent the migration of lead and ricochets, with the exception of a junction box located on the upper western wall that was not sealed. Excluding the access door behind the plenum wall, there were no doors or windows in front of the firing line. The range had no open floor drains, carpets, drapes or fiber-like material. There were no protruding edges on the floor, walls or ceiling, and the interior mortar joints were flush with the interior surface. The walls and roof of the IFR were composed of concrete and provided ballistic security. The plenum wall was supported and thick enough to avoid flexing of the wall. The entrance door to the range was weather-stripped.

##### 4.1.2 Range Lighting

Illumination was measured at the targets and was found to provide between 106.5 and 133.9 foot candles (FC). Illumination in the center of the IFR was measured at 6.07 FC. Fluorescent light panels were mounted on the northern wall behind the bullet trap. The light was measured at 30 FC at each panel and ranged from 15 to 20 FC between each panel. Light fixtures were protected with baffles and installed in a manner as to not obstruct the shooter's view down range. Down range lighting begins at 35 feet from the firing line and target lighting is within 4 feet of the target line. An emergency light unit is provided behind the firing line but was not operational at the time of this IHSAV. There was no exit light installed. No electrical hazards were observed during the IHSAV.

#### **4.1.3 Bullet Traps**

The bullet trap appeared to be of commercial design and are permanently installed. The range utilizes a rubber mat style bullet trap. There was a flat surface above the sloped backstop roughly 10 inches in width, running the length of the bullet trap. This surface would pose a risk of ricochet if the range was actively using live ammunition.

#### **4.1.4 Targets and Target Carriers**

The target retrieval system was not functional for lanes one through three due to the installed Beamhit/LMTS (Laser Marksmanship Training System) equipment. The remaining target retrieval equipment was operational. This system was constructed in a manner that minimizes flat surfaces that may be exposed to the firing line.

#### **4.1.5 Range Use**

The IFR is currently set up with a Beamhit/LMTS system which occupies lanes one through three. No equipment or furniture is stored in the range or behind the bullet trap. Various items are currently stored in front of the plenum wall. There were 2 CO<sub>2</sub> cylinders found unsecured and 1 of the cylinders was left with the valve in the open position. These items obstruct roughly ten percent of the plenum wall area, reducing the airflow of the ventilation system. The Beamhit system is equipped with an audible alarm four feet downrange. The fire extinguisher for the range is mounted directly to the wall and had an expired monthly inspection tag.

#### **4.1.6 Range Maintenance**

A broom is currently stored in the range along with a HEPA vacuum. No range custodian is appointed for this IFR.

#### **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. A standard trauma first aid kit is provided and well-stocked in case of injuries.

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

The Helena 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 warns personnel not to enter while range is in use and has an interlock attached to the access door.

#### **4.1.9 Range SOP**

The Helena IFR is inactive and is not used as a firing range. This facility does not have a current site specific SOP for the range.

#### **4.1.10 Record Keeping**

A visitors log is not maintained for the IFR. Copies of previous inspections for the IFR were not available. An OSHA compliance program was not available at the time of the IHSAV. The Helena IFR does not have a designated range safety officer.

### **4.2 Ventilation Inspection**

The ventilation system for the range was operational at the time of the IHSAV. To prevent contamination of other ventilation systems, the exhaust for the range ventilation system is installed away from other air supply systems. The ventilation system is designed to introduce fresh air into the range from behind the shooters and is exhausted behind the bullet trap. The air in the range is not re-circulated. Air flow out of the plenum wall was measured at 380 LFM. The power system is designed so that the make-up and exhaust fans are electronically interlocked. The exhaust fan will start first followed by the make-up fan. A smoke test was performed to confirm negative pressure within the IFR in relation to the surrounding areas. The smoke test also demonstrated laminar flow of air downrange with no turbulence. The air temperature within the IFR ranged between 66.7 and 67.8 °F.



## 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 met the 50 LFM minimum requirement. A VeriFit smoke tube was used to determine that air flow occurs in a laminar direction. The smoke flowed downrange with no "blow-back" effects. The velocity rates for each lane are available below.

Lane #	1	2	3	4	5	6	7
	Flow Rate (FPM)						
Shooter Position	> 50	> 50	> 50	> 50	> 50	> 50	> 50

### 5.3 Lead Wipe Sampling

A total of five (5) lead wipe samples were collected during the IHS AV 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 200µg/ft². Results indicate that the range is not safe to be used for the intended re-purposed activities.

Sample Number	Sample Area	Sample Location	Results (µg/ft²)	ARNG/HUD Standard
81413-HLNIFR-01	Bullet trap access	Floor	140	≤ 200
81413-HLNIFR-02	Beamhit practice area	Floor	77	≤ 200
81413-HLNIFR-03	IFR entrance (inside)	Floor	8.3	≤ 200
81413-HLNIFR-04	Lane 5	Floor near bullet trap	<b>510</b>	≤ 200
81413-HLNIFR-05	Lane 3	Floor beneath shooter's table	43	≤ 200

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

The IFR should be cleaned to remove excess lead contamination. The Armory SOP for lead cleanup is provided in Appendix R (Safety Related Information).

#### 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; 60 FC is required at the shooter lane; and 50 FC behind the shooter lanes.

Lighting throughout the IFR fell below the minimum lighting requirements. See Appendix E for a table of illumination measurements.

#### 5.5 Indoor Air Quality

The CO<sub>2</sub> concentrations from inside the IFR ranged between 206 to 260 ppm, within ASHRAE's 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 66.7 and 67.8°F. Relative humidity ranged from 58.5 to 59.7%. The temperatures were below the ASHRAE recommended range. 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.

## 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**

December 2, 2013

Date

*Senior Industrial Hygienist*

**Non-Responsive**

December 13, 2013

Date

*Industrial Hygiene Program Manager*

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

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## 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).

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**APPENDIX B**

**ASSESSMENT CRITERIA**

## **Appendix B**

### **Assessment Criteria**

#### **A. Ventilation Standards**

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**APPENDIX C**

**PHOTO LOG**



**PHOTO LOG  
HELENA INDOOR FIRING RANGE  
HELENA, MT  
AUGUST 14, 2013**



**Photo 1:** Facility signage for the Helena Armed Forces Reserve Center.



**Photo 2:** Safety signage for the Helena IFR, located on the entrance door.

PHOTO LOG  
HELENA INDOOR FIRING RANGE  
HELENA, MT  
AUGUST 14, 2013



Photo 3: Additional safety signage for the IFR entrance.

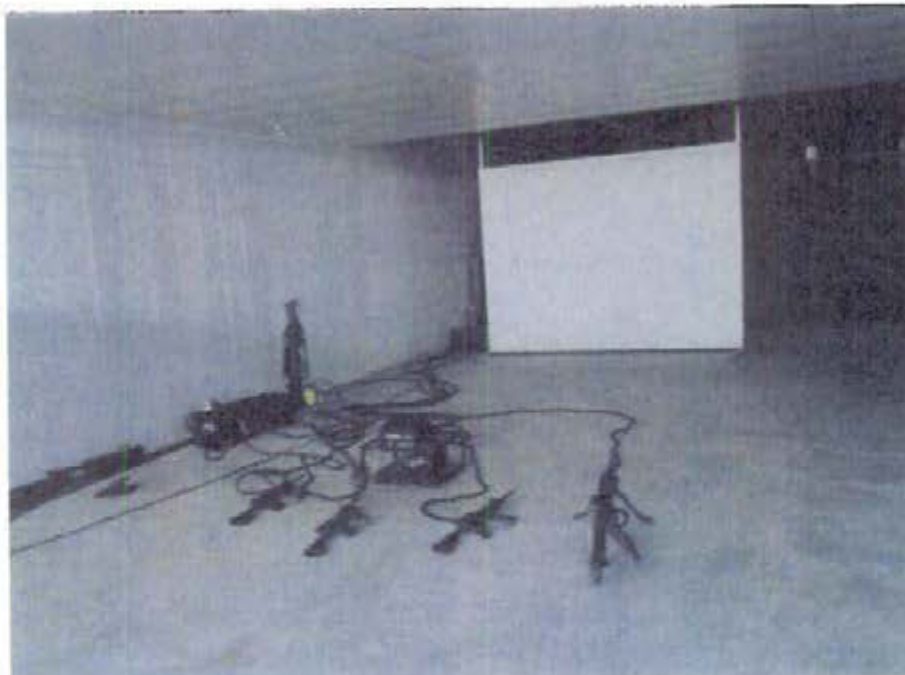


Photo 4: Safety signage at the IFR exit.

**PHOTO LOG  
HELENA INDOOR FIRING RANGE  
HELENA, MT  
AUGUST 14, 2013**



**Photo 5: Firing lanes and shooter's area.**



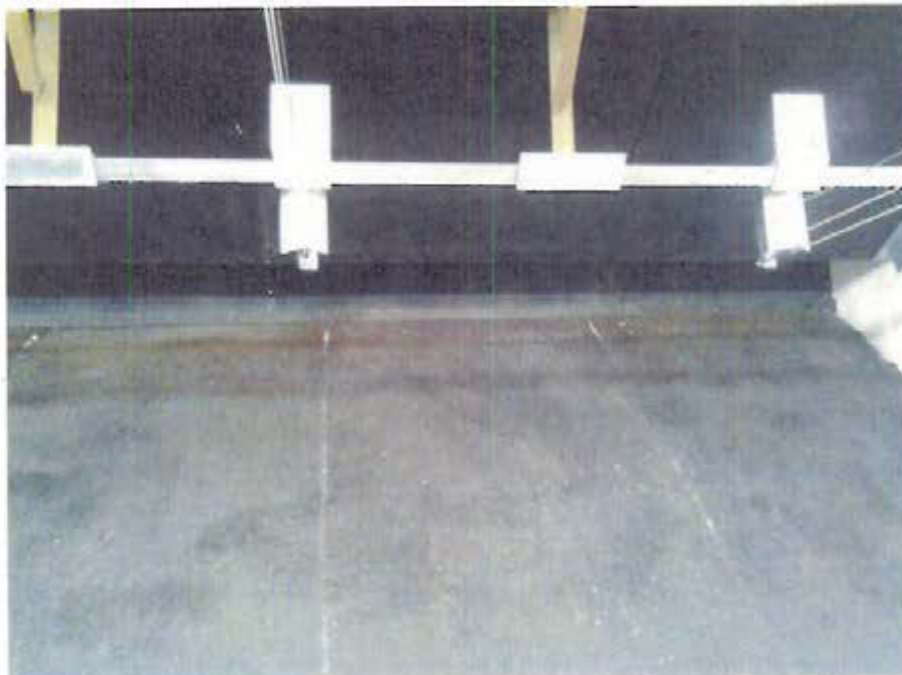
**Photo 6: Beamhit system located between lanes 1 and 3.**



**PHOTO LOG  
HELENA INDOOR FIRING RANGE  
HELENA, MT  
AUGUST 14, 2013**



**Photo 7: Down range view of lanes 4-7.**



**Photo 8: 10-12" flat surface at the bullet trap below target carrier.**

**PHOTO LOG  
HELENA INDOOR FIRING RANGE  
HELENA, MT  
AUGUST 14, 2013**



**Photo 9:** Unsecure CO<sub>2</sub> cylinders located near bullet trap. No safety collars are used while cylinders are not in use. One cylinder was left open.



