Former National Guard Armory
Weatherford, Oklahoma

Remediation Final Report

Prepared by:
Department of Environmental Quality
707 North Robinson
Oklahoma City, Oklahoma 73101

OKLAHOMA
DEPARTMENT OF ENVIRONMENTAL QUALITY
...for a clean, attractive, prosperous Oklahoma

The Oklahoma Department of Environmental Quality (DEQ) is pleased to present the City of Weatherford with the Final Remediation Report for the former Weatherford Armory.

DEED NOTICE

A Notice of Remediation has been filed in the county courthouse and is included in this report. It summarizes remediation performed at the former Weatherford Armory and describes continuing operation and maintenance and land use restrictions. This completes the DEQ cleanup of the property. For more detail on the activities described below, see enclosed reports.

ASBESTOS REMEDIATION

DEQ and its contractors completed the following activities:

- Asbestos inspection, including:
  - Asbestos-containing window caulking
- Asbestos Abatement, including:
  - Removal of all asbestos-containing windows

TARGETED BROWNFIELD ASSESSMENT

On March 31, 2014, DEQ provided a Phase I Targeted Brownfield Assessment to the City of Clinton. A copy of this report is available at http://www.deq.state.ok.us/lpdnew/scapIndex.htm

LEAD REMEDIATION

DEQ and its contractors completed the following activities:

- Lead-based paint (LBP) and lead dust inspection
- LBP abatement, including:
  - Scraping and sealing down spouts, window lintels and sills, overhead door frames, door guards, the Indoor Firing Range vent fan wood and metal, and walls painted with LBP
  - Removal and replacement of doors and windows containing LBP
- Indoor firing range cleanup, including:
  - Lead dust cleanup: high efficiency particulate air (HEPA) vacuuming, wet washing, and sealing with appropriate sealant floors, walls, and ceiling
- HEPA vacuuming and wet washing of floors in the building

DEQ
OKLAHOMA
DEPARTMENT OF ENVIRONMENTAL QUALITY

1. Deeds and Legal Documents
2. Maintenance Plan
3. Inspection Reports
4. Scope of Work
5. Final Abatement Reports
6. Confirmation Sampling

DEEDS AND LEGAL DOCUMENTS

Ret. - S. Houston Cantrell
3515 Military Cir
OKC OK 73111

I-2012-005878 Book 1569 Pg 2
08/30/2012 1:39 pm Pg 0002-0003
Fee $ 0.00 Doc $ 0.00
Karen Fry - Custer County Clerk
State of Oklahoma

Corrected QUITCLAIM DEED

KNOW ALL MEN BY THESE PRESENTS:

That the State of Oklahoma, acting by and through the Oklahoma Military Department by its Adjutant General, Major General Myles L. Deering, a body corporate and politic and instrumentality of the State of Oklahoma, Grantor, in consideration of the sum of One and No/100 dollars and other valuable consideration in hand paid, the receipt and sufficiency of which are hereby acknowledged, do hereby quitclaim, grant, bargain, sell and convey unto **the City of Weatherford, Oklahoma,** Grantee, the following described real property and premises lying and situated in the ~~Woodward~~ Custer County, State of Oklahoma, as follows:

(2) 10/5 Ø

A tract of land bounded and described as follows:

> Being Lots Six (6), Seven (7), Eight (8), Nine (9), and Ten (10), in Block sixty-two (62), of the original town of Weatherford, Oklahoma;

together with the improvements thereon and appurtenances thereunto belonging.

NOTICE: THE ABOVE DESCRIBED PROPERTY MAY HAVE BEEN CONTAMINATED WITH LEAD, ASBESTOS AND OTHER CONTAMINANTS.

TO HAVE AND TO HOLD the Real Property unto the Grantee its successors, and assigns.

Signed and delivered this 25 day of July 2012.

STATE OF OKLAHOMA

By: _____
Major General Myles L. Deering,
Adjutant General of the State of Oklahoma

Corrected - Refile
I-2013-001841 Book 1591 Pg 179
04/08/2013 11:25 am Pg 0179-0180
Fee $ 15.00 Doc $ 0.00
Karen Fry - Custer County Clerk
State of Oklahoma

This Transaction is Exempt from Documentary Tax Stamps. Title 68 O.S. § 3202(11)

I-2012-005878 Book 1569 Pg: 3
08/30/2012 1:39 pm Pg 0002-0003
Fee: $ 0.00 Doc: $ 0.00
Karen Fry - Custer County Clerk
State of Oklahoma

I-2013-001841 Book 1591 Pg: 180
04/08/2013 11:25 am Pg 0179-0180
Fee: $ 15.00 Doc: $ 0.00
Karen Fry - Custer County Clerk
State of Oklahoma

ACKNOWLEDGMENT

STATE OF OKLAHOMA)
) ss
COUNTY OF OKLAHOMA)

Before me, Jennifer Meyer in and for this state, on this 25 day of July, 2012, personally appeared Major General Myles L. Deering, as Adjutant General of the State of Oklahoma, to me known to be the identical person who executed the within and foregoing Quitclaim Deed, and acknowledged to me that he executed the same as free and voluntary act and deed for the uses and purposes therein set forth.

Jennifer Meyer
Notary Public

My Commission Expires:
1/23/16

My Commission Number:
04000685

This Transaction is Exempt from Documentary Tax Stamps. Title 68 O.S. § 3202(11).

I-2014-004022 Book 1641 Pg: 417
08/01/201410:53 am Page(s) 417-419
Fee: $ 17.00 Doc: $ 0.00
Karen Fry - Custer County Clerk
State of Oklahoma

DEED NOTICE & LAND USE RESTRICTIONS

COMPLETION OF REMEDIATION
FORMER WEATHERFORD ARMORY
WEATHERFORD, OKLAHOMA

AFFECTED PROPERTY: The Affected Property is the former Weatherford Armory located at 223 West Rainey Avenue, City of Weatherford, Custer County, Oklahoma, 73096.

(3) 10/5

The legal description is as follows:

A tract of land bounded and described as follows:

Being lots Six (6), Seven (7), Eight (8), Nine (9), and Ten (10), in Block sixty-two (62), of the original town of Weatherford, Oklahoma;

together with the improvements thereon and appurtenances thereunto belonging.

LEGAL BASIS FOR NOTICE: The Oklahoma Department of Environmental Quality (DEQ) hereby files this Notice of Remediation pursuant to Oklahoma Statutes, 27A O.S. § 2-7-123 (C). This Notice does not grant any right to any person not already allowed by law and shall not be construed to authorize or encourage any person or other legal entity to cause or increase pollution, to avoid compliance with state or federal laws and regulations regarding pollution or to escape responsibility for maintaining environmentally sound operations.

DEQ may take administrative or civil action to recover costs or to compel compliance with the Land Use Restrictions and to prevent damage to or interference with the Engineering Controls and Continuing Operation and Maintenance of said Engineering Controls herein described.

The Land Use Restrictions, Engineering Controls and Continuing Operation and Maintenance of said Engineering Controls shall apply to the Affected Property and to persons who own and/or use the Affected Property until such time as DEQ files a subsequent Notice of Remediation that changes or removes one or more of them. Activities that cause or could cause damage to the Remedy or the Engineering Controls or recontamination of soil or groundwater are prohibited.

REASON FOR NOTICE: The above described Affected Property was contaminated with materials that required remediation pursuant to state and federal environmental laws and regulations. Sampling performed by DEQ contractors, conducted on March 22 and 16, 2012, indicated that there was asbestos, lead-based paint, and lead dust in the building.

REMEDY: Remediation activities (Remedy) at the Affected Property included abatement of asbestos, lead-based paint and dust. The remedy was completed on April 7, 2014.

I-2014-004022 Book 1641 Pg: 418
08/01/2014 10:53 am Page(s) 417-419
Fee: $ 17.00 Doc: $ 0.00
Karen Fry - Custer County Clerk
State of Oklahoma

For more detailed information please refer to *Former National Guard Armory Weatherford, Oklahoma Remediation Final Report.* To obtain a copy of the report, contact:

Oklahoma Department of Environmental Quality
Central Records

Mailing Address
P.O. Box 1677
Oklahoma City, Oklahoma 73101

Physical Address
707 N Robinson
Oklahoma City, OK 73102

-Rt-

Electronic Address
http://www.deq.state.ok.us/lpdnew/scapIndex.htm

DISCLAIMER

(A) Lead: DEQ did not test every painted surface inside and outside of the building; therefore, there is a potential for lead-based paint at the affected property.

(B) Asbestos: DEQ did not test all building materials inside and outside of the building; therefore, there is a potential for asbestos at the affected property.

CONTINUING OPERATION, MAINTENANCE AND MONITORING

(A) Lead-based paint encapsulant: Lead-based paint encapsulant was applied over lead-based paint on non-friction surfaces. These areas should be periodically inspected and maintained as appropriate.

(B) Sealant: Following cleanup, sealant was applied to the Indoor Firing Range (IFR) and room floors where lead-based paint abatement was performed. Sealant should be inspected on a periodic basis and maintained as appropriate.

LAND USE RESTRICTIONS: The land use restrictions are applicable to the IFR. The IFR is located below grade along the east side of the building. The entrance to the IFR is a stairway located in the northwest corner of the drill floor. The land use restrictions for the IFR are:

a. No residential, daily care, pre K-12 schools, or edible agriculture uses.

b. No residential use, as defined by US Housing and Urban Development, by children age 6 or under. Residential use is defined as having a child present at the Affected Property for more than sixteen (16) hours within one twenty-four (24) hour period.

I-2014-004022 Book 1641 Pg: 419
08/01/2014 10:53 am Page(s) 417-419
Fee: $ 17.00 Doc: $ 0.00
Karen Fry - Custer County Clerk
State of Oklahoma

CHANGING LAND USE RESTRICTIONS: Changes to land use restrictions must be approved by DEQ or its successor agency. The person requesting the change in land use must demonstrate to DEQ's satisfaction that contamination at the site has reached levels appropriate for the proposed new land uses and that further remediation is not necessary or that additional institutional or engineering controls are adequate to achieve levels protective of human health and the environment for the proposed uses.

DEQ may require oversight costs, work plans, sampling, reports, and public participation as part of its review of the new information to support the requested change in land use restrictions. The person requesting the change will be required to follow agency procedures effective at the time of the request.

DEQ at its discretion may determine, based on the new information submitted, that contaminants are present at the Site at levels that will not pose a risk to human health or the environment if the new land use restrictions being requested are allowed. Upon making this determination, DEQ will file a recordable notice of remediation pursuant to state law in the land records in the office of the county clerk where the Site is located designating the new land use restrictions.

This Notice of Remediation and the restrictions and requirements contained herein run with the land and no change of ownership of the Affected Property will change the Land Use Restrictions.

Scott A. Thompson, Executive Director
Oklahoma Department of Environmental Quality

7-28-14
Date

ACKNOWLEDGMENT

STATE OF OKLAHOMA
COUNTY OF OKLAHOMA

Before me, a Notary Public, in and for said County and State, on this 28th day of July, 20 14, personally appeared Scott A. Thompson to me known to be the identical person who executed the within and foregoing instrument and acknowledged to me that executed the same as free and voluntary act and deed for the uses and purposed therein set forth. In Testimony Whereof, I have hereunto set my hand and official seal the day and year above written.

My Commission expires:

Jan. 10, 2017.

Notary Public

DEBORAH RAY NOTARY # 13000313 EXP. 01/10/17 PUBLIC STATE OF OKLAHOMA

MAINTENANCE PLAN

MAINTENANCE PLAN
FORMER WEATHERFORD ARMORY
WEATHERFORD, OKLAHOMA

The Armory located at 223 West Rainey Avenue, Weatherford, Oklahoma, was contaminated with materials that required remediation pursuant to State and Federal environmental laws and regulations. Please refer to Attachment 1 for land use restrictions. Sampling performed by DEQ contractors, conducted on March 22 and 16, 2012, indicated that there was asbestos, lead-based paint, and lead dust in the building. Remediation activities at the Affected Property included abatement of asbestos, lead-based paint, and lead dust. The remedy was completed on 4/7/2014. The following maintenance plan is to be completed by the owner of the Affected Property. DEQ recommends inspection of remediated areas every 5 years. During site inspections the owner should note any signs of disrepair or improper maintenance. Continuing operation, maintenance and monitoring should include:

1. Firing Range – Walls, floor and ceiling of indoor firing range were cleaned and sealed with acrylic sealant to remediate surfaces below 40µg/SF for lead. These surfaces need to be resealed if acrylic sealant shows signs of deterioration, damage, or flaking.
2. All window lintels, interior and exterior window sills, down spouts, and overhead door frames and guards, were scraped and encapsulated with lead-based paint encapsulant. These surfaces need to be re-encapsulated if lead-based paint encapsulant shows signs of deterioration, damage, or flaking.
3. The IFR vent fan wood and metal, the Drill Floor (Room 1) stairs, all the walls in the Drill Floor (Room 1), Room 2, Room 3, Room 5, Room 20, Room 21, and all brick walls in Room 15 were scraped and encapsulated with lead-based paint encapsulant. These surfaces need to be re-encapsulated if lead-based paint encapsulant shows signs of deterioration, damage, or flaking. See Attachment 2 for Weatherford Armory Floor Plan Map.