**Photo 10:** Fire extinguisher with expired monthly inspection tag.

**PHOTO LOG  
HELENA INDOOR FIRING RANGE  
HELENA, MT  
AUGUST 14, 2013**



**Photo 11:** Lead wipe sample 81413-HLNIFR-01 collected from the floor near the bullet trap access area.



**Photo 12:** Lead wipe sample 81413-HLNIFR-02 collected from the floor at the Beamhit practice area.



**PHOTO LOG  
HELENA INDOOR FIRING RANGE  
HELENA, MT  
AUGUST 14, 2013**



**Photo 13:** Lead wipe sample 81413-HLNIFR-03 collected from the inside floor at the IFR entrance.



**Photo 14:** Lead wipe sample 81413-HLNIFR-04 collected from the floor of Lane 5 in front of the bullet trap.

**PHOTO LOG  
HELENA INDOOR FIRING RANGE  
HELENA, MT  
AUGUST 14, 2013**



**Photo 15:** Lead wipe sample 81413-HLNIFR-05 collected from the floor of Lane 3 beneath the shooter's table.

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**APPENDIX E**

**FLOOR PLAN/ILLUMINATION SURVEY/IAQ - TEMP, RH & CO2 MONITORING**

**ILLUMINATION SURVEY**  
**HELENA IFR**  
**HELENA, MT**  
**AUGUST 14, 2013**

Location	Light Measurement (FC)	Minimum Lighting Requirement (FC)
Behind shooter position	105.1	$\geq 50$
Center of IFR	<b>6.07</b>	$\geq 30$
Target position, left side	108.5	$\geq 100$
Target position, center	106.5	$\geq 100$
Target position, right side	133.9	$\geq 100$

\*FC = foot candle measurement

**Bold = Insufficient Lighting**



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## **IFR VENTILATION SYSTEM MEASUREMENTS**

**HELENA INDOOR FIRING RANGE**

**HELENA, MT**

**AUGUST 14, 2013**

The ventilation system inside the Helena IFR was evaluated to ensure adequate airflow is provided for the activities performed. Using a smoke test, negative pressure was confirmed at the entrance of the IFR. Air is introduced behind the shooter position and flows in a laminar fashion down the range towards the bullet trap where it is completely exhausted out of the room.

The ventilation rate at the firing line meets the minimum requirement of 50 linear feet per minute (LFM). Air that is introduced through vents into the plenum wall exceeded the recommended 600 LFM. Upon exiting the plenum wall, the airflow was measured at 380 LFM, falling below the recommended range of 400 to 600 LFM.

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**APPENDIX G**

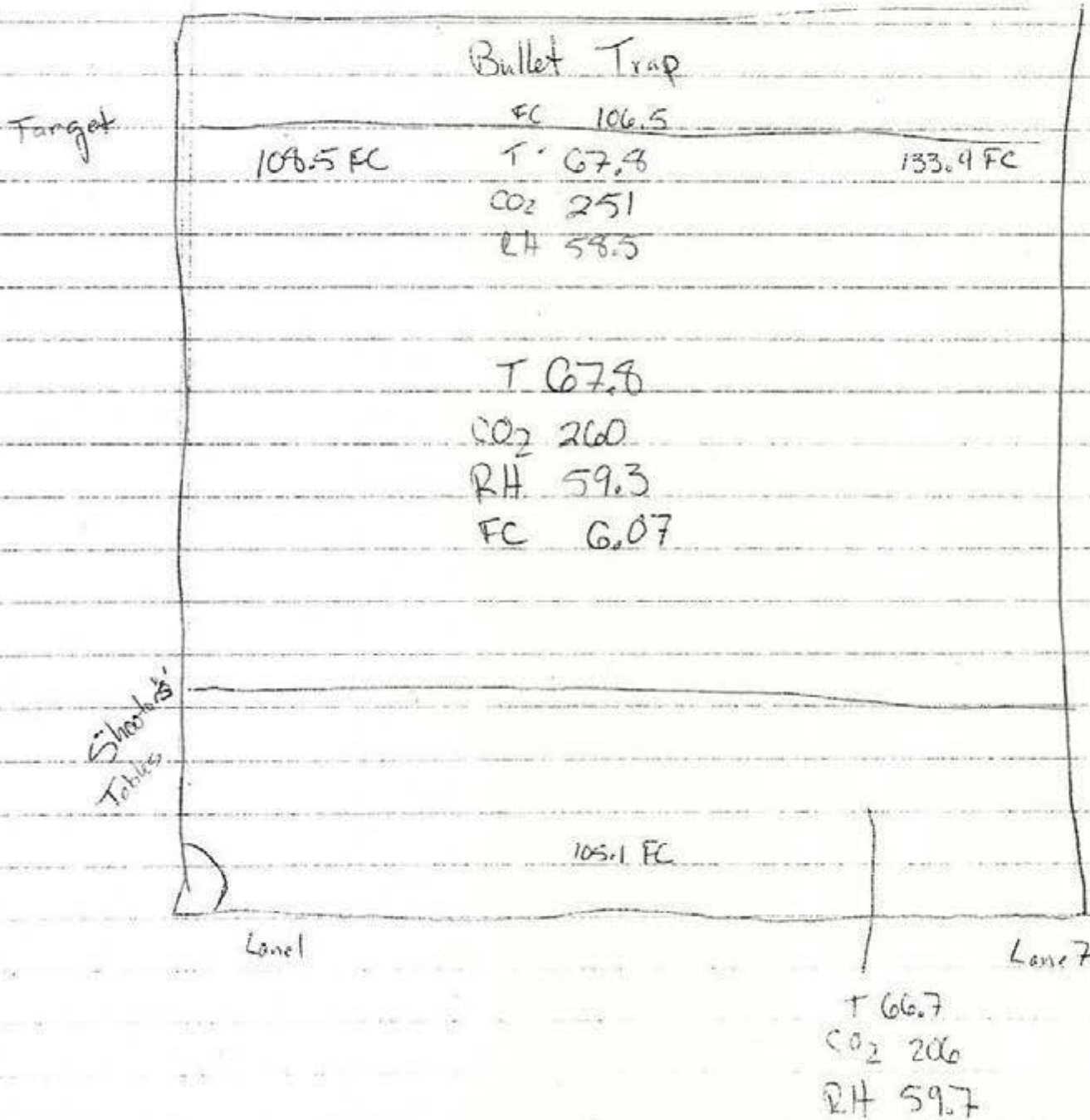
**FIELD NOTES**

8/14/13 013.IH1449.16 Helena IFR page 1 of 1

- #1 Indoor Firing Range Signage at entrance to range
- #2 Safety signage on door to range
- #3 Safety signage on wall at entrance to firing range
- #4 "Range in use" sign at entrance to IFR
- \* #5 Fire extinguisher <sup>ty</sup> with ~~exp~~ due monthly inspection located outside of the range
- #6 Safety signage on IFR door viewed as exiting
- #7 Control system for IFR illumination + ventilation
- #8 Firing lanes / shooter's area
- #9 Plenum wall + storage
- \* #10 Broom in southeast corner of IFR
- #11 HEPA vacuum
- #12 Beamhit system located between lanes 1 + 3
- #13 Bullet trap + beamhit equipment lanes 1 + 3
- #14 View from downrange to shooter's area + storage
- #15 View down range ~~for target~~ lanes 4 - 7
- \* #16 Small hole beneath junction box on north end of west w
- #17 Lead wipe sample #1 in bullet trap access
- #18 Bullet trap access door
- \* #19 Unsecured CO<sub>2</sub> cylinders, safety collars not used when cylinder is not in use, one cylinder left on/open
- #20 Facility map
- \* #21 ~10-12" flat surface at bullet trap, middle of photo just below target carrier
- \* #22 Unsecured CO<sub>2</sub> tank at plenum wall, no collar

page 2 of 3

Used For approximately 1 month when the Facility was initially built





page 3 of 3

#23 Lead Wipe Sample 2

8/11/13 - HLNIFR - 02 Floor at Beamhit practice area

#24 " " -03 inside IFR at door

#25 " " -04 Lane 5 floor v5 ft from bullet trap

#26 " " -05 Lane 3 floor beneath shooter's table

#27 First aid kit kept at plenum wall

#28 Signage at front of Helena AFRC

## Army National Guard IAQ Checklist

<b>General Info</b> – Name and address of facility with Zip code, POC's name, phone #, Military organization.	Helena 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.	No droppings or dampness
<b>HVAC system:</b> check - -drip pan (dampness, mold, etc.), filters, coils, dampers (bird screens)	NA
<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)	Yes
<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.	Storage in front of plenum
<b>Ventilation</b> – survey of all general and local ventilation systems	Yes
<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 building occupancy: How many military personnel, how many civilian personnel	8-10 personnel at a time in IFR	X
Any civilian activities in facility (cub scouts, classes, day care, parties etc) IFR	No	*
Conduct a safety walkthrough of entire facility document any safety deficiencies found.		
Sampling – (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), Scotch Tape samples for molds	Air NA Mold NA Wipes 1/4s	
Submit final written report within 30 days after receipt of sample results. Which includes: 4 comb bound final reports with attachments, CD of each facility surveyed, POC, phone # and facility address included in Introduction portion.		
Appendices – should include: Shop layout with locations of measurements of local and general exhaust fan; sampling & ventilation data and this Checklist		



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

1. Date Prepared: *12/Aug 13*
2. Names (and Company Name) of Personnel Conducting Industrial Hygiene Site Assistance Visit:
3. Facility Name and Brief Summary of Primary Activities Conducted at Facility:  
*Helena Armed Forces Reserve Center - IIR*
4. Facility Address: *1956 mt Alajo st Fort Harrison mt 59636*
5. Primary Unit Assigned to Facility (Ensure to capture and provide Unit Identification Code (UIC)): **Non-Responsive**
6. Co-Tenant Units Assigned or Working Within Facility (LIST ALL): *IIR* ☒
7. Square Ft. Area of Facility:
8. Work Schedule: *8-5 Mon-Fri*
9. Number of work bays: *1*
10. Equipment Density and Type:
  - a. List Equipment Nomenclature Serviced or Maintained at Facility: *N/A*
  - b. List Total Number for Each Nomenclature Serviced or Maintained at Facility: *N/A*
11. Total Number of Personnel: *3*
12. No. of Admin. Personnel (Include Status – AGR, Fed. Tech., IDT, State or Contract Employee): *3 AGR*
13. No. of Maintenance Personnel (Include Status – AGR, Fed. Tech., IDT, State or Contract Employee): *0*
14. Total Number of Personnel Enrolled in the Hearing Conservation Program: *0*
15. Total Number of Personnel Enrolled in the Respiratory Protection Program: *0*
16. Total Number of Personnel Enrolled in the Medical Surveillance Program: *0*

PAGE 1 of 2

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

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

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

**Non-Responsive**

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

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

406-324-5701

**Non-Responsive**

20. Facility Telephone Number: 406-324-3548

**Industrie Hygiene Southwest - IH Site Assistance Visit**  
 (Initial Information Request)  
 (Version 11 Nov 07)

Name of ARNG Facility: HAFRC IFR

**1. General Information:**

- a. List of all personnel in facility with SSAN #s (last four).
- b. Equipment List - aircraft, vehicles or ancillary equipment that maintenance is performed on (to include density of equipment).
- c. Fire Escape (evacuation) Plan for your facility.
- d. Chemical Listing (Hazardous Materials list).
- e. Listing of all onsite ventilation systems, to include physical locations of all hoods, vehicle exhaust drops or systems to remove or control Hazardous Material vapors and fumes.
- f. The number of personnel at the facility who are enrolled in the Respiratory Protection Program.
- g. The number of personnel enrolled in the facility Hearing Conservation Program.

**2. Hazard Assessments:**

- a. Does the installation have copies of their Hazard Assessments they have completed for the processes conducted at this facility (Reference 29 CFR 1910.132(d))?
- b. If yes, please forward Written Hazard Assessments NLT 30 Days prior to schedule date of this visit.

**3. ARC WELDING:**

- a. What are the names and SSN's of the welders for the facility?
- b. Are the welders enrolled in a medical surveillance program? If yes, why are they enrolled?
- c. What are the components welded, treated/painted with:

Provide a MSDS for the paint/coating:

- d. What are the metals used in welding operations at the facility:

Provide a MSDS for these metals:



## e. Welding Rods:

1. Types used:
2. Provide an MSDS for Welding Rods:

## f. Respiratory protection used by employees for welding operations:

1. Manufacture:
2. Respiratory Protection Type, i.e. half face, full face, Powered Air Purifying Respirator (PAPR):
3. Cartridge type used on Respiratory Protection:
4. Is other Personal Protective Equipment (PPE) used in operation? If so what types:

## g. Are ventilation systems used during welding operations? If so, briefly explain:

1. Booth used:
2. Local exhaust/ventilation:
3. Outside area used:
4. What is the size(ft) of the room/booth for these operations:

Height:

Length:

Width:

## h. Has a noise survey been conducted on the equipment in this area to determine the noise levels (&lt;85 decibels)?

4. Brazing Operations, Copper, Aluminum:

- a. What are the names and SSN's of the personnel conducting Brazing operations for the facility?
- b. Are these personnel enrolled in a medical surveillance program? If yes, why are they enrolled?
- c. What are components treated/painted with:

Provide a MSDS for the paint/coating:

Provide a MSDS for the paint/coating:

b. Respiratory protection used by employees for Grinding operations:

1. Manufacture:
2. Respiratory Protection Type, i.e. half face, full face, Powered Air Purifying Respirator (PAPR):
3. Cartridge type used on Respiratory Protection:
4. Is other Personal Protective Equipment (PPE) used in operation? If so what types:

c. Are ventilation systems used during Grinding operations? If so, briefly explain:

1. Booth used:
2. Local exhaust/ventilation:
3. Outside area used:

d. Do processes involve the use of solvents/cleaners:

Provide MSDS for products used:

e. Has a noise survey been conducted on the equipment used to determine the noise levels (<85 decibels)?

6. Sand/Grit Blasting:

a. What are components treated/painted with:

Provide a MSDS for the paint/coating:

b. Respiratory protection used by employees for Sand/Grit Blasting operations:

1. Manufacture:
2. Respiratory Protection Type, i.e. half face, full face, Powered Air Purifying Respirator (PAPR):
3. Cartridge type used on Respiratory Protection:

4. Is Supplied Air respiratory protection used in process? If so, what type of compressor/free air pump is used?

a. Manufacture:

NA

b. Model:

c. Hose lengths used:

d. Number of possible respirators used with system:

5. Is other Personal Protective Equipment (PPE) used in operation? If so what types:

- c. Are ventilation systems used during Sand/Grit Blasting operations? If so, briefly explain:

1. Booth used:

NA

2. Local exhaust/ventilation:

3. Outside area used:

4. What is the size(ft) of the room/booth for these operations:

Height:

Length:

Width:

- d. Do processes involve the use of solvents/cleaners:

Provide MSDS for products used:

- e. Has a noise survey been conducted on the equipment used in this area, or general noise measurements collected within this area, to determine the noise levels (<85 decibels)?

7. Wiping/Cleaning Equipment:

NA

- a. Do processes involve the use of Solvents or Cleaners?

Provide MSDS for products used:

- b. Respiratory protection used by employees for Wiping/Cleaning processes:

1. Manufacture:

2. Respiratory Protection Type, i.e. half face, full face, Powered Air Purifying Respirator (PAPR):

3. Cartridge type used on Respiratory Protection:



4. Is other Personal Protective Equipment (PPE) used in operation? If so what types:

c. Are ventilation systems used during Wiping/Cleaning processes? If so, briefly explain:

1. Booth used:

2. Local exhaust/ventilation:

3. Outside area used:

8. Soldering Operations:

a. What are components being soldered, treated/painted with:

Provide a MSDS for the paint/coating:

b. What are the metals used in soldering operations at the facility:

Provide a MSDS for these metals:

c. What other materials are used in conjunction with soldering operations (Flux, Cleaning solvents):

Provide an MSDS for other materials used:

d. Respiratory protection used by employees for Soldering operations:

1. Manufacture:

2. Respiratory Protection Type, i.e. half face, full face, Powered Air Purifying Respirator (PAPR):

3. Cartridge type used on Respiratory Protection:

4. Is other Personal Protective Equipment (PPE) used in operation? If so what types:

e. Are ventilation systems used during Soldering operations? If so, briefly explain:

1. Booth used:

2. Local exhaust/ventilation:

3. Outside area used:

4. What is the size(11) of the room for these operations:

Height:

Length:

Width:

f. Do processes involve the use of Solvents or Cleaners?

Provide MSDS for products used:

9. Painting Operations (Large Scale):

(See small scale for aerosol operations)

NA

a. What are the names and SSN's of the personnel identified as painters for the facility?

b. Are these personnel enrolled in a medical surveillance program? If yes, why are they enrolled?

c. Are paint strippers/removers used in component preparation for painting?

Provide MSDS for strippers/removers used:

d. What paints are used?:

Provide MSDS for paints used in painting operations:

Do the paints contain Chromates:

Do the paints contain Isocyanates:

e. What is the process for Large Scale Paint application:

Roller

Spray

Brush

Other

Are painting processes conducted inside hangar or work-bay areas? If yes, briefly explain:

f. Respiratory protection used by employees for Large Scale Painting operations:

1. Manufacture:

2. Respiratory Protection Type, i.e. half face, full face, Powered Air Purifying Respirator (PAPR):

3. Cartridge type used on Respiratory Protection:

4. Is other Personal Protective Equipment (PPE) used in operation? If so what types:

g. Are ventilation systems used during Large Scale Painting operations? If so, briefly explain:

1. Booth used:

2. Local exhaust/ventilation:

3. Outside area used:

4. What is the size(ft) of the room/booth for these operations:

Height:

Length:

Width:

h. Do processes involve the use of Solvents or Cleaners?

Provide MSDS for products used:

i. Has a noise survey been conducted on the equipment used in this area, or general noise measurements collected within this area, to determine the noise levels (<85 decibels)?

10. Painting Operations (Small Scale Operations - Aerosol):

a. What paints are used?:

Provide MSDS for paints used in painting operations:

Do the paints contain Chromates:

Do the paints contain Isocyanates:

b. What is the process for Small Scale Paint application:

Roller

Spray



Brush

Other

Are painting processes conducted inside hangar or work-bay areas? If yes, briefly explain:

c. Are paint strippers/removers used in component preparation for painting?

Provide MSDS for strippers/removers used:

d. Respiratory protection used by employees for Small Scale operations:

1. Manufacture:

2. Respiratory Protection Type, i.e. half face, full face, Powered Air Purifying Respirator (PAPR):

3. Cartridge type used on Respiratory Protection:

4. Is other Personal Protective Equipment (PPE) used in operation? If so what types:

e. Are ventilation systems used during Small Scale Painting operations? If so, briefly explain:

NA

1. Booth used:

2. Local exhaust/ventilation:

3. Outside area used:

4. What is the size(ft) of the room/booth for these operations:

Height:

Length:

Width:

f. Do processes involve the use of Solvents or Cleaners?

Provide MSDS for products used:

g. Has a noise survey been conducted on the equipment used in this area, or general noise measurements collected within this area, to determine the noise levels (<85 decibels)?

NA

11. Chemical Inventory/Hazardous Materials Listing:

- a. Is there a list of the Hazardous Materials and quantities on hand located at the facility?

Provide a copy of the list:

12. To date, How many Ergonomic Workstation Evaluations have been conducted at the facility? 75
13. What types of High Frequency Communication Systems are located at this facility, or what equipment has High Frequency Communication Systems authorized/installed for use. P. 1
14. What Radioactive Isotopes are processed at this facility (i.e. M43A1, M1AI, CAM and Calibration Equipment)?