Note – A list of DEQ approved acrylic sealant and elastomeric encapsulants is attached (Attachment 3). DEQ did not test every painted surface and all building materials inside and outside of the building, therefore there is a potential for lead-based paint and asbestos at the affected property.

If you have any questions or concerns feel free to contact me at (405) 702-5112.

Sincerely,

Brittany R. Downs
Environmental Programs Specialist
DEQ Land Protection Division
Site Cleanup Assistance Program

ATTACHMENT 1

Land use Restrictions

LAND USE RESTRICTIONS: The land use restrictions at the above-described Affected Property are:

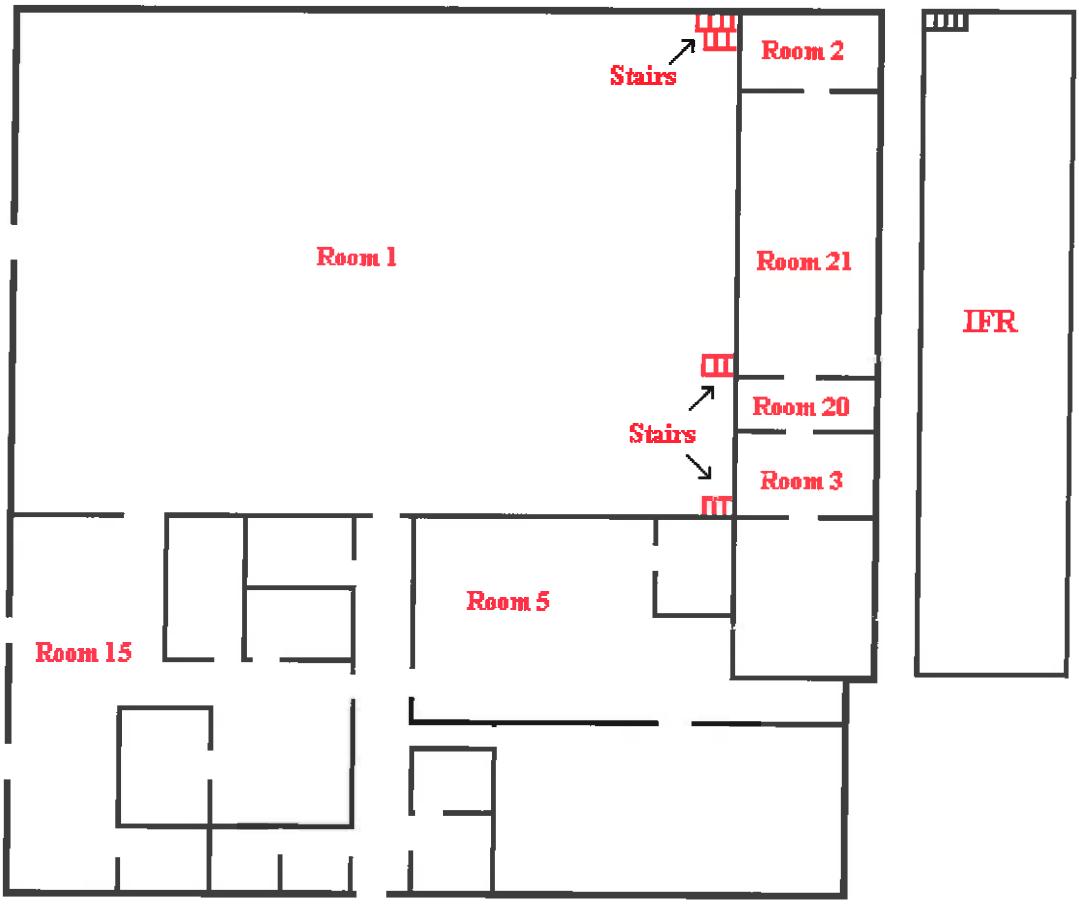
a. No residential, daily care, pre K-12 schools, or edible agriculture uses of the IFR.

b. No residential use of the IFR by children age 6 or under. Residential use is defined as having a child present at the Affected Property for more than sixteen (16) hours within one twenty-four (24) hour period.

ATTACHMENT 2

Floor Plan Map

Labeled areas represent walls and floors with encapsulant and/or sealant.



ATTACHMENT 3

DEQ Approved Sealants and Encapsulants List

Acrylic Sealant

KM-669 Acrylic

Lead-Based Paint Encapsulants approved by DEQ

Encapsulant Manufacturer	Encapsulant Product(s)
Coronado Paint Company	LEAD BLOCK™
Dumond Chemicals	LEAD STOP™
Dynacraft Industries, Inc.	Back to Nature Protect-A-Coat
Encap Systems Corporation	EncapSeal™ I
Encap Systems Corporation	EncapSeal™ II
Fiberlock Technologies, Inc.	Child GUARD interior/exterior
Fiberlock Technologies, Inc.	L-B-C® Type III
Global Encasement, Inc.	LeadLock™
Grace Construction Products	Lead Seal®
Grace Construction Products	Barrier Coat® II
Insl-x Products Corporation	INSL-CAP™
SAFE Encasement Systems	SE-120 Protective Skin
Specification Chemicals, Inc.	NU-WAL® #2500 Coating

INSPECTION REPORTS

QUANTITATIVE FACILITY ASBESTOS SURVEY

NATIONAL GUARD ARMORY
223 WEST RAINEY AVENUE
WEATHERFORD, OKLAHOMA 73096

GMR Project Number 2012017
March 22, 2012

Oklahoma Department of Environmental Quality
Land Protection Division
P. O. Box 1677
Oklahoma City, OK 73101-1677
Attention: Mr. Dustin Davidson

GMR & Associates, Inc.
ENGINEERS, PLANNERS, ENVIRONMENTAL SPECIALISTS, HYDROGEOLOGISTS
2520 West I-44 Service Road, Suite 200
P.O. Box 57827
Oklahoma City, OK 73157-7827
Telephone: 405-528-7017
Fax: 405-528-3346

Prepared by:

William Harris
ODOL AHERA Inspector License OK150053

Reviewed by:

James M. Reis
Vice President
Project Manager

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QUANTITATIVE FACILITY ASBESTOS SURVEY
WEATHERFORD NATIONAL GUARD ARMORY
223 WEST RAINEY AVENUE
WEATHERFORD, OKLAHOMA

1.0 EXECUTIVE SUMMARY

In March, 2012 GMR & Associates, Inc. (GMR) performed a survey for asbestos containing materials (ACM) in the National Guard Armory at 223 West Rainey Avenue in Weatherford, Oklahoma.

The objective of the survey was to assess the presence and quantities of (ACM). Bulk samples of suspect (ACM) were collected during the survey and submitted for laboratory analysis for asbestos content. During the survey, a total of 13 samples were collected from 11 different homogeneous areas.

Laboratory results indicate the window caulking on the interior of the windows in the Motor Pool (high-bay) area of the building **contains friable asbestos.**

2.0 INTRODUCTION

On March 13, 2012, GMR & Associates, Inc. (GMR) performed a survey for asbestos containing materials (ACM) in the National Guard Armory at 223 West Rainey Avenue in Weatherford, Oklahoma.

The objective of the survey was to assess the presence and quantities of asbestos containing building materials (ACM). Bulk samples of suspect (ACM) were collected during the survey and submitted for laboratory analysis for asbestos content.

3.0 BUILDING DESCRIPTION

Main Building

Constructed in 1938, the Weatherford Armory building has a total area of 16,014 square feet and is comprised of one floor. The north half of the building serves as a motor pool with offices in the south half of the building. A firing range is located below ground level on the east side of the motor pool.

4.0 FINDING SUMMARY OF ASBESTOS CONTAINING MATERIALS

Laboratory results indicate the interior window caulking on the north, east and west sides of the building **contains friable asbestos.** The sample (09A) contained 2% chrysotile asbestos.

When a sample is tested positive for the presence of asbestos, and the percentage is 10% or lower, a point counting method is recommended for that sample. If the results derived from point count differ from the original results, it overrides it.

Point count analysis for sample 09A was 1.75% chrysotile. The window caulking in the Motor Pool and rooms on the east side of building was in poor condition (See Appendix D, Photo 1). The asbestos sampling locations are shown in Appendix C, Figures 1-3.

Table 1
Summary of Asbestos Containing Building Materials

Material Category	Description	Quantities	General Location
Category 1 Friable	Window Caulking	790 SF Total Window Area	(Interior of Windows on the North, East and West Sides of Building)

Table 2
Bulk Samples and Analytical Results

Sample ID	Description	Approx. Amount	Asbestos Type & Percent
WA-01A	12 Inch x 12 Inch White Floor Tile (Hallways)	N/A	None Detected
WA-02A	Mastic on 12 Inch x 12 Inch White Floor Tile (Hallways)	N/A	None Detected
WA-03A	12 Inch x 12 Inch Brown Floor Tile (Rooms 13 & 16)	N/A	None Detected
WA-04A	Mastic on 12 Inch x 12 Inch Brown (Rooms 13 & 16)	N/A	None Detected
WA-05A	9 Inch x 9 Inch Black Floor Tile (Room 21)	N/A	None Detected
WA-06A	Mastic on 9 Inch x 9 Inch Black Floor Tile (Room 21)	N/A	None Detected
WA-07A	Sheetrock Wall Panels (Throughout Office Area)	N/A	None Detected
WA-08A	Texturing on Sheetrock Walls (Rooms 9 & 10)	N/A	None Detected
WA-08B	Texturing on Sheetrock Walls (Rooms 9 & 10)	N/A	None Detected
WA-08C	Texturing on Sheetrock Walls (Rooms 9 & 10)	N/A	None Detected
WA-09A	Interior Window Caulking on the North, East and West Sides of Building)	790 SF (Total Window Area)	***2% Chrysotile***
WA-09A	Interior Window Caulking on the North, East and West Sides of Building)	N/A	***1.75% Chrysotile –Point Count Method***
WA-10A	2 x 4 Ceiling Tile (Rooms 4, 7, 16, 18 & 21)	N/A	None Detected
WA-11A	2 x 4 Ceiling Tile (Room 16)	N/A	None Detected
WA-12A	Due to Unsafe Conditions for Scissor-Lift Access, No Roof Sample Was Taken		

SF = Square Feet; LF = Lineal Feet; EA = Each

5.0 SAMPLING PROCEDURES

5.1 SURVEY PROCEDURES

The asbestos survey involved visual Inspection and Sampling, Laboratory Analysis, and Quantity Assessment.

During the physical survey, sample collection data sheets were completed using the unique identification numbers previously described as a reference for the entry of more detailed

information regarding the item being sampled. The individual sample numbers were recorded along with the item description, location within the area and condition of the material being sampled. As each sample was collected, it was deposited in a sealable plastic bag or screw-top plastic collection container. The container was then marked with the sample identifier and recorded on the data sheet. All Inspectors are licensed as an AHERA Inspector by the State of Oklahoma. The completed survey forms and samples for each area were then taken to Quantem Laboratory, an accredited laboratory in Oklahoma City and the survey data was entered into a computer system for processing.

5.2 ANALYTICAL PROCEDURES

Bulk samples collected by GMR were analyzed by Quantem Laboratory in Oklahoma City, Oklahoma. Bulk samples were analyzed by Polarized Light Microscopy (PLM. All samples that were submitted were analyzed. Quantem laboratory is accredited through the American Industrial Hygiene Association (AIHA) or National Voluntary Laboratory Accreditation Program (NVLAP).

6.0 RECOMMENDATIONS

Prepare Project Design for abatement or, at a minimum, clean-up and dispose the asbestos window caulking.

6.1 RECOMMENDED ACTIONS FOR PLANNED RENOVATIONS

Prepare specifications and Project Design for abatement of friable asbestos material and specifications for abatement of non-friable materials that would be disturbed during renovation activities.

6.2 RECOMMENDED ACTIONS FOR PLANNED DEMOLITION

Prepare specifications and Project Design for abatement of all friable asbestos materials. Non-friable material may be left in place and disposed of as demolition debris.

6.3 RECOMMENDED ACTIONS FOR ASBESTOS LEFT IN-PLACE

Prepare and implement an Operations and Management (O&M) Plan to manage the asbestos in place. The O&M plan shall meet the requirements established in the Oklahoma Control Act, page 26, 380:50-14-1.