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**APPENDIX H**

**CALIBRATION CERTIFICATES**

**Tektronix****Certificate of Calibration**

7323038

Certificate Page 1 of 2

**Instrument Identification**

Company ID: 607229

INDUSTRIAL HYGIENE SW

Non-Responsive

10510 SUPERFORTRESS AVE

SUITE C

MATHER, CA 95655

PO Number:

Non-Responsive

Instrument ID: 90480719

Model Number: TL-1

Manufacturer: KONICA MINOLTA

Serial Number: 90480719

Description: ILLUMINANCE METER

**Certificate Information**

Reason For Service: CALIBRATION

Type of Cal: NORMAL

As Found Condition: IN TOLERANCE

As Left Condition: LEFT AS FOUND

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

Remarks:

Technician:

Non-Responsive

Cal Date: 02May2013

Cal Due Date: 02May2014

Interval: 12 MONTHS

Temperature: 23.0 C

Humidity: 47.0 %

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

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

Approved By:   
Service Representative

Non-Responsive

**Calibration Standards**

NIST Traceable#	Inst. ID#	Description	Manufacturer	Model	Cal Date	Date Due
1700294966	17-1001076	6 STEEL RULE	STARETT	C416R-72	22Mar2013	22Mar2015
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
1700265565	4083RC	MULTIMETER	FLUKE	6842A	08Aug2012	26Aug2013

## Certificate of Calibration

Certificate No: 1102361QIG100105

Submitted By: INSW-NGB  
10510 SUPERFORTRESS AVE. SUITE  
MATHER, CA 95655

Serial Number: QIG100105  
Customer ID:  
Model: QC-10 CALIBRATOR

Date Received: 3/21/2013  
Date Issued: 3/29/2013  
Valid Until: 3/29/2014

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
4/10/2012	4/10/2013
2/2/2012	2/2/2014

Measurement Uncertainty:

$\pm 1.1\%$  ACCELERATION (0.100)  $\pm 1.4\%$  VAC  $\pm 0.012\%$  Hz  
Estimated at 95% Confidence Level (k=2)

Non-Responsive

Calibrated By:

vice Technician

3/29/2013

Non-Responsive

Reviewed/Approved By:

3/29/2013

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.



3M Oconomowoc  
Personal Safety Div.

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3M Detection Solutions  
1060 Corporate Center Drive  
Oconomowoc, WI 53066-4828  
www.3M.com/detection  
262 567 9157 800 245 0779  
262 567 4047 Fax

Page 2 of 2

## Certificate of Calibration

Certificate No: 1102361QIG100105

(A) indicates out of tolerance condition

Test Type	Nominal	Tolerance-	Tolerance+	As Found	As Left	Unit
AC OUT/1kHz	1.000	0.950	1.050	1.001	1.001	VAC
Calibration	114.0	113.7	114.3	114.0	114.0	dB
Frequency	1000	980	1020	991	991	Hz

\* indicates non accredited



## Certificate of Calibration

Certificate No: 1102361CDF020012

Submitted By: IHSW-NGB  
10510 SUPERFORTRESS AVE. SUITE  
MATHER, CA 95655

Serial Number: CDF020012 Date Received: 3/21/2013  
Customer ID: Date Issued: 3/28/2013  
Model: 2900 SLM Valid Until: 3/28/2014  
Test Conditions: Model Conditions:

Temperature: 18°C to 29°C As Found: IN TOLERANCE  
Humidity: 20% to 80% As Left: IN TOLERANCE  
Barometric Pressure: 890 mbar to 1050 mbar

### SubAssemblies:

Description: Serial Number:  
MICROPHONE OE 7052 1/2 IN. ELECTRET 25923  
TYPE 2 PREAMP NA

Calibration Procedure: 56V996

### Reference Standard(s):

I.D. Number	Device	Last Calibration Date	Calibration Due
ET0000364	FLUKE 45 MULTIMETER	2/18/2013	2/18/2015
ET0000556	B&K ENSEMBLE	4/10/2012	4/10/2013

### Measurement Uncertainty:

+/- 2.2% ACOUSTIC (0.19dB)/- 1.4% VAC +/- 0.1% VDC  
Estimated at 95% Confidence Level (k=2)

Calibrated By:

**Non-Responsive**

3/28/2013

Reviewed/Approved By:

3/28/2013

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: 1102361CDF020012

(A) indicates out of tolerance condition

Test Type	Nominal	Tolerance-	Tolerance+	As Found	As Left	Unit
Calibration	110.0	109.5	110.5	109.9	110.0	dB
A Weighting/125Hz	93.9	92.4	95.4	94.5	94.6	dB
A Weighting/250Hz	101.4	99.9	102.9	101.6	101.8	dB
A Weighting/500Hz	106.8	105.3	108.3	106.9	107.0	dB
A Weighting/1kHz	110.0	109.5	110.5	109.9	110.0	dB
A Weighting/2kHz	111.2	109.2	113.2	111.0	111.1	dB
C Weighting/125Hz	109.8	108.3	111.3	110.6	110.7	dB
C Weighting/250Hz	110.0	108.5	111.5	110.5	110.7	dB
C Weighting/500Hz	110.0	108.5	111.5	110.4	110.5	dB
C Weighting/1kHz	110.0	109.5	110.5	110.0	110.1	dB
C Weighting/2kHz	109.8	107.8	111.8	109.6	109.8	dB
Lin Weighting/125Hz	110.0	108.5	111.5	110.9	111.0	dB
Lin Weighting/250Hz	110.0	108.5	111.5	110.6	110.7	dB
Lin Weighting/500Hz	110.0	108.5	111.5	110.4	110.5	dB
Lin Weighting/1kHz	110.0	109.5	110.5	110.1	110.1	dB
Lin Weighting/2kHz	110.0	108.0	112.0	109.8	109.9	dB
Lin/60 - 120/120	120.0	118.8	121.2	120.3	120.4	dB
Lin/60 - 120/110	110.0	109.5	110.5	109.9	110.0	dB
Lin/60 - 120/100	100.0	98.8	101.2	99.8	99.9	dB
Lin/60 - 120/90	90.0	88.8	91.2	89.9	90.0	dB
Lin/40 - 100/90	90.0	88.8	91.2	89.7	89.8	dB
Lin/40 - 100/80	80.0	78.8	81.2	79.8	79.9	dB
Peak/60 - 120/120	123.0	121.5	124.5	122.4	123.1	dB
Peak/60 - 120/110	113.0	111.5	114.5	113.4	113.0	dB
Peak/60 - 120/100	103.0	101.5	104.5	102.8	103.0	dB
Peak/60 - 120/90	93.0	91.5	94.5	93.0	92.9	dB
DC Out/120dB	1.000	0.950	1.050	1.003	1.003	VDC
AC Out/120dB	3.160	2.920	3.430	3.143	3.154	VAC

\* indicates non accredited





MICRO PRECISION CALIBRATION  
22835 INDUSTRIAL PLACE  
GRASS VALLEY CA 95949  
530-268-1800

## Certificate of Calibration

Date: Oct 10, 2013

Cert No. 220081202166518

Customer:  
NETWORK ENVIRONMENTAL  
1141 SIBLEY STREET  
FOLSOM CA 95630

Work Order #: SAC-70062158

MPC Control #: CD3925  
Asset ID: 1307  
Gage Type: IAQ METER  
Manufacturer: TSI  
Model Number: 7545  
Size: N/A  
Temp/RH: 68.8°F / 34.5 %

Serial Number: T75450846008  
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 #
AV5000	ENVIRONMENTAL CHAMBER	BTX-475	0612421	ESPEC	Nov 26, 2013	2008120224653
AV2338	GAS TEST KIT	58L-400	BAL-400-2	GASCO AFFILIATES LLC	Nov 1, 2013	914776

### Procedures Used in this Event

Procedure Name	Description
MANUFACTURER	MANUAL REV CONTROL

Calibrating Technician:

# 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.





# 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	67.3 (19.6)	°F (°C)	SERIAL NUMBER	54110581
RELATIVE HUMIDITY	27	%RH		
BAROMETRIC PRESSURE	28.69 (971.6)	inHg (hPa)		

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

## - CALIBRATION VERIFICATION RESULTS -

PRESSURE VERIFICATION			SYSTEM V-106			Unit: inH <sub>2</sub> O ( Pa )	
#	STANDARD	MEASURED	ALLOWABLE RANGE	#	STANDARD	MEASURED	ALLOWABLE RANGE
1	-4.048 (-1068.0)	-4.069 (-1013.2)	-4.093 ~ -4.003 (-1019.3 ~ -996.6)	3	7.995 (1990.8)	8.055 (2005.7)	7.910 ~ 8.080 (1969.6 ~ 2011.9)
2	2.047 (509.7)	2.066 (514.4)	2.022 ~ 2.072 (503.4 ~ 516.0)	4	14.063 (3501.7)	14.142 (3521.4)	13.917 ~ 14.209 (3465.4 ~ 3537.9)

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	644 (3.27)	641 (3.26)	625~663 (3.17~3.37)	
2	35 (0.18)	35 (0.18)	32~38 (0.16~0.19)	8	992 (5.04)	991 (5.03)	963~1022 (4.89~5.19)	
3	64 (0.33)	64 (0.33)	61~67 (0.31~0.34)	9	1477 (7.50)	1479 (7.51)	1433~1522 (7.28~7.73)	
4	99 (0.50)	98 (0.50)	96~102 (0.49~0.52)	10	2484 (12.62)	2486 (12.63)	2409~2559 (12.24~13.00)	
5	158 (0.80)	157 (0.80)	153~163 (0.78~0.83)	11	4476 (22.74)	4488 (22.80)	4342~4611 (22.06~23.42)	
6	333 (1.69)	332 (1.69)	323~343 (1.64~1.74)	12	7979 (40.53)	8025 (40.77)	7739~8218 (39.32~41.75)	

TEMPERATURE VERIFICATION				SYSTEM T-119				Unit: °F (°C)	
#	STANDARD	MEASURED	ALLOWABLE RANGE	#	STANDARD	MEASURED	ALLOWABLE RANGE		
1	32.0 (0.0)	32.2 (0.1)	31.5-32.5 (-0.3-0.3)	2	140.0 (60.0)	140.1 (60.1)	139.5-140.5 (59.7-60.3)		

HUMIDITY VERIFICATION				SYSTEM H-102				Unit: %RH
#	STANDARD	MEASURED	ALLOWABLE RANGE	#	STANDARD	MEASURED	ALLOWABLE RANGE	
1	10.0	9.4	7.8-12.2	4	70.0	68.6	67.8-72.2	
2	30.0	28.6	27.8-32.2	5	90.0	89.1	87.8-92.2	
3	50.0	48.8	47.8-52.2					

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	E001477	07-12-12	07-12-13
Pressure	E001558	12-05-12	06-05-13
Velocity	E004603	09-19-12	09-19-17
Temperature	E001800	01-16-13	07-16-13
DC Voltage	E001658	07-13-12	01-13-14
Pressure	E001719	12-10-12	06-10-13
Barometric Pressure	E001992	04-06-12	04-06-12
Humidity	E003539	09-25-12	03-25-13

Measurement Variable	System ID	Last Cal.	Cal. Due
Temperature	E001644	01-17-13	07-17-13
Pressure	E001560	12-05-12	06-05-13
Barometric Pressure	E001992	04-06-12	04-06-13
Temperature	E001799	01-16-13	07-16-13
Temperature	E004402	12-05-12	06-05-13
Pressure	E001721	12-10-12	06-10-13
Velocity	E004603	09-19-12	09-19-17

**Non-Responsive**

March 19, 2013

CALIBRATED

DATE

00000000000000000000





TABLE 1  
LEAD WIPE SAMPLE RESULTS  
HELENA IFR  
HELENA, MT  
AUGUST 14, 2013

Sample Number	Sample Area	Sample Location	Results ( $\mu\text{g}/\text{ft}^2$ )	ARNG Standard ( $\mu\text{g}/\text{ft}^2$ )
81413-HLNIFR-01	Bullet trap access	Floor	140	$\leq 200$
81413-HLNIFR-02	Beamhit practice area	Floor	77	$\leq 200$
81413-HLNIFR-03	IFR entrance (inside)	Floor	8.3	$\leq 200$
<b>81413-HLNIFR-04</b>	<b>Lane 5</b>	<b>Floor near bullet trap</b>	<b>510</b>	$\leq 200$
81413-HLNIFR-05	Lane 3	Floor beneath shooter's table	43	$\leq 200$

$\mu\text{g}/\text{ft}^2$  = micrograms per square foot  
ARNG = Army National Guard  
**Bold** = Above ARNG Standard limit

**APPENDIX J**

**LABORATORY REPORTS**



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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

E-mail: **Non-Responsive**

Workorder: 34-1323131

Client Project ID: 013.IH1449.16/Helena IFR

Purchase Order: 013.IH1449.16

Project Manager: **Non-Responsive**

## Analytical Results

Sample ID: 081413-HLNIFR-01	Media: Ghost Wipe	Collected: 08/14/2013
Lab ID: 1323131001	Sampling Location: Helena 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	140	140 2.5

Sample ID: 081413-HLNIFR-02	Media: Ghost Wipe	Collected: 08/14/2013
Lab ID: 1323131002	Sampling Location: Helena 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	77	77 6.3

Sample ID: 081413-HLNIFR-03	Media: Ghost Wipe	Collected: 08/14/2013
Lab ID: 1323131003	Sampling Location: Helena 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	8.3	8.3 6.3

Sample ID: 081413-HLNIFR-04	Media: Ghost Wipe	Collected: 08/14/2013
Lab ID: 1323131004	Sampling Location: Helena 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	510	510 6.3

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

Environmental

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNERS





## ANALYTICAL REPORT

Workorder: 34-1323131  
Client Project ID: 013.IH1449.16/Helena IFR  
Purchase Order: 013.IH1449.16  
Project Manager: Non-Responsive

## Analytical Results

Sample ID: 081413-HLNIFR-05		Media: Ghost Wipe	Collected: 08/14/2013
Lab ID: 1323131005		Sampling Location: Helena IFR	Received: 08/19/2013
Method: NIOSH 7300 Mod.		Sampling Parameter: Area 1 ft²	Prepared: 08/20/2013
			Analyzed: 08/22/2013
Analyte	ug/sample	ug/ft²	RL (ug/sample)
Lead	43	43	6.3

Sample ID: 081413-HLNIFR-Blank		Media: Ghost Wipe	Collected: 08/14/2013
Lab ID: 1323131006		Sampling Location: Helena 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/ft²	RL (ug/sample)
Lead	<1.3	NA	1.3

## Comments

Sample: 1323131001

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: 1323131002

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: 1323131003

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: 1323131004

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: 1323131005

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

## Report Authorization

Method	Non-Responsive
NIOSH 7300 Mod.	

## Laboratory Contact Information

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

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



## ANALYTICAL REPORT

Workorder: 34-1323131  
Client Project ID: 013.IH1449.16/Helena IFR  
Purchase Order: 013.IH1449.16  
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/bdwl/labservice.htm">http://ndep.nv.gov/bdwl/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)	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.







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**APPENDIX K**

**EMPLOYEE LIST**

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**SUPPORTING DOCUMENTATION NOT RECEIVED**



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**APPENDIX L**

**IHSW VIOLATION LOG**



# Industrial Hygiene Southwest Violation Inventory Log

## LOG OF SCHEDULE OF CORRECTIVE ACTION - COMPLIANCE WITH SAFETY AND HEALTH STANDARDS Helena IFR - Helena, MT

CONTROL NUMBER	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/NCOIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
MTHIFR- 08142013-4.1.5	CO <sub>2</sub> cylinders are unsecured and missing protective collars	IFR	3	Secure CO <sub>2</sub> cylinders and add protective collars to prevent damage and tipping. Ensure cylinders are sealed when not in use.					29 CFR 1910.253b(2)(ii)
MTHIFR- 08142013-4.1.6	Sweeping inside the range	IFR	2	Remove the broom from the range and prohibit all sweeping of the range floor until the range has been cleaned of lead and subsequent samples validate the floor is clean.					NGR 385-15 (2- 3e)
MTHIFR- 08142013- Executive Summary-C	No signage to warn personnel of lead hazard	IFR	2	Post warning signage at the entryway(s) of the facility and on Converted IFR door(s) to warn all personnel but especially pregnant or nursing females and children under seven years of age that there is a potential for a lead dust exposure in this facility/area. Make sure staff and maintenance personnel are aware of the associated hazards of lead exposure.					Prudent Industrial Hygiene Practice
MTHIFR- 08142013-5.3 & Executive Summary-D	Lead concentrations exceed established criteria	IFR	2	Review the Armory SOP for lead cleanup and follow the guidelines for cleaning. Have follow-up testing conducted to meet acceptable concentrations.					29 CFR 1910.1025 (h)(1) & NG Pam 420-15





# Industrial Hygiene Southwest

## Violation Inventory Log

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

Helena IFR - Helena, MT

CONTROL NUMBER <input type="checkbox"/>	HAZARD DESCRIPTION	SITE	RAC	CORRECTIVE ACTIONS (Abatement Plan)	SUSPENSE DATE	ACTION OIC/NCOIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
MTHIFR- 08142013-5.5	Low temperatures in range	IFR	4	Increase temperatures inside the range in order to meet the minimum 68F required.					ASHRAE Standard 55-1992
MTHIFR- 08142013-5.6.1	Fire extinguisher inspections are out of date.	IFR	4	Inspect all fire extinguishers monthly and document the date and inspector's signature on the inspection tag.					29 CFR 1910.157 (e)(2)

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NOT PERFORMED AT THIS FACILITY



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**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 IHSAV report for Helena IFR. The paragraphs are numbered to correspond to the sections where first noted. (i.e., N.4.0 describes the following: the N is Conclusions & Recommendations and the 4.0 corresponds back to Section 4 – Observations and Recommendations).

### 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** – Reconfigure the firing lanes to ensure each lane is at least 4 feet wide. Seal the hole beneath the junction box located on the upper western wall to prevent the migration of lead dust from the IFR interior.

**N4.1.3 IFR Bullet Trap** – Cover the exposed flat surface, which is approximately 10 inches wide, at the bullet trap to reduce potential for ricochet.

**N4.1.4 Targets & Target Carriers** – Repair the target retrieval systems on lanes 1 through 3 to make them functional.

**N4.1.6 Range Maintenance** – Ensure that a Range Custodian is assigned and responsible for maintaining the range.

**N4.1.9 Range SOP** – Develop and maintain a written range SOP onsite.

**N4.1.10 Visitor Log** – Develop and maintain a written visitor log for the IFR.

**N4.2 Ventilation** – Ensure the ventilation system provides adequate airflow across the supply plenum and in the 3 shooting positions at each firing line.

**NExecutive Summary** – Post signage at the entryway(s) of the facility and on converted IFR door(s) to warn personnel of lead hazard.



### ***FACILITY RECOMMENDATIONS***

**N4.1.5 Materials Storage** – Remove the stored materials from obstructing the plenum wall in order to allow for desired airflow.

**N4.1.5 Materials Storage (Gas Cylinders)** – Ensure all compressed gas cylinders are stored in a manner that prevents them from tipping. This is typically done by using a storage rack and/or restraining straps. Also, ensure all compressed gas cylinders are sealed when not in use.

**N4.1.6 Range Maintenance** – Remove the broom from the IFR and prohibit dry sweeping of the floor until the range has been cleaned and follow-up lead wipe sampling indicates that the range is sufficiently clean.

**N5.3 Lead Sampling** – Clean the IFR floor in accordance with the “Armory Cleanup and Follow-up Housekeeping Recommendations SOP.” Have follow-up testing conducted to ensure cleaning was sufficient and the lead concentrations are within the allowable ranges.

**N5.5 Indoor Air Quality** – Increase the temperature inside the range to meet the minimum temperature (68°F) established by ASHRAE.

**N5.6.1 Fire Extinguishers** – Ensure all fire extinguishers are inspected monthly and serviced annually.

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**APPENDIX O**

**DD FORMS 2214**



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FY13 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
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

Helena IF  
Helena, M

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# FACILITY INFORMATION

(This information is to be used for internal purposes only.)

(This information is to be used for internal purposes only.)

1. Facility Name: [REDACTED]

2. Facility Location: [REDACTED]

3. Facility Type: [REDACTED]

4. Facility Status: [REDACTED]

5. Facility Description: [REDACTED]

6. Facility Capacity: [REDACTED]

7. Facility Owner: [REDACTED]

8. Facility Manager: [REDACTED]

9. Facility Address: [REDACTED]

10. Facility Phone: [REDACTED]

## APPENDIX Q

## FACILITY INFORMATION

11. Facility Name: [REDACTED]

12. Facility Location: [REDACTED]

13. Facility Type: [REDACTED]

14. Facility Status: [REDACTED]

15. Facility Description: [REDACTED]

16. Facility Capacity: [REDACTED]

17. Facility Owner: [REDACTED]

18. Facility Manager: [REDACTED]

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

1. Date Prepared: 14 August, 2013
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: **Helena Armed Forces Rescue Center- IFR**
4. Facility Address: **1956 Mt Majo, Fort Harrison, MT 59636**
5. Primary Unit Assigned to Facility (Ensure to capture and provide Unit Identification Code (UIC)): **Non-Responsive**
6. Co-Tenant Units Assigned or Working Within IFR (LIST ALL): **0**
7. Square Ft. Area of Facility: **Unknown**
8. Work Schedule: **Monday- Friday, 0800-1700**
9. Number of work bays: **1**
10. Equipment Density and Type:
  - a. List Equipment Nomenclature Serviced or Maintained at Facility: **N/A**
  - b. List Total Number for Each Nomenclature Serviced or Maintained at Facility: **N/A**
11. Total Number of Personnel: **3**
12. No. of Admin. Personnel (Include Status – AGR, Fed. Tech., IDT, State or Contract Employee): **3 AGR**
13. No. of Maintenance Personnel (Include Status – AGR, Fed. Tech., IDT, State or Contract Employee): **0**
14. Total Number of Personnel Enrolled in the Hearing Conservation Program: **0**
15. Total Number of Personnel Enrolled in the Respiratory Protection Program: **0**
16. Total Number of Personnel Enrolled in the Medical Surveillance Program: **0**

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

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

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

**Non-Responsive**

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

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

**Non-Responsive**

20. Facility Telephone Number: 406-324-348





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** 916-353-2360.