7.0 BUDGETARY ABATEMENT COST ESTIMATE

Window Caulking: ***$5,000.00-$7,500.00***

Appendix A

Laboratory Results and Chain of Custody Field Sheets

2033 Heritage Park Drive / Oklahoma City, OK 73120 / (405) 755-7272 / Fax (405) 755-2058

Polarized Light Microscopy Asbestos Analysis Report

QuanTEM Lab No. 205395
Account Number: B216

Client: GMR & Associates, Inc.
PO Box 57827
Oklahoma City, OK 73157

Date Received: 03/13/2012
Received By: Sherrie Leftwich
Date Analyzed: 03/17/2012
Analyzed By: Gayle Ooten
Methodology: EPA/600/R-93/116

Project: Weatherford Armory
Project Location: N/A
Project Number: 2012017

QuanTEM Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
001	WA-01A	Homogeneous	Gray Floor Tile	Asbestos Not Present	NA	Vinyl CaCO3
002	WA-02A	Homogeneous	Yellow Mastic	Asbestos Not Present	NA	Glue
003	WA-03A	Homogeneous	Tan Floor Tile	Asbestos Not Present	NA	Vinyl CaCO3
004	WA-04A	Homogeneous	Yellow Mastic	Asbestos Not Present	Cellulose <1	Glue
005	WA-05A	Homogeneous	Black Floor Tile	Asbestos Not Present	NA	Vinyl CaCO3
006	WA-06A	Homogeneous	Yellow Mastic	Asbestos Not Present	Cellulose <1	Glue
007	WA-07A	Homogeneous	White Sheetrock	Asbestos Not Present	Cellulose 20	Gypsum

Unless otherwise noted, upon receipt the condition of the sample was acceptable for analysis.

2033 Heritage Park Drive / Oklahoma City, OK 73120 / (405) 755-7272 / Fax (405) 755-2058

Polarized Light Microscopy Asbestos Analysis Report

QuanTEM Lab No. 205395
Account Number: B216

Client: GMR & Associates, Inc.
PO Box 57827
Oklahoma City, OK 73157

Date Received: 03/13/2012
Received By: Sherrie Leftwich
Date Analyzed: 03/17/2012
Analyzed By: Gayle Ooten
Methodology: EPA/600/R-93/116

Project: Weatherford Armory
Project Location: N/A
Project Number: 2012017

QuanTEM Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
008	WA-08A	Homogeneous	White Texture	Asbestos Not Present	NA	CaCO3 Paint
009	WA-08B	Homogeneous	White Texture	Asbestos Not Present	NA	CaCO3 Paint
010	WA-08C	Homogeneous	White Texture	Asbestos Not Present	NA	CaCO3 Paint
011	WA-09A	Homogeneous	Gray Window Glazing	Asbestos Present Chrysotile 2	NA	CaCO3 Binder
012	WA-10A	Homogeneous	White Ceiling Tile	Asbestos Not Present	Cellulose 30 Glass Fiber 30	Paint Perlite
013	WA-11A	Homogeneous	White Ceiling Tile	Asbestos Not Present	Cellulose 30 Glass Fiber 30	Paint Perlite
014	WA-12A	**	** **	**	Not Analyzed	

No Sample Received

Unless otherwise noted, upon receipt the condition of the sample was acceptable for analysis.

2033 Heritage Park Drive / Oklahoma City, OK 73120 / (405) 755-7272 / Fax (405) 755-2056

Polarized Light Microscopy Asbestos Analysis Report

QuanTEM Lab No. 205395
Account Number: B216

Client: GMR & Associates, Inc.
PO Box 57827
Oklahoma City, OK 73157

Date Received: 03/13/2012
Received By: Sherrie Leftwich
Date Analyzed: 03/17/2012
Analyzed By: Gayle Ooten
Methodology: EPA/600/R-93/116

Project: Weatherford Armory
Project Location: N/A
Project Number: 2012017

QuanTEM Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous

Gayle Ooten, Analyst

3/17/2012
Date of Report

Unless otherwise noted, upon receipt the condition of the sample was acceptable for analysis.

2033 Heritage Park Drive / Oklahoma City, OK 73120 / (405) 755-7272 / Fax (405) 755-2058

Polarized Light Microscopy Asbestos Analysis Report

QuanTEM Lab No. 205630
Account Number: B216

Client: GMR & Associates, Inc.
PO Box 57827
Oklahoma City, OK 73157

Date Received: 03/20/2012
Received By: Sherrie Leftwich
Date Analyzed: 03/20/2012
Analyzed By: Gayle Ooten
Methodology: EPA/600/R-93/116

Project: Weatherford Armory
Project Location: PT CT for 205395
Project Number: 2012017

QuanTEM Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
001	WA-09A	Homogeneous	Gray Window Glazing	Asbestos Present Chrysotile 1.75 400 Point Count	NA	CaCO3 Binder

Gayle Ooten, Analyst

3/20/2012
Date of Report

Unless otherwise noted, upon receipt the condition of the sample was acceptable for analysis.

Asbestos Chain-of-Custody

QUANTEM LABORATORIES
2033 Heritage Park Drive, Oklahoma City, OK 73120-7502
(800) 822-1600 (405) 755-7272 Fax: (405) 755-2058
www.quantem.com

This Box for Lab Use Only
Lab No. 205395
Accept Reject

Company Name: GMR & Associates, INC. Acct.#: 18 Project Name: Westfield Armory

Project Location: Project Number: 2012.07

	Sample Number	To Be Analyzed	Color / Description	Volume / Area (if applicable)	Comments
1	WA - 01A		1x1 wh FT		6,8,5
2	02A		master on 01A		4,9,10
3	03A		1x1 Brown FT		900SF
4	04A		master on 03A		13+16
5	05A		9x9 Blk FT		530
6	06A		master 05A		Rm 9,1
7	07A		Sheetrock wall		
8	08A		Texture on sheetrock		Rm 9,10
9	08B		" " "		7' (1740SF)
10	08C		" " "		405F
11	09A		Window - Caulk	meter pool N.	
12	10A		2x4 CT	13x42)84, 205,770, 480	
13	11A		3x2 CT	40	
*14	12A		Roofing material		

LEGAL DOCUMENT
Please Print Legibly

PLM	TEM
Bulk Analysis: EPA 600/R-93/116	Air - AHERA
400 Point Count	Air - NIOSH 7402
1000 Point Count	Bulk - Qualitative [Yes / No] - EPA 600/R-93/116
Gravimetric Preparation Fee	Bulk - Quantitative [weight %] - Chatfield
Other	Dust - Qualitative [Yes / No]
	Dust - Quantitative [fibers/sq.cm] - ASTM D6755
PCM	Drinking Water - EPA 100.2
NIOSH 7400	Waste Water - EPA 600/4-83-043
Other	Other

TURNAROUND TIME	CONTACT INFORMATION
Rush	Name:
Same Day	Phone:
24 Hour	Report Results VIA (CHOOSE ONE):
3-Day	FAX:
X 5-Day	X QuanTEM WebSite
	E-Mail:

Relinquished By	Date/Time	VIA	Received By	Date/Time	Lab Samples	Sampled By:
Rick Nance	03/13/12 1530		Skytwich	3/13/12 3:30		

* No Sample Received - SM

Saturday FedEx Shipping - CALL TO SCHEDULE
Use this address for Saturday FedEx only: 4220 N. Santa Fe Ave., Oklahoma City, OK 73105-8517

Appendix B

Certifications

FEE: $25.00

Oklahoma Department of Labor

Bill Harris

has filed in the office of the Commissioner of Labor of the State of Oklahoma
an application for a Limited Asbestos Contractor's license for

AHERA INSPECTOR

Now, therefore, The Commissioner of Labor of the State of Oklahoma, by virtue of
the power vested in him by law hereby issues to the
applicant license **No. OK150035.**

Mark Costello

MARK COSTELLO
Commissioner of Labor

May 06, 2011
Date of Issuance

EXPIRES: May 04, 2012

FEE: $25.00

Oklahoma Department of Labor

Howard Burch

has filed in the office of the Commissioner of Labor of the State of Oklahoma
an application for a Limited Asbestos Contractor's license for

AHERA INSPECTOR

Now, therefore, The Commissioner of Labor of the State of Oklahoma, by virtue of
the power vested in him by law hereby issues to the
applicant license **No. OK159522.**

Mark Costello

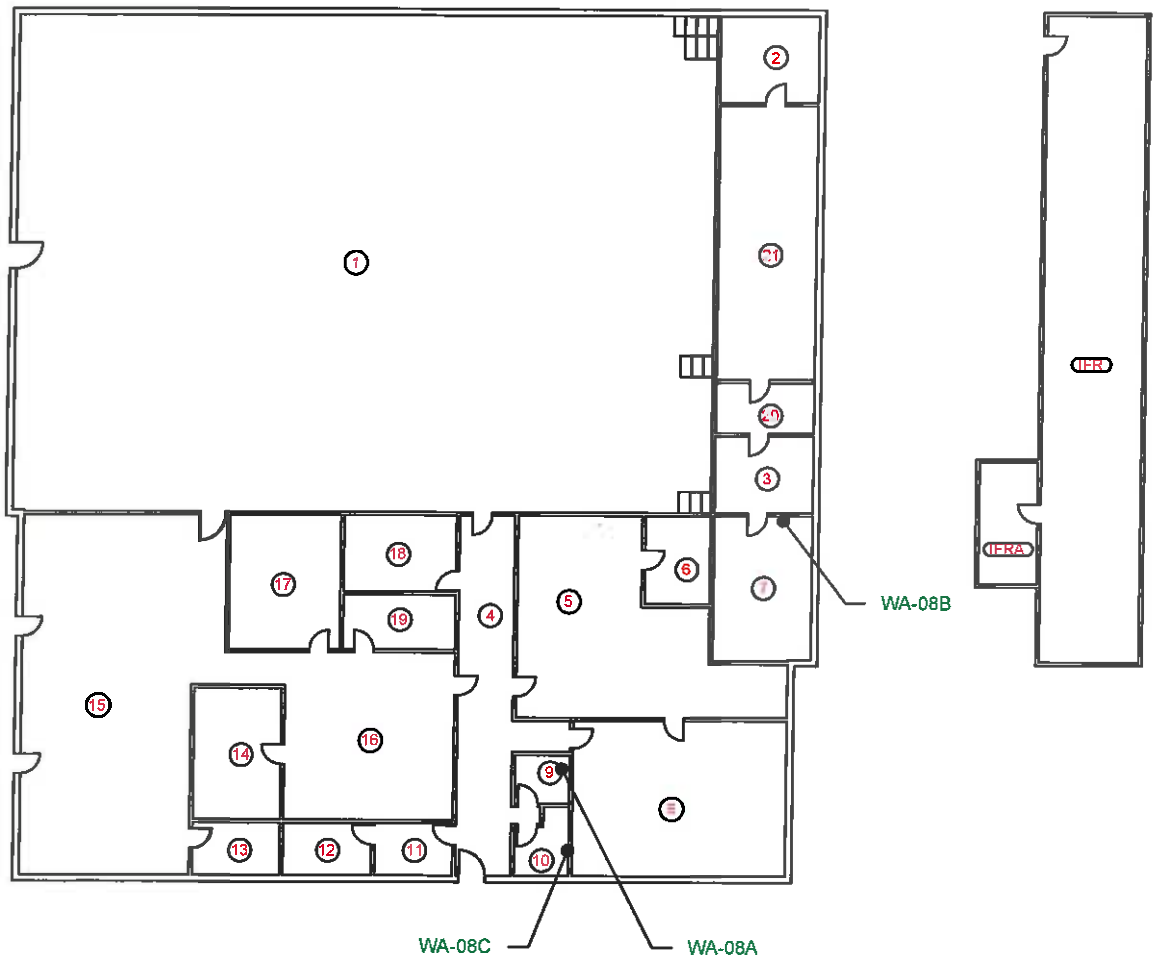
MARK COSTELLO
Commissioner of Labor

June 01, 2011
Date of Issuance

EXPIRES: June 01, 2012

Appendix C

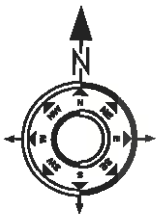
Site Layout with Sample and Asbestos Locations



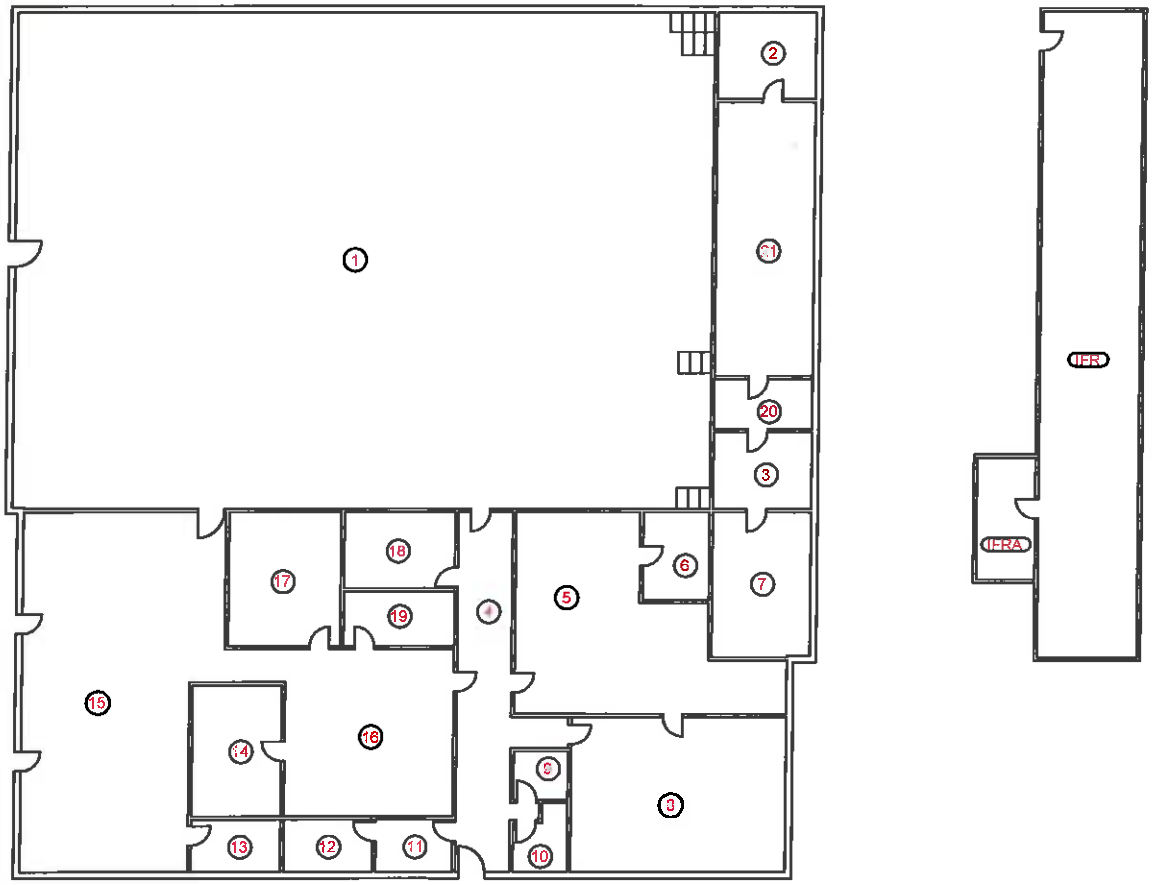
# DENOTES ROOM NUMBERS DEVELOPED FOR SURVEY
OK-### SAMPLES CONTAINING ASBESTOS
OK-### SAMPLES NOT CONTAINING ASBESTOS

GMR
& Associates, Inc.
2520 West I-44 Service Road, Ste. 200
P.O Box 57827
Oklahoma City, OK 73157-7827
Phone: 405/528-7017, Fax: 405/528-3346

Figure 1
Asbestos Surface Sampling Locations
Weatherford Armory
223 W. Rainey Avenue
Weatherford, Oklahoma 73096



NOT TO SCALE

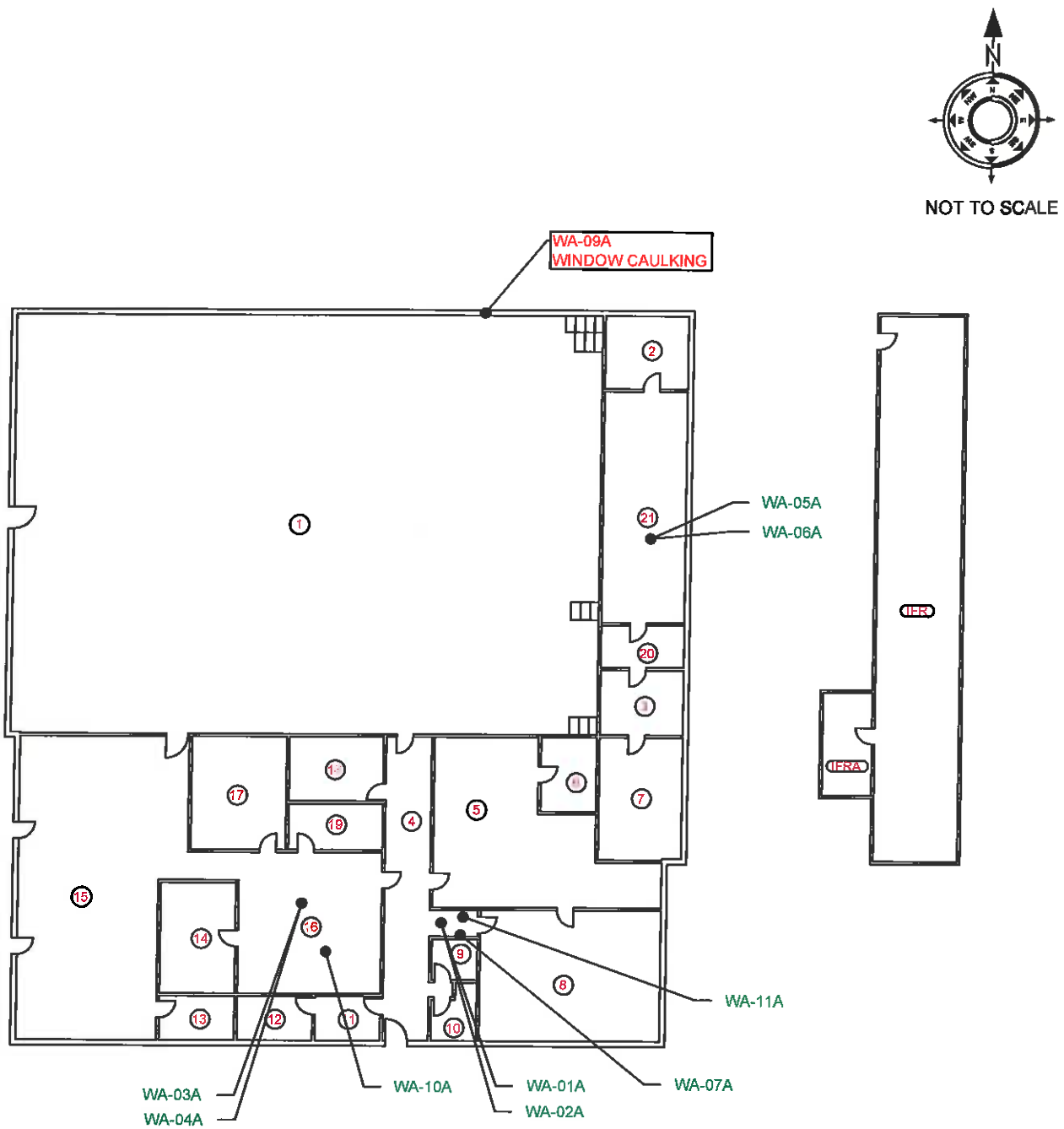


NO THERMAL INSUALTION OBSERVED DURING INSPECTION

(#) DENOTES ROOM NUMBERS DEVELOPED FOR SURVEY

GMR
& Associates, Inc.
2520 West I-44 Service Road, Ste. 200
P.O Box 57827
Oklahoma City, OK 73157-7827
Phone: 405.528-7017, Fax: 405.528-3346

Figure 2
Asbestos Thermal Sampling Locations
Weatherford Armory
223 W. Rainey Avenue
Weatherford, Oklahoma 73096



# DENOTES ROOM NUMBERS DEVELOPED FOR SURVEY
OK-### SAMPLES CONTAINING ASBESTOS
OK-### SAMPLES NOT CONTAINING ASBESTOS

GMR
& Associates, Inc.
2520 West I-44 Service Road, Ste. 200
P.O Box: 57827
Oklahoma City, OK 73157-7827
Phone: 405.528-7017, Fax: 405.528-3346

Figure 3
Asbestos Miscellaneous Sampling Locations
Weatherford Armory
223 W. Rainey Avenue
Weatherford, Oklahoma 73096

Appendix D

Photo Record

Friable Asbestos Containing Window Caulking
(Sample # WA-09A)

Friable Asbestos Containing Window Caulking, East Side

Friable Asbestos Containing Window Caulking, East Half of North Side

Friable Asbestos Containing Window Caulking, Center of North Side

Friable Asbestos Containing Window Caulking, West Half of North Side

Friable Asbestos Containing Window Caulking, West Side

Windows on South Side of Building Have Been Replaced and Do Not Have Asbestos Containing Window Caulking

GMR & Associates, Inc.

Engineering and Environmental Consultants

PROJECT DESIGN
FOR
ASBESTOS ABATEMENT
WEATHERFORD ARMORY
WEATHERFORD, OK

OCTOBER 2012

Prepared By:

GMR and Associates
2520 NW 39th Street, Suite 200
Oklahoma City, Oklahoma 73112
(405) 528-7017 fax (405) 528-3346

2520 West I-44 Service Road, Suite 200
P.O. Box 57827
Oklahoma City, OK 73157-7827
Telephone: 405-528-7017
Fax: 405-528-3346

Introduction

This Project Design was prepared for compliance with existing statutes and regulations governing the removal and disposal of asbestos-containing materials in facilities accessible to the public within the State of Oklahoma. It is designed to provide a prudent course of action for handling of asbestos in the best interests of the facility owner, building occupants and the general public.

1. Statement that DOL Abatement of Friable Asbestos Materials Rules Apply

This Project Design intends that the abatement be performed in compliance with the following state and federal regulations:

Asbestos Statutes and Abatement of Friable Asbestos Materials Rules (OAC 380:50) State of Oklahoma Department of Labor, Asbestos Division.

Project Name: Weatherford Armory, Weatherford, Oklahoma.

Occupancy: The building will not be occupied during abatement activities.

Project Type: Removal of windows having friable caulk on both the interior and exterior of the panes.

Abatement Contractor: To be determined

Owner's Representative: GMR & Associates, Inc.

Regulatory Compliance

This Project Design intends that the abatement be performed in compliance with the following state and federal regulations:

Asbestos Statutes and Abatement of Friable Asbestos Materials Rules, (OAC 380:50) State of Oklahoma Department of Labor, Asbestos Division.

CFR 1910, General Industry Standards, latest edition, except for Section 1001(c) and (d).

CFR 1926, Construction Industry Standards, latest edition, except for Section 1100(c)(1) and (2).

CFR part 61, NESHAPS, latest edition.

ANSI Z88.2, latest edition.

American Conference of Governmental Industrial Hygienists' (ACGIH) Adopted Threshold Limit Value for Heat Stress.

2. Work Sequencing and Phasing

The work will be performed in three (3) phases.

Phase 1 – Removal of Windows on the east side of the Building.

Phase 2 – Removal of Windows on the north side of the Building

Phase 3 – Removal of Windows on the west side of the Building

*Sequence in each task shall be as follows:

1. Baseline air monitoring
2. Establish decontamination and load-out unit
3. Install critical barriers over openings
4. Establish emergency exits
5. Prep of the work area/s
6. DOL prep inspection
7. Removal of ACM material
8. Lock-down
9. DOL visual inspection
10. Clearance monitoring
11. Tear down except for critical barriers
12. DOL final inspection

3.Means of Egress and Fire Protection

Primary emergency exits for work will be through the decontamination unit. The exit paths are shown on the Abatement Plan.

The fire protection plan includes two emergency exits:

1. Through the decontamination unit,
2. Through the load-out unit

Fire Extinguishers-The Abatement Contractor will provide a Type 10 dry-charged ammonium phosphate fire extinguisher (10 lb) for the work area. The fire extinguisher will have a valid inspection tag and be decontaminated upon removal from the work area. A sufficient number of extinguishers will be provided to insure that all workers are within 75 feet of one.

4. Quantity, type and location of asbestos materials to be abated

- A total of 23 windows which have asbestos containing caulking will be removed. The windows range in size from 80" x 38" to 116" x 38".

5. Abatement methods, techniques and number of glove-bags or mini containments

- All work in all containments must be performed with the workers using full-face PAPR.
- Lock-down is required for the abated surfaces in all containments.

6. Numbers of air monitoring pumps.

In each containment:

- Five area pumps, one at each of the following locations.
  1. One inside the work area.
  2. One outside the de-con unit.
  3. One at the trailer during load-out.
  4. One placed at the discretion of DOL
  5. One placed outside the AFD discharge.