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 Eual Pinder, **Non-Responsive** (916) 854-1490/ (916) 812-5838 or Maria Dean, (916) 854-1492, **Non-Responsive**

**Non-Responsive**

NGB, IHSW, CIV  
Industrial Hygiene

CF:  
FMO  
OHN  
SSO

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**APPENDIX R**

**SAFETY RELATED INFORMATION**

## **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.

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**APPENDIX S**

**NOISE DOSIMETRY DATA**



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NOT PERFORMED AT THIS FACILITY

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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 *Fant Harrison*

Date *Aug 14, 2013*

Range Custodian **Non-Responsive**

Telephone *(408) 324-3548*

### Part 1, Physical Safety Inspection

#### A. Building Envelope

- Yes 1 Each firing lane is at least 4 feet wide. [1-17a(1)(a)] *Not all lanes. Lanes 1 & 7 @ 53", Lanes 2, 3, 4, 5, & 6 @ 41".*
- ☒ 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)]. *Not including equipment currently stored downrange.*
- ☒ 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)]
- ☒ 4 There are no open floor drains in the range [1-17a(2)(c)]
- ☒ 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)]. *Junction box on upper W wall is 20' S of back wall is not sealed against CMU wall.*
- ☒ 7 The interior surfaces of the range floor, walls, and ceiling have no protruding edges or devices [DG 415-1, App. A, 3-1d]
- ☒ 8 The roof provides ballistic security. [DG 415-1, App. A, 3-1e(1)] *Concrete*
- ☒ 9 The walls provide ballistic security. [DG 415-1, App. A, 3-1f(1)] *CMU block Initial 45' of range has metal acoustical paneling on walls and ceiling back plenum wall.*
- ☒ 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)]
- ☒ 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]

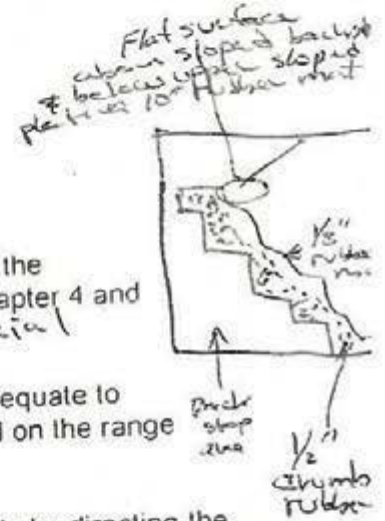
#### B. Range Lighting



- 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)]
- 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)] *No, downrange lighting begins @ 235' & target, lighting is within 4' of target*
- Yes 5 Emergency lights are provided behind the firing line and are in working condition. [1-17c(1)(e)] *2-bulb Emerg Light Unit behind firing line on S wall not operational*
- Yes 6 Exit lights are provided and working as required [1-17c(1)(f)] *No*
- Yes 7 Lighting of at least 30 foot-candles is provided behind the bullet trap for maintenance (if applicable). [1-17c(1)(g)] *30 fc @ fluorescent light panels (2) mounted on N wall. Between light panels 15-20 fc candles.*
- 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)] *Unable to verify*
- 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)] *Not plate/sand trap design - i.e. 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)]
- 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)] *Not louver or venetian blind system - i.e. 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 (Rubber mat system)*



- 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). *Retrieval system not function on lanes 1, 2, & 3 due to Beamit/LMTS (Laser Marksmanship Training system) equipment*
- ☒ 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)] *Unable to verify.*

#### E. Range Use

- Yes 1 The range is not used for any purpose other than firing. [1-18a] *Currently set up with Beamit/LMTS system which occupies lanes 1, 2, & 3.*
- ☒ Yes 2 No equipment or furniture is stored or maintained in the range, plenum area, or behind the bullet trap. [1-17d]
- ☒ Yes 3 No additional clothing or equipment is brought into the range [1-19h]
- ☒ Yes 4 Personnel are not permitted in the plenum area during firing even if designed for observation. [1-19a] *Interlock on door.*
- ☒ 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] *Beam system located 4' downrange sets off audible alarm.*
- Yes 6 All areas directly in front of the plenum walls are kept clear at all times. [1-19c] *Items, boxes, CO cylinder, HEPA vacuum etc stored along base of plenum wall obstructing 10% of plenum surface*
- ☒ Yes 7 Pellets, BBs, magnum and armor piercing rounds are not used in the range. [1-19g] *Pellets stored inside & outside of ammunition allowance*
- Yes 8 The ventilation system is in operation at all times during firing or cleaning. [1-18c] *Range is not in use. Unable to verify*
- 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], *Located 4' from range door. Not in recessed cabinet. Serviced 2/2013. Not checked monthly.*

#### F. Range Maintenance

- Yes 1 Dry sweeping does not occur in the range. [1-19e] *Brass is currently stored in the range. HEPA vacuum present in range.*
- Yes 2 No brooms are located in the range [1-19e], *Brass is stored in the range.*
- ☒ Yes 3 A range custodian is appointed for the range who is fully trained and aware of his/her responsibilities. [1-13c]

#### G. Personnel Protective Equipment



- 4
- Yes 1. All personnel in the range during firing wear ANSI approved eye protection. [1-20a]  
*Range is not active. Unable to verify.*
- Yes 2. All personnel in the range during firing wear ANSI approved hearing protection. [1-20b]  
*Range is inactive. Unable to verify.*  
*standard trauma first aid kit. well stocked not*  
*No expiration dates marked on supplies.*

#### 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] *"Warning Do not enter while range is in use"*  
*Also interlock attached to access door.*

#### 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]  
*No written SOP available*
- \* 2. The range SOP includes as a minimum the following: [1-22b] *No written SOP available*
- 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] *No log*
  - 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] *Insured available, NO*
- Yes 3. The initial inspection report includes air-sampling data. [1-24b]
- Yes 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]
- Yes 7. Range safety officer(s) is/are designated. [1-13c]

## K. New and Renovated Ranges

- ☒ Yes 1. No doors are installed in the plenum wall.
- ☒ Yes 2. Plenum area is at least 4 feet deep.
- ☒ Yes 3. An access door is installed behind the bullet trap
- ☒ Yes 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)]
- ☒ 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)] *6 drops from 1" header 3 vents/shoot exceeding 600 fpm. Vents face S, away from firing line. Flow is greater than 600 fpm.*
- ☒ Yes 6. Air exiting through holes in the plenum wall has a velocity between 400 and 600 fpm [1-17b(1)(f)] *No, up to 380*
- ☒ 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)]
- 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)] *Unable to measure smoke test at door says Yes, negative pressure*
- 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)] *NA (Not re-circulated)*
- 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] *Unable to verify.*
- ☒ 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)] *Powered system i. 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)]
- ☒ Yes 15. Range air temperature is between 65 degrees and 80 degrees Fahrenheit [1-17b(1)(n)]

## 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 *Unsure to locate manometer.*
- ☒ 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 *Unsure to verify.*

### Part 3, Air Sampling

- Yes 1 The physical safety inspection, Part 1 of the range inspection checklist, was completed and all requirements met on: *No*
- Yes 2 The ventilation inspection, Part 2 of the range inspection checklist, was completed and all requirements met on: *No*
- 3 Air sampling has been scheduled for: *None Scheduled*
- Print and sign: \_\_\_\_\_  
Position: \_\_\_\_\_
- 4 Air sampling was completed on: *NA*
- 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



FY 13 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				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
Number of design review packages which required IH evaluation and recommendations applicable to occupational health concerns		953-02-20				IHT

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## ARMY NATIONAL GUARD INDUSTRIAL HYGIENE - SOUTHWEST

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# Industrial Hygiene Site Assistance Visit

## Kalispell Armory

2989 HWY 93 North  
Kalispell, MT 59901

27 Oct 2012

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-IHSW

23 April 2013

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

FOR Commander Kalispell Armory, 2989 HWY 93 North, Kalispell, MT 59901

SUBJECT: Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for the Kalispell  
Armory, 2989 HWY 93 North Kalispell, Montana conducted on 27 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 Kalispell Armory at 2989 HWY 93 North, Kalispell, MT on 27 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. Ensure that the fire extinguishers are inspected and documented on a monthly basis. Have fire extinguishers Inspected on an annual basis. (para. 4.11.2) (RAC 3)

**ARNG-CSG-IHSW**

**SUBJECT:** Executive Summary for Industrial Hygiene Site Assistance Visit (IHSAV) for the Kalispell Armory, 2989 HWY 93 North Kalispell, Montana conducted on 27 September 2012.

- b. Update Chemical Inventory list that represents the materials on hand at this facility. (para. 4.7.1) (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.



**Industrial Hygiene Southwest**

**Violation Inventory Log**

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

**Kalispell Armory, Kalispell, MT**



CONTROL NUMBER	HAZARD DESCRIPTION	SITE	RAC	HAZARD COUNTERMEASURE	SUSPENSE DATE	ACTION OIC/NCOIC	Estimated Cost(s)	DATE CORRECTED	REFERENCES
CLOSED									
MTKALISPELL- 92712 - 4.7.1	Chemical inventory out of date.	Armory - Flammable Lockers		Update the chemical inventories of the Flammable Lockers to represent the materials on hand at the facility.					29 CFR 1910.1200(b)(3)(ii)
MTKALISPELL- 92712 - 4.11.2	No evidence of monthly fire extinguisher inspections.	Armory		Ensure that the fire extinguishers are inspected and documented on a monthly basis.					29 CFR 1910.157(e)(2)
MTKALISPELL- 92712 - 4.11.2	Annual fire extinguisher inspections out of date as of August.	Armory		Have fire extinguishers inspected on an annual basis.					29 CFR 1910.157(e)(3)



## ***ARMORY***

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

#### **Materials Needed:**

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

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

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

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

### **Post-Cleanup Precautionary Measures:**

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

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

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

### **Initial Armory Cleanup:**

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



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

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

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

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

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

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

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



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

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

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

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

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

**Industrial Hygiene Site Assistance Visit**  
**Kalispell Armory**  
**Kalispell, MT**  
**September 27, 2012**



INDUSTRIAL HYGIENE SITE ASSISTANCE VISIT (IHS AV)

KALISPELL ARMORY  
2989 HIGHWAY 93 NORTH  
KALISPELL, MONTANA 59901

September 27, 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.IH1374.60

*Prepared by:*

**Non-Responsive**

**Non-Responsive**

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## EXECUTIVE SUMMARY

On September 27, 2012, **Non-Responsive** an Industrial Hygiene Field Technician of NES, Inc. (NES) conducted an Industrial Hygiene Site Assistance Visit (IHSAB) at the Kalispell Armory located at 2989 Highway 93 North in Kalispell, Montana. The primary point of contact for information gathered during this survey was **Non-Responsive on-Responsive** may be reached by phone at (406) 758-3100, or by email at **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: **Non-Responsive** went above and beyond expectations to help NES complete the IHSAB.