- Personnel pumps on the following:
  1. Minimum of 2 workers and/or 25% of the workers in each work area.

- Clearance Monitoring:
  1. In accordance with 40 OAC 380:50-11-2.

7. Numbers and locations of clean test samples and type of analysis.

- Clearance samples will be taken in accordance with 40 OAC 38):50-11-2. Five (5) clearance samples will be taken for each phase and analyzed by PCM.

8. Numbers, capacities, location and discharge points of negative air machines.

- A 0.02 negative air pressure will **not** be required for the exterior containment. Six (6) air changes per hour will be required. A total volume of 10,000 cubic feet of containment would be required for the exterior for each phase. A single negative air unit having a capacity of 2000 cfm would be sufficient for the six (6) changes per hour. The exaust will be discharged externally.

9. Details of project containment (s).

- Entry into and exit from the work areas shall be through the decontamination unit. Barrier tape and warning signs shall be posted at the entry of containments. Load-outs shall be attached to the work areas. All power has been disconnected from the building and the HVAC equipment has been previously removed.

- Exterior critical barriers and drop cloths shall be Nylon re-enforced poly attached to the roof and/or supported by a wooden frame as needed for a viable work area. The drop cloths shall extend a minimum of ten feet from the exterior walls to allow for window removal.

- The interior windows will be HEPA vacuumed and then sealed with two (2) layers of 6-mil reinforced poly during window removal.

- Power shall be supplied from a temporary source. Contractor is responsible for contacting the electric utility to supply the temporary service. A GFCI board or GFCI's shall be supplied to protect power inside the containment.

- Water shall be supplied to the building by the City of Weatherford at a point to be determined. The abatement contractor will be responsible for the connection.

10. Details of decontamination system (s).

- An attached decontamination facility per OAC 380:50-15-7, 8 and12 is planned for this work. The decontamination unit will consist of three chambers, a clean room, a shower and a dirty room. The airlocks for the decontamination unit will consist of triple 6 mil polyethylene overlapping flaps. The shower shall be equipped with a 5-micron waste water filter and a10 micron waste water pre-filter, liquid cleaning agent, non-porous shower grates and a functioning in-line water heater with capacity for 5 gallons per worker. Disposal of wastewater will be into the sanitary sewer. The specific locations will be determined during prep. Negative air flow will be maintained with a flow of makeup air from the clean room through the shower to the dirty room and vented internally.

11. Soil Sampling

- No soils are involved.

12. Special Materials/Methods Required

- No special materials/methods are required

13. Variances from the Rules

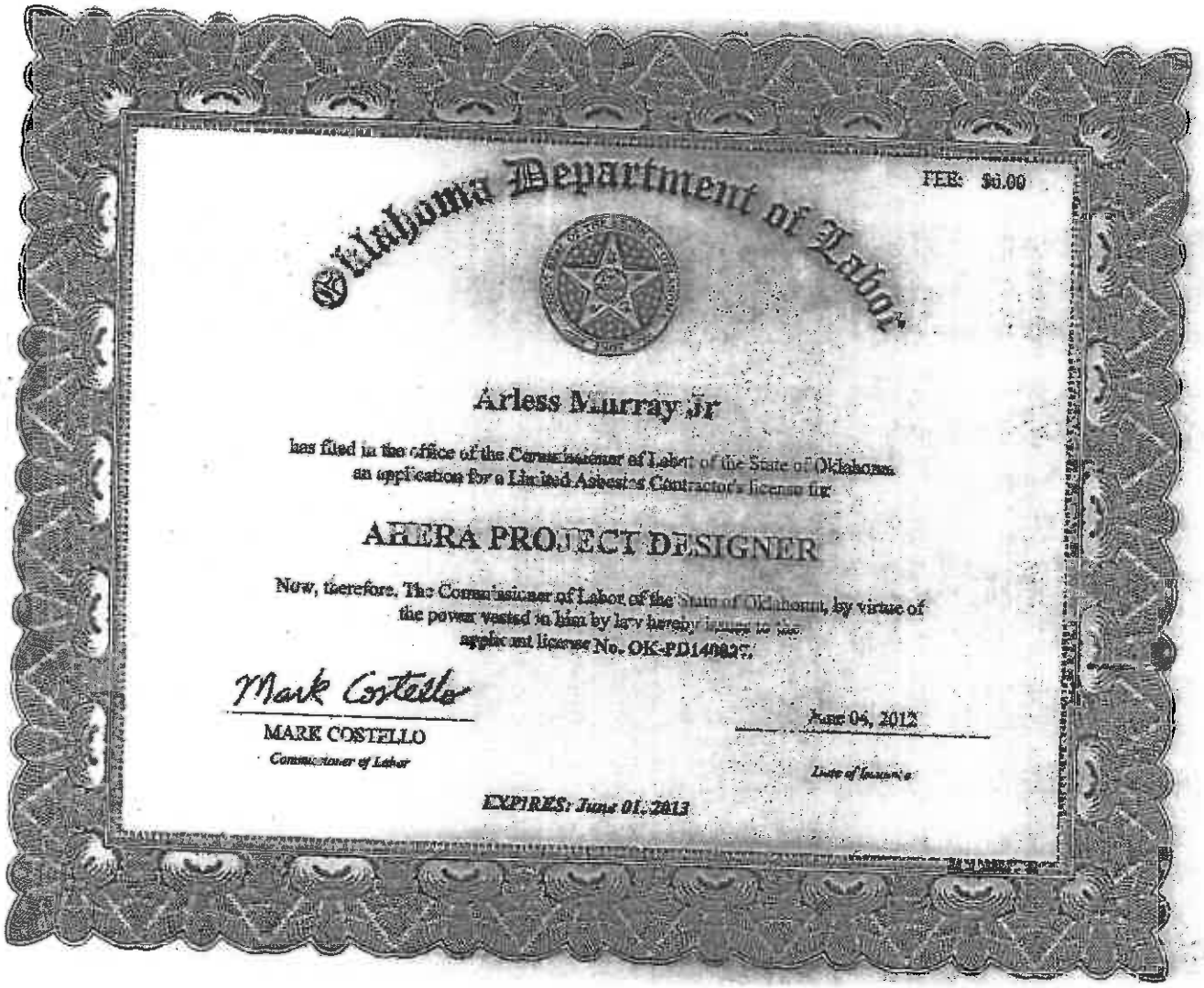
- No variances from the Rules are required at this time.

CERTIFICATION

This Project Design was prepared in accordance with OAC 380:50 and the Project Design Checklist issued by the Oklahoma Department of Labor.

Arless Murray
OKPD-140097

Date 10/25/12



Oklahoma Department of Labor

FEE: $0.00

Arless Murray Jr

has filed in the office of the Commissioner of Labor of the State of Oklahoma an application for a Limited Asbestos Contractor's license for:

AHERA PROJECT DESIGNER

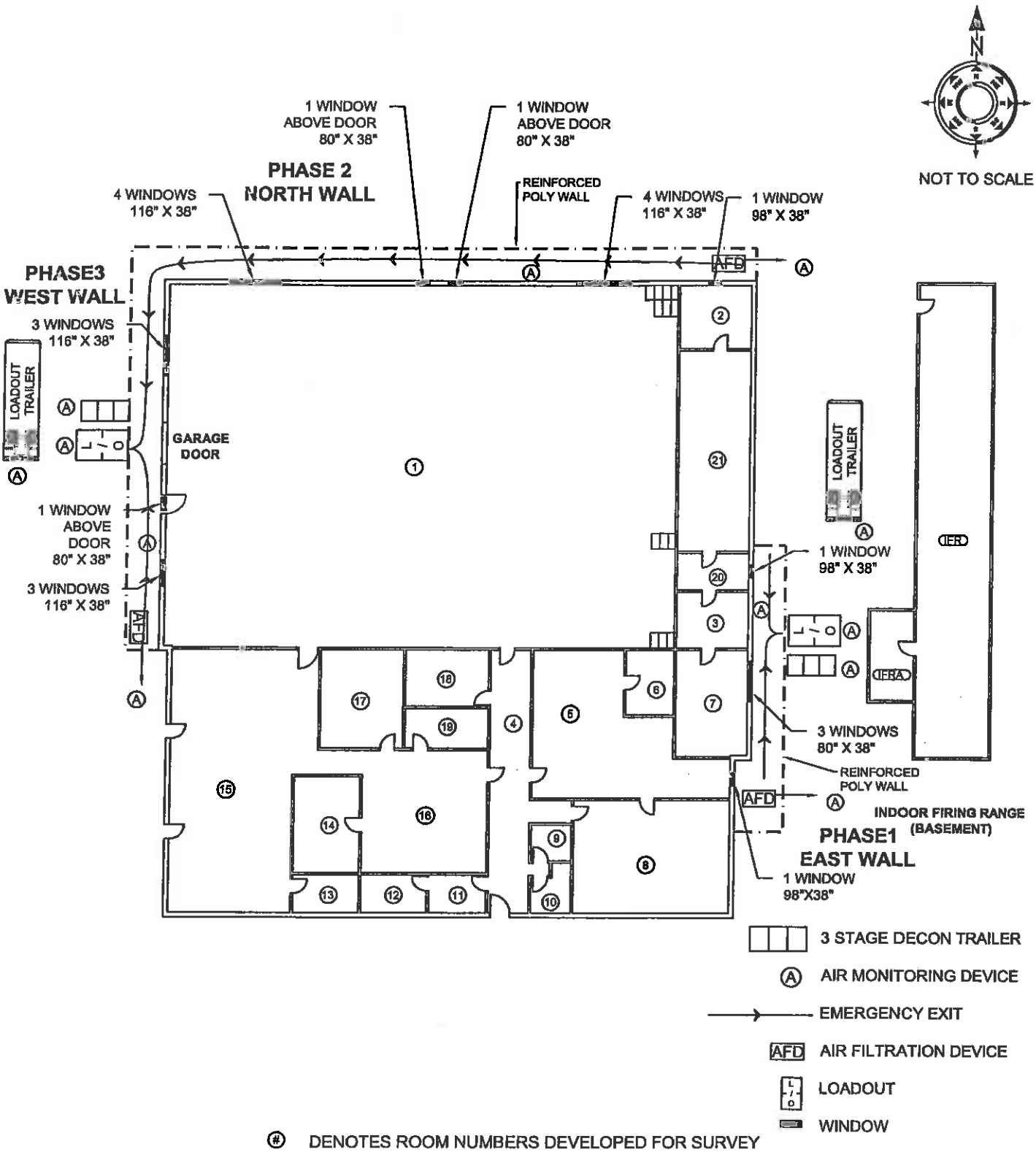
Now, therefore, The Commissioner of Labor of the State of Oklahoma, by virtue of the power vested in him by law hereby issues to the applicant license No. OK-PD1408[illegible]

Mark Costello

MARK COSTELLO
Commissioner of Labor

June 04, 2012
Date of Issuance

EXPIRES: June 01, 2013



GMR
& Associates, Inc.
2520 West I-44 Service Road, Ste. 200
P.O Box 57827
Oklahoma City, OK 73157-7827
Phone: 405/528-7017, Fax: 405/528-3346

Figure 1
Asbestos Abatement Project Design
Weatherford Armory
223 W. Rainey Avenue
Weatherford, Oklahoma 73096

Appendix A

Laboratory Results and Chain of Custody Field Sheets

QUANTEM LABORATORIES

2033 Heritage Park Drive / Oklahoma City, OK 73120 / (405) 755-7272 / Fax (405) 755-2068

Polarized Light Microscopy Asbestos Analysis Report

QuanTEM Lab No. 205395
Account Number: B216

Client: GMR & Associates, Inc.
PO Box 57827
Oklahoma City, OK 73157

Date Received: 03/13/2012
Received By: Sherrie Leftwich
Date Analyzed: 03/17/2012
Analyzed By: Gayle Ooten
Methodology: EPA/600/R-93/116

Project: Weatherford Armory
Project Location: N/A
Project Number: 2012017

QuanTEM Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
001	WA-01A	Homogeneous	Gray Floor Tile	Asbestos Not Present	NA	Vinyl CaCO3
002	WA-02A	Homogeneous	Yellow Mastic	Asbestos Not Present	NA	Glue
003	WA-03A	Homogeneous	Tan Floor Tile	Asbestos Not Present	NA	Vinyl CaCO3
004	WA-04A	Homogeneous	Yellow Mastic	Asbestos Not Present	Cellulose <1	Glue
005	WA-05A	Homogeneous	Black Floor Tile	Asbestos Not Present	NA	Vinyl CaCO3
006	WA-06A	Homogeneous	Yellow Mastic	Asbestos Not Present	Cellulose <1	Glue
007	WA-07A	Homogeneous	White Sheetrock	Asbestos Not Present	Cellulose 20	Gypsum

Unless otherwise noted, upon receipt the condition of the sample was acceptable for analysis.

2033 Heritage Park Drive / Oklahoma City, OK 73120 / (405) 755-7272 / Fax (405) 755-2058

Polarized Light Microscopy Asbestos Analysis Report

QuanTEM Lab No. 205395
Account Number: B216
Date Received: 03/13/2012
Received By: Sherrie Loftwich
Date Analyzed: 03/17/2012
Analyzed By: Gayle Cotes
Methodology: EPA/600/R-93/116

Client: GMR & Associates, Inc.
PO Box 57827
Oklahoma City, OK 73157

Project: Weatherford Armory
Project Location: N/A
Project Number: 2012017

QuanTEM Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
008	WA-08A	Homogeneous	White Texture	Asbestos Not Present	NA	CaCO3 Paint
009	WA-08B	Homogeneous	White Texture	Asbestos Not Present	NA	CaCO3 Paint
010	WA-08C	Homogeneous	White Texture	Asbestos Not Present	NA	CaCO3 Paint
011	WA-09A	Homogeneous	Gray Window Glazing	Asbestos Present Chrysotile 2	NA	CaCO3 Binder
012	WA-10A	Homogeneous	White Ceiling Tile	Asbestos Not Present	Cellulose 30 Glass Fiber 30	Paint Perlite
013	WA-11A	Homogeneous	White Ceiling Tile	Asbestos Not Present	Cellulose 30 Glass Fiber 30	Paint Perlite
014	WA-12A	**	** **	**	Not Analyzed	

No Sample Received

Unless otherwise noted, upon receipt the condition of the sample was acceptable for analysis.

2033 Heritage Park Drive / Oklahoma City, OK 73120 / (405) 755-7272 / Fax (405) 755-2068

Polarized Light Microscopy Asbestos Analysis Report

QuanTEM Lab No. 205395
Account Number: B216

Client: GMR & Associates, Inc.
PO Box 57827
Oklahoma City, OK 73157

Date Received: 03/13/2012
Received By: Sherrie Leftwich
Date Analyzed: 03/17/2012
Analyzed By: Gayle Ooten
Methodology: EPA/600/R-93/116

Project: Weatherford Armory
Project Location: N/A
Project Number: 2012017

QuanTEM Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous

Gayle Ooten, Analyst

3/17/2012
Date of Report

Unless otherwise noted, upon receipt the condition of the sample was acceptable for analysis.

QUANTEM LABORATORIES

Asbestos Chain-of-Custody

2033 Heritage Park Drive, Oklahoma City, OK 73120-7522
(800) 822-1650 (405) 755-7272 Fax: (405) 755-2058
www.quantemlab.com

Page 1 of 1

Lab No. 205395

Company Name: GMR + Associates, INC. Acct.#: Project Name: Weatherford Armory

Project Location: Project Number: 2012017

	Sample Number	To Be Analyzed	Color / Description	Volume / Area (if applicable)	Comments
1	WA-01A		1x1 wh FT		685
2	02A		mastic on 01A		49,10
3	03A		1x1 Brown FT		900 SF
4	04A		mastic on 03A		13+16
5	05A		9x9 Alk FT		530
6	06A		mastic 05A		Rm 81
7	07A		Sheetrock wall		
8	08A		Texture on sheetrock		Rm 9,10
9	08B		" " "		7' (1746 SF)
10	08C		" " "		405 F
11	09A		window Caulk	metal Pool W.	
12	10A		2x4 CT	(13x42)84	245,770, 480
13	11A		2x2 CT	40	
*14	12A		Roofing material		

LEGAL DOCUMENT
Please Print Legibly

PLM
☑ Bulk Analysis
☐ 400 Point Count
☐ 1000 Point Count
☐ Gravimetric Preparation Fee
☐ Other

TEM
☐ Air - AHERA
☐ Air - NIOSH 7402
☐ Bulk - Qualitative [Yes / No] - EPA 600/R-93/116
☐ Bulk - Quantitative [weight %] - Chatfield
☐ Dust - Qualitative [Yes / No]
☐ Dust - Quantitative [structures/cm²] - ASTM D5755
☐ Drinking Water - EPA 100.2
☐ Waste Water - EPA 600/4-83-043
☐ Other

PCM
☐ NIOSH 7400
☐ Other

TURNAROUND TIME
☐ Rush
☐ Same Day
☐ 24 Hour
☐ 3-Day
☒ 5-Day

CONTACT INFORMATION
Name:
Phone:
Report Results VIA (CHOOSE ONE):
☐ FAX:
☒ QUANTEM Website
☐ E-Mail:

Relinquished by: Todd Haines 03/13/17 1530 Received by: S. Sifwick 3/13/17 3:30

* No sample received SM

Saturday FedEx Shipping - CALL TO SCHEDULE
Use this address for Saturday FedEx only: 4220 N. Santa Fe Ave., Oklahoma City, OK 73105-6517

2033 Heritage Park Drive / Oklahoma City, OK 73120 / (405) 755-7272 / Fax (405) 755-2058

Polarized Light Microscopy Asbestos Analysis Report

QuanTEM Lab No. 205630
Account Number: B216
Date Received: 03/20/2012
Received By: Sherrie Leftwich
Date Analyzed: 03/20/2012
Analyzed By: Gayle Ooten
Methodology: EPA/600/R-93/116

Client: GMR & Associates, Inc.
PO Box 57827
Oklahoma City, OK 73157

Project: Weatherford Armory
Project Location: PT CT for 205395
Project Number: 2012017

QuanTEM Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
001	WA-09A	Homogeneous	Gray Window Glazing	Asbestos Present Chrysotile 1.75 400 Point Count	NA	CaCO3 Binder

Gayle Ooten, Analyst

3/20/2012
Date of Report

Unless otherwise noted, upon receipt the condition of the sample was acceptable for analysis.

QuanTEM is a NVLAP accredited TEM and PLM laboratory (Lab Code: 101959-0). This report relates only to the specific items tested. NVLAP accreditation applies only to analysis performed utilizing EPA/600/M4-82-020 and EPA/600/R-93/116 methods. This report may not be used to claim product endorsement by NVLAP or any other agency of the US Government. This report may not be reproduced except in full, without the written approval of the laboratory.

GMR & Associates, Inc.

QUANTEM LABORATORIES

Asbestos Chain-of-Custody

2033 Heritage Park Drive, Oklahoma City, OK 73120-7602
(800) 822-1650 (405) 755-7272 Fax: (405) 755-2058
www.quantem.com

Page 1 of 1

This Box for Lab Use Only
Lab No. 205395
Accpt Rejct

Company Name: GMR + Associates, INC. Acct #: B
Project Location:
Project Name: Weatherford Armory
Project Number: 2012017

	Sample Number	To Be Analyzed	Color / Description	Volume / Area (if applicable)	Comments
1	WA-01A		1x1 wh FT		685
2	02A		mastic on 01A		49.10
3	03A		1x1 Brown FT		900 SF
4	04A		mastic on 03A		13x16
5	05A		9x9 Blk FT		530
6	06A		mastic 05A		East
7	07A		Sheetrock wall		
8	08A		Texture on sheetrock		Rm 910
9	08B		" " "		7' (1740 SF)
10	08C		" " "		40 SF
11	09A		window caulk	meter/ft N.	
12	10A		2x4 CT	(13x42)84	265770 480
13	11A		3x2 CT	40	
*14	12A		Roofing material		

LEGAL DOCUMENT
Please Print Legibly

PLM
- Bulk Analysis (EPA 600/R-93/116)
- 400 Point Count
- 1000 Point Count
- Gravimetric Preparation Fee
- Other

PCM
- NIOSH 7400
- Other

TEM
- Air - AHERA
- Air - NIOSH 7402
- Bulk - Qualitative (Yes / No) - EPA 600/R-93/116
- Bulk - Quantitative (weight %) - Chatfield
- Dust - Qualitative (Yes / No)
- Dust - Quantitative (str/area cm) - ASTM D5755
- Drinking Water - EPA 100.2
- Waste Water - EPA 600/4-83-043
- Other

TURNAROUND TIME
- Rush
- Same Day
- 24 Hour
- 3-Day
- ☑ 5-Day

CONTACT INFORMATION
Name:
Phone:
Report Results VIA (CHOOSE ONE):
- FAX
- ☑ QuanTEM Web Site
- E-Mail

Relinquished by: Bill Harris 03/13/12 1530
Received by: SLeftwich 3/13/12 3:30

* No sample received SM

Saturday FedEx Shipping - CALL TO SCHEDULE
Use this address for Saturday FedEx only: 4220 N. Santa Fe Ave., Oklahoma City, OK 73105-8617

Project Design Review Form

Oklahoma Department of Labor
Asbestos Division
3017 N. Stiles, Oklahoma City, OK 73105
Phone – (405)521-6464 Fax – (405)521-6025

Project Name: Weatherford Armory
Project No: 12-7308 Date: 11/01/2012
Project Designer: Arless Murray

Approved: X
Disapproved: _____

	ITEM	ACCEPTED	REJECTED	COMMENTS
1.	A statement that DOL Abatement of Friable Materials Rules apply.	X		Asbestos statutes and Abatement of Friable Asbestos Materials Rules, (OAC 380:50) State of Oklahoma Department of Labor, Asbestos Division.
2.	Sequencing and phasing of work.	X		Three Phases.
3.	Identification of means of egress and a fire protection plan and a diagram for emergency escape routes, and fire extinguisher placements.	X		Two emergency exits, must have battery backed up lighting. 10:ABC fire extinguishers.
4.	The quantity, type, percentage with bulk analysis unless presumed and a diagramed location of asbestos materials to be abated.	X		23 windows will be removed. The windows have caulking that contain 2% chrysotile asbestos. Windows are located on the east, north and west side of building.
5.	Abatement methods, and techniques, and numbers of containments, glove bags or mini-containments.	X		Windows will be removed, HEPA vacuumed, then wrapped with two layers of 6-mil reinforced poly. Lock down is required for abated surfaces.
6.	Details of personal and area air monitoring samples.	X		2/25% personal monitors. Five area monitors.
7.	Numbers and locations of Clean Test samples and type of analysis to be employed.	X		5 PCM Clearance samples will be ran in each area per OAC 380:50-11-2
8.	Numbers, capacities, a diagram to identify locations, and discharge points, if any, of negative air machines.	X		One 2000 CFM negative air machine, externally exhausted, will provide six air changes per hour.
9.	Details of project containment(s), glove bag or mini-containments, including drawings. Details shall include all applicable subchapters, including but not limited to scaffolding and live electric isolation.	X		Nylon reinforced poly critical barriers and drop cloths. Floors must extend a minimum of ten feet from the wall. Walls will be attached to the roof and/or supported by a wooden frame as needed.
10.	Details of decontamination system(s).	X		Three stage attached decontamination unit with a negative air flow from the clean room through the shower to the dirty room.
11.	The extent to which asbestos-contaminated soils, if any, must be removed and the sampling methods of determining the efficacy of such removal.	X		No soils involved.
12.	Special materials or methods required to protect objects in the work area should be detailed, (plywood over carpeting or hardwood floors to prevent damage from scaffolds and/or falling materials.	X		No special materials/methods required.
13.	Any variances from the Abatement of Friable Asbestos Materials Rules.	X		No variances requested.

The Department of Labor reserves the right to require additional engineering or environmental controls consistent with the Abatement of Friable Asbestos Materials Rules which may be necessary because of discrepancies between this Project Design and field conditions or from unanticipated changes in field conditions.

REVIEWED BY: _____ DATE: 11-6-12

REVIEWED BY: _____ DATE: 11/6/12

LEAD-BASED PAINT INSPECTION REPORT

NATIONAL GUARD ARMORY
223 W. RAINEY AVENUE
WEATHERFORD, OK 73096

GMR Project Number 2012017
March 16, 2012

Oklahoma Department of Environmental Quality
Land Protection Division
P. O. Box 1677
Oklahoma City, OK 73101-1677
Attention: Mr. Dustin Davidson

GMR & Associates, Inc.
ENGINEERS, PLANNERS, ENVIRONMENTAL SPECIALISTS, HYDROGEOLOGISTS
2520 West I-44 Service Road, Suite 200
P.O. Box 57827
Oklahoma City, OK 73157-7827
Telephone: 405-528-7017
Fax: 405-528-3346

Prepared by:

Jeffrey Burger
Basin Environmental and Safety Technologies
LBP Risk Assessor, OKRASR13639

Reviewed by:

Arless Murray, Jr.
President

EXECUTIVE SUMMARY

Basin Environmental and Safety Technologies (Basin) performed a lead-based paint inspection of the interior and exterior painted surfaces at the Former National Guard Armory building on March 13, 2012. The property is located at 223 W. Rainey Avenue, Weatherford, Oklahoma 73096 and is owned by the City of Weatherford, located at 522 W. Rainey Avenue, Weatherford, OK 73096 (405-247-6651). The inspection identified the presence, quantity, locations, and characteristics of lead on all interior and exterior painted surfaces and building components. Surfaces were tested according to the specifications described in the protocols for lead-based paint testing in the Department of Housing and Urban Development's (HUD) Guidelines, Chapter 7 (1997 revision) and any applicable Federal, State, and Local regulations.