## 1.0 INTRODUCTION

On September 27, 2012, [Non-Responsive] an Industrial Hygiene Field Technician of NES, Inc. (NES) conducted an Industrial Hygiene Site Assistance Visit (IHS AV) at the Kalispell Armory located at 2989 Highway 93 North in Kalispell, Montana. The primary point of contact for information gathered during this survey was [Non-Responsive] may be reached by phone at (406) 758-3100, or by email at [Non-Responsive]

## 1.1 IHS AV Objectives

The objective of the IHS AV 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 in order 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 Kalispell Armory has fifteen full time guard members. The Armory has offices used for administrative, veteran and recruiting purposes. The Armory contains a drill floor, storage rooms, and a kitchen for Army National Guard member training functions. There are also classrooms, an indoor firing range and a gym. There are three civilian employees that work at this Armory. Civilian functions are carried out in the Kalispell Armory approximately once a week. The civilian functions include training activities for the Civilian Air Patrol (CAP). The drill floor is occasionally used by Army National Guard members as a staging area and as an area to clean weapons after they are fired.

### **3.0 METHODS**

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

Lead wipe samples were collected on horizontal work and floor surfaces in various locations throughout the 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.

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

The painted areas of the interior and exterior of the Armory were inspected for peeling paint. 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. Water impacted areas, if observed, were noted 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 performed. If suspected asbestos containing material (ACM) was observed a bulk sample was collected.

#### **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 consists 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 TSI model 8551 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. See Appendix E for indoor air quality (IAQ) data.

### **3.6 Illumination Level Monitoring**

Illumination measurements were taken throughout the Kalispell 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 IHSAV.

### **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 Ventilation Survey**

Air velocity and flow measurements were measured on the kitchen hood over the gas range using a TSI VelociCalc™, 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**

High noise areas, if any found, were inspected and tested using a Quest Sound Level meter, model 2900.

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

A safety walk-through evaluation of the Kalispell Armory was performed to document the presence of fire alarms, to determine if fire extinguishers were properly mounted and are current on their monthly and annual inspections, to test ground fault circuit interrupter (GFCI) electrical outlets, to inspect if eyewash stations 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™ Meter	8386A	84110581	March 2012
TSI IAQ-Calc™ Meter	8551	51380	November 2012
Quest Sound Level Meter	2900	CDF020012	March 2012
Konica Minolta Light Meter	TL-1	279029	May 2012

Please see Appendix H for a complete inventory of calibration certificates for equipment that may have been 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 Kalispell Armory to determine if housekeeping efforts are successful. The US Department of Housing and Urban Development (HUD), recommends a concentration of less than 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 eight 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 surface area. The five samples from the drill floor were below the detection limit of the analytical laboratory equipment, which is  $< 2.5 \mu\text{g}/\text{ft}^2$ .

Additional lead wipe sampling was taken from approximately 25% of the rest of the building. The three additional areas samples were collected from the following areas: the indoor firing range and the main hallway. The analytical results for each of the aforementioned areas were below 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/HUD Standard ( $\mu\text{g}/\text{ft}^2$ )
92712-Kalispell-01	Drill Floor	Southeast corner of drill floor, floor area sample	$< 2.5$	$\leq 40$
92712-Kalispell-02	Drill Floor	Northeast corner of drill floor, floor area sample	$< 2.5$	$\leq 40$
92712-Kalispell-03	Drill Floor	Center, middle of drill floor, floor area sample	$< 2.5$	$\leq 40$
92712-Kalispell-04	Drill Floor	Northwest corner of drill floor, floor area sample	$< 2.5$	$\leq 40$
92712-Kalispell-05	Drill Floor	Southwest corner of drill floor, floor area sample	$< 2.5$	$\leq 40$
92712-Kalispell-06	IFR	North area of room floor sample	$< 2.5$	$\leq 200$
92712-Kalispell-07	IFR	South area of room floor sample	$< 2.5$	$\leq 200$
92712-Kalispell-08	Hallway	Middle of floor area sample	$< 2.5$	$\leq 40$



See Appendix I, table 1 for lead wipe sampling analytical results. The analytical laboratory results are provided in Appendix J.

#### 4.2 Painted Surface Evaluation

The painted surfaces of the Armory, interior and exterior, were visually inspected for peeling paint. During the IHS AV no peeling paint was observed. Therefore, bulk paint chip samples were not collected.

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

During the IHS AV, the Armory was visually inspected for areas of water damage and possible fungal growth. The **Non-Responsive** was also asked regarding any areas known to have previous water damage. No areas were observed or noted to have a history of water damage.

#### 4.4 Asbestos Documentation

The building was constructed in 2006. No areas were observed to contain suspected asbestos containing material. No documentation was available on site at the facility stating whether the building contained asbestos.

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

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

The average outdoor carbon dioxide concentration at the time of the survey was approximately 370 ppm; therefore, the maximum indoor CO<sub>2</sub> level recommended by the ASHRAE Standard would be 1,070 ppm. Carbon dioxide concentrations throughout the facility were lower than 1,070 ppm. The highest CO<sub>2</sub> concentration measured was 454 ppm in the recruiting office.

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 69.6 to 72.6°F. Relative humidity measured between 36.8 and 39.1% during the testing period.

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

Illumination levels were measured throughout the Kalispell 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.

The illumination levels at the drill floor ranged from 30.2 to 33.4 FC. Illumination ranged from 53.5 to 54.7 in the office. Based on the above criteria, the lighting on the drill floor and the office is adequate for tasks performed.

#### **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 separate binders, one for each satellite storage location (i.e. flammable storage room or cabinet). A copy of the chemical inventory is provided in Appendix D.

At the time of the IHSAV the chemical inventory was not representative of the chemicals on hand at the Kalispell Armory.

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

There were two HAZMAT storage lockers located at the Armory. 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 Petroleum, Oil & Lubricants Storage**

Not applicable to the facility as stated by Nick Bedwell.

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

The following training documentation was found at the site:

- Hazard Communication Training

#### **4.9 Ventilation Survey**

The Kalispell Armory has two kitchen canopy hoods. One measured 40 inches by 48 inches. The second hood measured 176 inches by 54 inches. Tests on the two 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 1991 which sets criterion 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**

Sound-level measurements were not taken at the Kalispell Armory. No hazardous high noise areas were observed during the time of the IHSAV.

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

1. Housekeeping throughout the facility was great.
2. Fire extinguishers are strategically located throughout the Armory; however the fire extinguishers were out of date for annual inspections as of August 2011. No documentation of monthly fire extinguisher inspections was available.
3. Fire evacuation plan is posted in highly visible areas throughout the building. Egress routes are marked on the fire evacuation plan.
4. GFCI electrical 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, *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 IHSAV was reviewed and approved by:

**Non-Responsive**

April 19, 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)

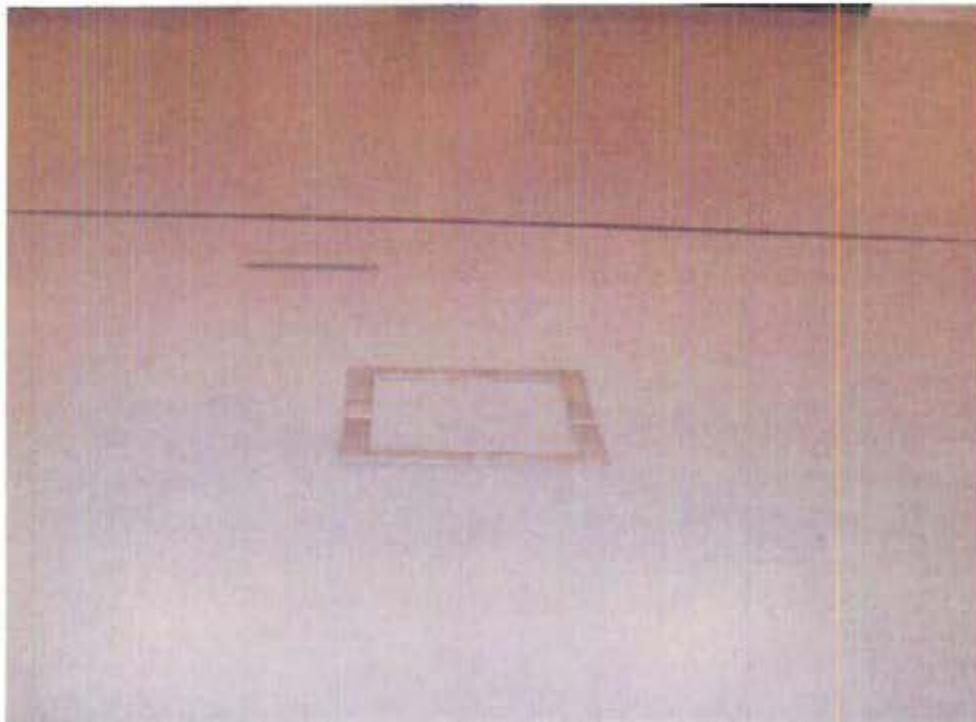
Unlike the OSHA PELs, the ACGIH TLVs are not consensus standards; however, TLVs represent a scientific opinion based on a review of existing peer-reviewed scientific literature by committees of experts in public health and related sciences.