The objective of the inspection was to identify surfaces with lead in concentrations above the Environmental Protection Agency's (EPA) threshold of 1.0 mg/cm^2 by X-Ray Fluorescence (XRF) analysis. A total of twenty-three (23) room equivalents, including the building exterior.

Surfaces found to contain lead-based paint by XRF analysis are listed in table below. All testing combinations not specifically tested, but identical to those represented below should be considered positive for lead-based paint unless otherwise noted. A listing of all tests can be found in **Appendix A.**

Reading Number	Room	Side	Component	Feature	Color	Condition	Substrate	Lead (mg/cm2)
4	1	A	Wall		White	Intact	Brick	1.3
5	1	A	Wall		Red	Intact	Brick	1.3
6	1	B	Wall		Red	Intact	Brick	1.6
7	1	B	Wall		White	Intact	Brick	1.5
9	1	C	Wall		White	Intact	Brick	1.9
10	1	C	Wall		Red	Intact	Brick	2.2
16	1	D	Wall	Hand rail	Yellow	Fair	Metal	1.5
17	1	D	Wall	Steps	Yellow	Fair	Concrete	2.2
19	1	A	Door	Jamb	Gray	Fair	Metal	2.5
20	1	A	Door		Gray	Fair	Wood	3.1
21	1	A	Wall	Conduit	White	Fair	Metal	1.8

Reading Number	Room	Side	Component	Feature	Color	Condition	Substrate	Lead (mg/cm2)
22	1	A	Wall	Conduit	White	Fair	Metal	1.7
23	1	A	Door	Jamb	Gray	Poor	Metal	2.8
24	1	A	Door		Gray	Poor	Wood	4.4
26	1	A	Window		Gray	Poor	Metal	1.4
27	1	B	Door	Jamb	Red	Fair	Metal	2.4
31	2	C	Wall		Blue	Poor	Brick	1.2
34	3	A	Wall		White	Intact	Brick	1.7
35	3	B	Wall		White	Intact	Brick	1.3
36	3	C	Wall		White	Intact	Brick	1.3
39	3	D	Wall		White	Intact	Brick	1.3
40	3	A	Door	Jamb	Gray	Intact	Metal	2.6
41	3	A	Door		Red	Intact	Metal	3.7
53	4	D	Door	Jamb	Red	Intact	Metal	3.8
54	4	D	Door		Red	Intact	Metal	3.9
55	4	D	Door	Jamb	Red	Intact	Metal	3.6
56	4	D	Door		Red	Intact	Wood	3.9
64	5	D	Wall		Red	Fair	Brick	2.9
71	5	D	Window	Bars	Red	Intact	Metal	3.2
104	11	B	Door	Jamb	Beige	Intact	Metal	3.7
116	13	B	Door	Jamb	Red	Intact	Metal	2.9
117	13	B	Door		Beige	Intact	Metal	3.2
125	15	B	Wall		Red	Poor	Brick	1.2
127	15	C	Wall		Red	Poor	Brick	1.7

Reading Number	Room	Side	Component	Feature	Color	Condition	Substrate	Lead (mg/cm2)
147	18	D	Door		White	Intact	Wood	3.5
148	18	D	Door	Jamb	White	Intact	Metal	3.3
156	20	A	Wall		White	Intact	Brick	1.2
159	20	D	Wall		White	Intact	Brick	1.3
168	21	D	Wall		Brown	Poor	Brick	1.6
181	Exterior	D	Window	Board	Beige	Poor	Wood	2.5
183	Exterior	D	Window	Bars	Beige	Poor	Wood	1.7
194	1		Ceiling	Beam	Silver	Intact	Metal	1.3
195	1		Ceiling	Joists	Silver	Intact	Metal	1.6
196	1		Ceiling	Brace	Silver	Intact	Metal	1.7

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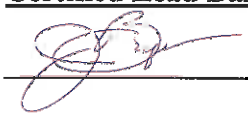
I. CERTIFICATION

I certify that this inspection, conducted at the Former National Guard Armory located at 223 Rainey Avenue, Weatherford, OK 73096, complies with accepted standards, practices, and regulations promulgated by the U.S. Department of Housing and Urban Development, the Environmental Protection Agency, and the Oklahoma Department of Environmental Quality. The results accurately reflect the condition of the property at the time the inspection was performed.

Certified Lead Based Paint Inspector/Risk Assessor



Jeffrey Burger
Certified Lead-Based Paint Inspector/Risk Assessor
Registration No: OKRASR13639 State: OK

Certified Lead Based Paint Firm No. OKFIRM13434
Basin Environmental and Safety Technologies
3120 South Meridian
Oklahoma City, OK 73119
405-232-5737

Revision Number:	Review Date:	Reviewed By:	Reviewer Initials:
001	March 23, 2012	Todd Wolfard	

II. INTRODUCTION

Basin Environmental and Safety Technologies (Basin) performed a lead-based paint inspection of the interior and exterior painted surfaces at the Former National Guard Armory building on February 23, 2012. The property is located at 223 West Rainey Avenue, Weatherford, OK 73096 and is owned by the City of Weatherford, located at 522 West Rainey, Weatherford, OK 73096 (405-247-6651). The inspection identified the presence, quantity, locations, and characteristics of lead on all interior and exterior painted surfaces and building components. Surfaces were tested according to the specifications described in the protocols for lead-based paint testing in the Department of Housing and Urban Development's (HUD) Guidelines, Chapter 7 (1997 revision) and any applicable Federal, State, and Local regulations.

The objective of the inspection was to identify surfaces with lead in concentrations above the Environmental Protection Agency's (EPA) threshold of 1.0 mg/cm^2 by X-Ray Fluorescence (XRF) analysis. A total of twenty-three (23) room equivalents, including the building exterior were inspected.

III. INSPECTION FINDINGS

Surfaces found to contain lead-based paint by XRF analysis are listed in **Tables 1 through 3** below. All testing combinations not specifically tested, but identical to those represented below should be considered positive for lead-based paint unless otherwise noted. A listing of all tests can be found in **Appendix A**.

Table 1: Doors and Door Frames with Lead-Based Paint

Reading Number	Room	Side	Component	Feature	Color	Condition	Substrate	Lead (mg/cm2)	Door Size (H" x W")
19	1	A	Door	Jamb	Gray	Fair	Metal	2.5	83" x 37"
20	1	A	Door		Gray	Fair	Wood	3.1	83" x 37"
23	1	A	Door	Jamb	Gray	Poor	Metal	2.8	10' x 10'
24	1	A	Door		Gray	Poor	Wood	4.4	10' x 10'
27	1	B	Door	Jamb	Red	Fair	Metal	2.4	84" x 36"
40	3	A	Door	Jamb	Gray	Intact	Metal	2.6	84" x 36"
41	3	A	Door		Red	Intact	Metal	3.7	84" x 36"
53	4	D	Door	Jamb	Red	Intact	Metal	3.8	84" x 48"
54	4	D	Door		Red	Intact	Metal	3.9	84" x 48"
55	4	D	Door	Jamb	Red	Intact	Metal	3.6	84" x 36"
56	4	D	Door		Red	Intact	Wood	3.9	84" x 36"
102	11	B	Door	Jamb	Beige	Intact	Metal	2.4	84" x 36"
104	11	B	Door	Jamb	Beige	Intact	Metal	3.7	84" x 28"
116	13	B	Door	Jamb	Red	Intact	Metal	2.9	84" x 36"
117	13	B	Door		Beige	Intact	Metal	3.2	84" x 36"
147	18	D	Door		White	Intact	Wood	3.5	84" x 36"
148	18	D	Door	Jamb	White	Intact	Metal	3.3	84" x 36"

Table 2: Windows and Window Frames with Lead-Based Paint

Reading Number	Room	Side	Component	Feature	Color	Condition	Substrate	Lead (mg/cm2)	Door Size (H" x W")
26	1	A	Window		Gray	Poor	Metal	1.4	1.4
186	Exterior	D	Window		Beige	Poor	Metal	3.3	3.3

Table 3: Miscellaneous Surfaces with Lead-Based Paint

Reading Number	Room	Side	Component	Feature	Color	Condition	Substrate	Lead (mg/cm2)
4	1	A	Wall		White	Intact	Brick	1.3
5	1	A	Wall		Red	Intact	Brick	1.3
6	1	B	Wall		Red	Intact	Brick	1.6
7	1	B	Wall		White	Intact	Brick	1.5
9	1	C	Wall		White	Intact	Brick	1.9
10	1	C	Wall		Red	Intact	Brick	2.2
16	1	D	Wall	Hand Rail	Yellow	Fair	Metal	1.5
17	1	D	Wall	Steps	Yellow	Fair	Concrete	2.2
21	1	A	Wall	Conduit	White	Fair	Metal	1.8
22	1	A	Wall	Conduit	White	Fair	Metal	1.7
31	2	C	Wall		Blue	Poor	Brick	1.2
34	3	A	Wall		White	Intact	Brick	1.7
35	3	B	Wall		White	Intact	Brick	1.3
36	3	C	Wall		White	Intact	Brick	1.3
39	3	D	Wall		White	Intact	Brick	1.3
64	5	D	Wall		Red	Fair	Brick	2.9
71	5	D	Windows	Bars	Red	Intact	Metal	3.2
125	15	B	Wall		Red	Poor	Brick	1.2
127	15	C	Wall		Red	Poor	Brick	1.7
156	20	A	Wall		White	Intact	Brick	1.2
159	20	D	Wall		White	Intact	Brick	1.3
168	21	D	Wall		Brown	Poor	Brick	1.6
181	Exterior	D	Window	Board	Beige	Poor	Wood	2.5
183	Exterior	D	Window	Bars	Beige	Poor	Wood	1.7
194	1		Ceiling	Beam	Silver	Intact	Metal	1.3
195	1		Ceiling	Joists	Silver	Intact	Metal	1.6
196	1		Ceiling	Brace	Silver	Intact	Metal	1.7

Photographs of lead-based paint locations can be found in **Appendix B**. Diagrams identifying room equivalents and lead-based paint locations can be found in **Appendix C**.

IV. SCOPE OF PROJECT

1. Background

The property, located at 223 Rainey Avenue, Weatherford, OK 73096, was constructed in 1938. The property consists of a brick building with 16,014 square feet of floor space. The single level building contains a total of twenty-three (23) room equivalents. Exterior walls on the main building (and/or annex building) for the purposes of this report are also considered a room equivalent.

2. Training

All inspectors utilized by Basin are EPA/Oklahoma Department of Environmental Quality (ODEQ) licensed Lead-Based Paint Inspector/Risk Assessors. Furthermore, all Inspector/Risk Assessors are aware of the hazards associated with and the safe handling of radioactive materials. See **Appendix D** for copies of appropriate training documentation.

3. Equipment

A Niton Model XLp703AW (Serial #10713) XRF Analyzer was used for the inspection. The instrument contained Cadmium-109 as its radioactive source. The source was installed on April 14, 2011. During the inspection, the XRF was used in K+L testing mode for all surfaces. The Performance Characteristics Sheet for the instrument can be found in **Appendix E**. The manufacturer calibration record for the instrument can be founding **Appendix F**.

4. Methodology

The inspection procedure used at this location complies with the EPA Performance Characteristic Sheet (PCS) for the specific XRF instrument used during the inspection; this includes adhering to the manufacturer's modifications and recommendations. The specific instrument used was manufactured by NITON Corporation, 900 Middlesex Turnpike, Building 8, Billerica, Massachusetts 01821. The lead-based paint inspection and testing protocols followed are found in the *HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (June 1995), Chapter 7 (1997 Revision)* and all State and Local regulations were followed. The standard threshold for lead-based paint as per HUD/EPA and the ODEQ of 1.0 mg/cm was utilized for classification of positive (above the threshold) and negative (below the threshold). When evaluating this report, it is assumed that (according to Chapter 7 of the HUD Guidelines) if one testing combination is positive for lead-based paint, then all other similar testing combinations are positive. The same assumption applies to negative readings. Any inconclusive readings are immediately followed by an additional reading of the same testing combination and test location.