### **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**

**KALISPELL ARMORY  
KALISPELL, MONTANA  
SEPTEMBER 27, 2012**



**Photo 3:** Lead wipe floor sample 92712-Kalispell-02 which was taken from the northeast corner of the drill floor.



**Photo 4:** Lead wipe floor sample 92712-Kalispell-03 which was taken from the center of the drill floor.



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**PHOTO LOG**

**KALISPELL ARMORY  
KALISPELL, MONTANA  
SEPTEMBER 27, 2012**



**Photo 5:** Lead wipe floor sample 92712-Kalispell-04 which was taken from the northwest corner of the drill floor.



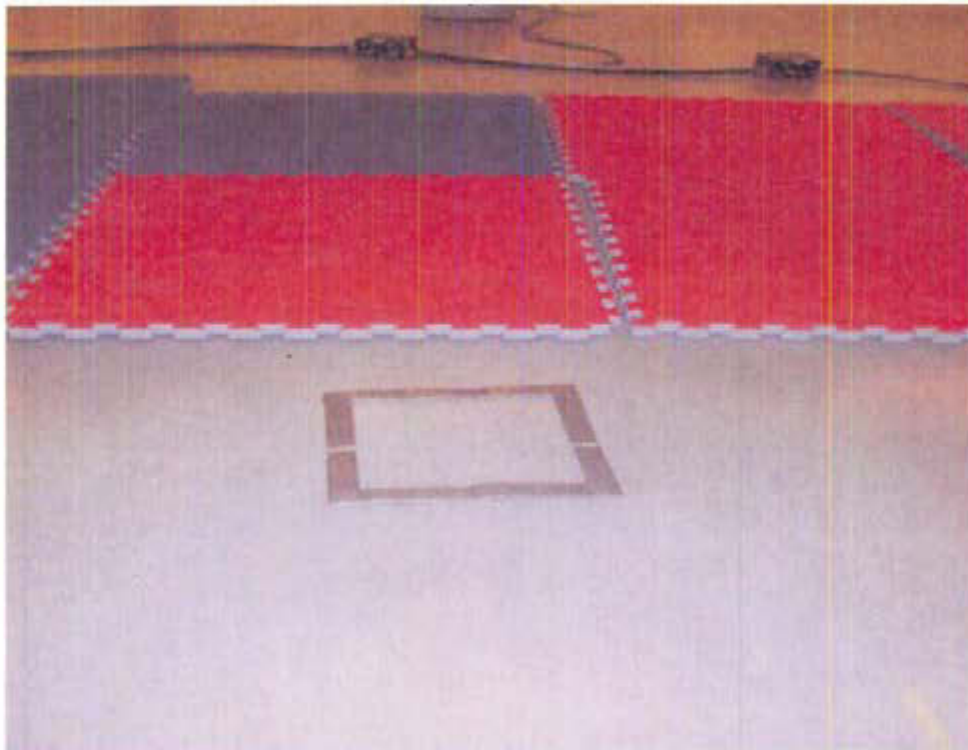
**Photo 6:** Lead wipe floor sample 92712-Kalispell-05 which was taken from the southwest corner of the drill floor.

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**PHOTO LOG**

**KALISPELL ARMORY  
KALISPELL, MONTANA  
SEPTEMBER 27, 2012**



**Photo 7: Lead wipe floor sample 92712-Kalispell-06 which was taken from the east end of the Indoor Firing Range.**



**Photo 8: Lead wipe floor sample 92712-Kalispell-07 which was taken from the west end of the Indoor Firing Range.**

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**PHOTO LOG**

**KALISPELL ARMORY  
KALISPELL, MONTANA  
SEPTEMBER 27, 2012**



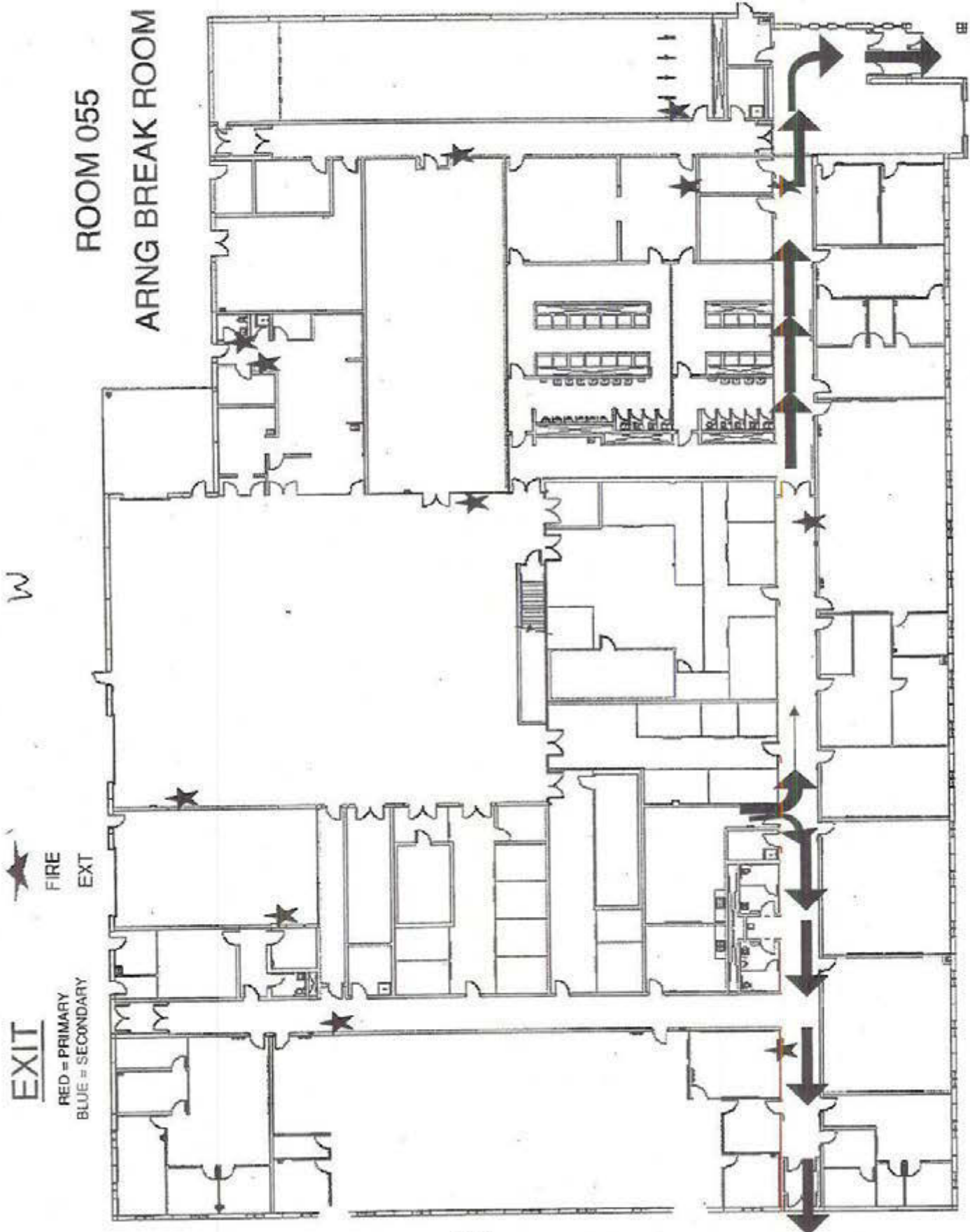
**Photo 9: Lead wipe floor sample 92712-Kalispell-08 which was taken from the hallway floor.**



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**CHEMICAL INVENTORY**

**KALISPELL ARMORY  
KALISPELL, MONTANA  
SEPTEMBER 27, 2012**

Item	NSN	Manufacturer
Adhesive Tent Patch	8040-00-264-3848	TACC International
Deep Gloss	NA	Johnson Delivery
Eco Sure Gloss Black Paint	8010-01-331-6107	Skilcraft
<b>DESCRIPTION: Gloss Black Spray Paint Whit Label</b>		
Horizon Glass Cleaner	7930-00-F03-8660	SC Johnson Wax
LSA	9150-00-68-4241	Castrol North America
Lube Oil Shredder	NA	Fellows Mfg. Corp.
Paint, Oil Based, Gold	NA	Rust-Oleum
So Sure Black Paint	8010-00-616-9143	Skilcraft
<b>DESCRIPTION: Black Spray Paint Rainbow Can Label</b>		
So Sure Tan Paint	8010-00-348-7713	Skilcraft
<b>DESCRIPTION: Tan Spray Paint Rainbow Label</b>		
Spray Adhesive	8040-00-171-1535	Stag Enterprise
<b>DESCRIPTION: Spray Adhesive</b>		
Spray Paint Gloss Beige	8010-01-350-5252	LHB So-Sure
Spray Paint Gloss White	8010-00-290-6983	LHB So-Sure
Spray Paint Mask Out	6850-00-N01-9403	Uline



KALISPELL ARMORY  
KALISPELL, MONTANA  
SEPTEMBER 27, 2012

Location	CO <sub>2</sub> max permissible level 1,070 ppm	Temperature permissible range 68 - 75°F	RH% permissible range 30-60%	CO max permissible range 200 ppm.
Administrative Office	387	69.6	39.1	0
Hallway	381	71.0	38.6	0
Men's Restroom	397	72.0	37.4	0
Drill Floor	433	70.1	36.8	1
Storage Room	378	71.6	36.0	1
Lobby Entrance	417	72.6	37.0	1
Indoor Firing Range	454	72.1	37.2	1

CO<sub>2</sub> = Carbon Dioxide  
ppm = parts per million  
°F = Degrees Fahrenheit  
RH = Relative Humidity  
% = Percent  
CO = Carbon Monoxide



**KALISPELL ARMORY  
KALISPELL, MONTANA  
SEPTEMBER 27, 2012**

Location and Description	Light – FC	Minimum Lighting Requirements – FC
Center of Hallway	37.7	10
Center of Storage Room	24.9	10
Center of Lobby	27.7	10
North Corner of Drill Floor	30.2	30
South Corner of Drill Floor	31.6	30
East Corner of Drill Floor	32.7	30
West Corner of Drill Floor	33.4	30
The Office Desk	53.5	50
Office	54.7	50

FC = foot candle measurement

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**LOCAL EXHAUST VENTILATION SYSTEM MEASUREMENTS**

**KALISPELL ARMORY  
KALISPELL, MONTANA  
SEPTEMBER 27, 2012**

**Kitchen Canopy Hood – 40" x 48" Rectangular**

Monitoring Location	Linear Feet per Minute (LFM)	Cubic Feet per Minute (CFM)
Face of Canopy Hood	68.25 LFM	910 CFM

**Kitchen Canopy Hood – 54" x 176" Rectangular**

Monitoring Location	Linear Feet per Minute (LFM)	Cubic Feet per Minute (CFM)
Face of Canopy Hood	102.13 LFM	6,740.58 CFM





Name:

Date:

NES Job Number:

## Ventilation Data

Measurements: 48 x 40

FPM:

CFM:

FACE OF HOOD

80	83	84	87
63	65	75	75
60	60	70	70
55	53	52	60

Measurements: 176 x 54

FPM:

CFM:

FACE OF HOOD

140	148	150	160
105	112	143	130
60	72	102	72
55	60	62	63

Name:

Date:

NES Job Number:

LB

9/27/12

013.1H1374.60

IAQ Data

Kalspell

Building	Location	CO <sub>2</sub>	Temp	RH %	CO
Amway	Office	387	69.6°F	39.1	0
	Hallway	381	71.0°F	38.6	0
	Restroom	397	72.0°F	37.4	0
	Prill Floor	433	70.1°F	36.8	1
	Storage	378	71.6°F	36.0	1
	Lobby entrance	417	72.6°F	37.0	1
✓	IFR	454	72.1°F	37.2	1

OUTDOOR CO<sub>2</sub> = 370