Surfaces were classified by a testing combination consisting of the room equivalent, building component type, and substrate. The sides of room equivalents were labeled A, B, C, and D. Side A is the address (street facing) side of the building. Sides B, C, and D are identified clockwise of Side A while facing the address side of the building. Paint conditions were recorded as either "intact", "fair", or "poor." Paint in poor condition was defined as deterioration of more than two square feet on large components such as walls or 10% on smaller components such as baseboards. Paint in "fair" condition was defined as deterioration of less than or equal to two square feet on large components or 10% on smaller components. Paint in "intact" condition was defined as surfaces with no deteriorated paint. Interior painted surfaces that were tested included but were not limited to walls, doors, windows, trim, vents, stairwells, ceilings, cabinets, and bookcases.

Calibration of the XRF instrument was checked using a lead paint standard known to contain 1.0 mg/cm^2 of lead. The instrument was checked three times before the inspection begins and three times when the inspection is completed. Additionally, on days that the inspection lasted more than four hours, the instrument calibration was checked every four hours during the inspection. The instrument maintained a consistent calibration reading within the manufacturer's range of 0.8 – 1.2 mg/cm^2 for this inspection.

V. RECOMMENDATIONS

Options for controlling potential lead-based paint hazards include, but are not limited to:

- Removal and replacement of building components
- Removal of lead-based paint
- Encapsulation of lead-based paint
- Enclosure of lead-based paint

Based on conditions present at this property at the time of the inspection, Basin recommends the following interim control and abatement options:

- Remove and replace all window components found to have lead-based paint.
- Remove and replace all door components found to have lead-based paint.
- Utilize interim controls (i.e. stabilization and repainting) to maintain all other lead-based paint which is in "intact" or "fair" condition.
- Remove and replace all miscellaneous building components with lead-based paint in "poor" condition.

Basin estimates the cost for the above mentioned lead-based paint interim control and abatement options to be between $13,000 and $15,000.

VI. LIMITATIONS

Environmental conditions are subject to change and conditions reported herein apply only to the date and time of the testing. Therefore, changes in environmental conditions including, but not limited to the condition of painted components may change following this inspection are not predicted by this report. Those areas that are not accessible at the time of the inspection should be considered positive for the presence of lead-based paint and lead hazards.

This document is the rendering of a professional service, the essence of which is to render advice, judgment, opinion, or professional skill. No attempt was made to document the condition of each and every structural or nonstructural element. In the event that additional information becomes available that could affect the conclusions reached in this investigation, Basin reserves the right to review and change if required, some or all of the opinions presented herein.

APPENDIX A

Rd #	Time	Duration	Units	Site	Room	Side	Component	Feature	Color	Condition	Substrate	Results	Depth I	PbC	Error
1	3/13/2012 11:04	20.24	mg / cm ^2	Weatherford A	calibrate							Positive	1.07	1	0.1
2	3/13/2012 11:04	20.43	mg / cm ^2	Weatherford A	calibrate							Positive	1.06	1	0.1
3	3/13/2012 11:05	22.71	mg / cm ^2	Weatherford A	calibrate							Positive	1.05	1	0.1
4	3/13/2012 11:07	4.09	mg / cm ^2	Weatherford A	1	A	Wall		White	Intact	Brick	Positive	2.13	1.3	0.2
5	3/13/2012 11:09	6.31	mg / cm ^2	Weatherford A	1	A	Wall		Red	Intact	Brick	Positive	3.2	1.3	0.2
6	3/13/2012 11:10	3.34	mg / cm ^2	Weatherford A	1	B	Wall		Red	Intact	Brick	Positive	2.63	1.6	0.4
7	3/13/2012 11:10	2.95	mg / cm ^2	Weatherford A	1	B	Wall		White	Intact	Brick	Positive	2.61	1.5	0.5
8	3/13/2012 11:11	4.46	mg / cm ^2	Weatherford A	1	C	Wall		White	Intact	Brick	Null	2.41	1.2	0.2
9	3/13/2012 11:12	3.34	mg / cm ^2	Weatherford A	1	C	Wall		White	Intact	Brick	Positive	2.14	1.9	0.4
10	3/13/2012 11:12	1.86	mg / cm ^2	Weatherford A	1	C	Wall		Red	Intact	Brick	Positive	2.56	2.2	0.7
11	3/13/2012 11:14	11.11	mg / cm ^2	Weatherford A	1	D	Wall		Red	Intact	Brick	Negative	1.72	0.7	0.2
12	3/13/2012 11:14	8.53	mg / cm ^2	Weatherford A	1	D	Wall		Red	Intact	Brick	Negative	1.46	0.06	0.02
13	3/13/2012 11:15	8.54	mg / cm ^2	Weatherford A	1	D	Wall		White	Intact	Brick	Negative	1.91	0.6	0.2
14	3/13/2012 11:16	4.46	mg / cm ^2	Weatherford A	1	D	Wall		Beige	Intact	Block	Negative	2.03	0.02	0.02
15	3/13/2012 11:17	1.48	mg / cm ^2	Weatherford A	1	D	Wall	cage	Black	Intact	Metal	Negative	1	0.02	0.04
16	3/13/2012 11:18	1.48	mg / cm ^2	Weatherford A	1	D	Wall	hand rail	Yellow	Fair	Metal	Positive	1.01	1.5	0.4
17	3/13/2012 11:21	1.48	mg / cm ^2	Weatherford A	1	D	Wall	Steps	Yellow	Fair	Concrete	Positive	1.17	2.2	0.5
18	3/13/2012 11:22	5.21	mg / cm ^2	Weatherford A	1	D	Wall	Steps	Red	Fair	Concrete	Negative	1.34	0.01	0.02
19	3/13/2012 11:24	1.86	mg / cm ^2	Weatherford A	1	A	Door	Jamb	Gray	Fair	Metal	Positive	1.56	2.5	0.6
20	3/13/2012 11:25	1.47	mg / cm ^2	Weatherford A	1	A	Door		Gray	Fair	Wood	Positive	1.68	3.1	0.9
21	3/13/2012 11:29	2.24	mg / cm ^2	Weatherford A	1	A	Wall	Conduit	White	Fair	Metal	Positive	2.37	1.8	0.6
22	3/13/2012 11:30	2.24	mg / cm ^2	Weatherford A	1	A	Wall	Conduit	White	Fair	Metal	Positive	3.12	1.7	0.6
23	3/13/2012 11:32	1.49	mg / cm ^2	Weatherford A	1	A	Door	Jamb	Gray	Poor	Metal	Positive	1.72	2.8	0.8
24	3/13/2012 11:34	1.48	mg / cm ^2	Weatherford A	1	A	Door		Gray	Poor	Wood	Positive	1.67	4.4	1.2
25	*3/13/2012 11:38*	*8.56*	*mg / cm ^2*	*Weatherford A*	*1*	*A*	*Window*		*Gray*	*Poor*	*Metal*	*Null*	*1.2*	*1*	*0.1*
26	3/13/2012 11:38	3.34	mg / cm ^2	Weatherford A	1	A	Window		Gray	Poor	Metal	Positive	1.27	1.4	0.3
27	3/13/2012 11:42	2.22	mg / cm ^2	Weatherford A	1	B	Door	Jamb	Red	Fair	Metal	Positive	5.09	2.4	1.1
28	3/13/2012 11:42	1.49	mg / cm ^2	Weatherford A	1	B	Door		Red	Fair	Metal	Negative	1.61	0	0.02
29	3/13/2012 11:45	1.84	mg / cm ^2	Weatherford A	2	A	Wall		Blue	Intact	block	Negative	1.09	0.03	0.04
30	3/13/2012 11:46	6.34	mg / cm ^2	Weatherford A	2	B	Wall		Blue	Intact	Brick	Negative	5.76	0.7	0.3
31	3/13/2012 11:46	9.65	mg / cm ^2	Weatherford A	2	C	Wall		Blue	Poor	Brick	Positive	2.07	1.2	0.1
32	3/13/2012 11:48	4.1	mg / cm ^2	Weatherford A	2	D	Wall		Blue	Poor	Brick	Negative	3.74	0.5	0.3
33	3/13/2012 11:49	1.11	mg / cm ^2	Weatherford A	2	D	Ceiling		White	Intact	Drywall	Negative	1	0.01	0.03
34	3/13/2012 11:52	2.23	mg / cm ^2	Weatherford A	3	A	Wall		White	Intact	Brick	Positive	2.46	1.7	0.6
35	3/13/2012 11:53	5.19	mg / cm ^2	Weatherford A	3	B	Wall		White	Intact	Brick	Positive	3.49	1.3	0.2
36	3/13/2012 11:55	9.65	mg / cm ^2	Weatherford A	3	C	Wall		White	Intact	Brick	Positive	3.06	1.3	0.2
37	*3/13/2012 11:56*	*12.24*	*mg / cm ^2*	*Weatherford A*	*3*	*D*	*Wall*		*White*	*Intact*	*Brick*	*Null*	*2.8*	*0.9*	*0.1*
38	*3/13/2012 11:58*	*12.2*	*mg / cm ^2*	*Weatherford A*	*3*	*D*	*Wall*		*White*	*Intact*	*Brick*	*Null*	*1.86*	*0.9*	*0.1*
39	3/13/2012 11:59	4.07	mg / cm ^2	Weatherford A	3	D	Wall		White	Intact	Brick	Positive	2.4	1.3	0.2
40	3/13/2012 12:00	1.48	mg / cm ^2	Weatherford A	3	A	Door	Jamb	Gray	Intact	Metal	Positive	2.33	2.6	0.9
41	3/13/2012 12:00	1.48	mg / cm ^2	Weatherford A	3	A	Door		Red	Intact	Metal	Positive	3.12	3.7	1.4

Rd. #	Time	Duration	Units	Site	Room	Side	Component	Feature	Color	Condition	Substrate	Results	Depth I	PbC	Error
42	3/13/2012 12:03	1.48	mg / cm ^2	Weatherford A	3	A	Ceiling		White	Poor	Drywall	Negative	1	0	0.02
43	3/13/2012 12:03	1.85	mg / cm ^2	Weatherford A	3	A	Floor		Red	Poor	Concrete	Negative	1.1	0.14	0.1
44	3/13/2012 12:05	4.09	mg / cm ^2	Weatherford A	4	A	Wall		Red	Intact	Concrete	Negative	7.25	0.6	0.3
45	3/13/2012 12:06	4.09	mg / cm ^2	Weatherford A	4	A	Wall		White	Intact	Concrete	Negative	1.93	0.6	0.3
46	3/13/2012 12:06	4.09	mg / cm ^2	Weatherford A	4	B	Wall		White	Intact	Concrete	Negative	6.3	0.5	0.3
47	3/13/2012 12:07	4.82	mg / cm ^2	Weatherford A	4	B	Wall		Red	Intact	Concrete	Negative	3.65	0.6	0.3
48	3/13/2012 12:07	4.1	mg / cm ^2	Weatherford A	4	C	Wall		Red	Intact	Concrete	Negative	2.63	0.6	0.3
49	3/13/2012 12:08	4.07	mg / cm ^2	Weatherford A	4	C	Wall		White	Intact	Concrete	Negative	3.66	0.5	0.3
50	3/13/2012 12:08	4.1	mg / cm ^2	Weatherford A	4	D	Wall		White	Intact	Concrete	Negative	3.54	0.6	0.3
51	3/13/2012 12:08	4.09	mg / cm ^2	Weatherford A	4	D	Wall		Red	Intact	Concrete	Negative	3.38	0.5	0.3
52	3/13/2012 12:09	1.48	mg / cm ^2	Weatherford A	4	D	Baseboard		Black	Intact	Concrete	Negative	2.35	0.12	0.16
53	3/13/2012 12:10	1.48	mg / cm ^2	Weatherford A	4	D	Door	Jamb	Red	Intact	Metal	Positive	2.79	3.8	1.3
54	3/13/2012 12:10	1.47	mg / cm ^2	Weatherford A	4	D	Door		Red	Intact	Metal	Positive	3.29	3.9	1.5
55	3/13/2012 12:11	2.22	mg / cm ^2	Weatherford A	4	D	Door	Jamb	Red	Intact	Metal	Positive	5.95	3.6	1.6
56	3/13/2012 12:14	1.47	mg / cm ^2	Weatherford A	4	D	Door		Red	Intact	Wood	Positive	3.07	3.9	1.4
57	3/13/2012 12:16	4.44	mg / cm ^2	Weatherford A	4	B	Wall	Conduit	White	Intact	Metal	Negative	4.67	0.19	0.11
58	3/13/2012 12:17	4.07	mg / cm ^2	Weatherford A	5	A	Wall		White	Fair	Brick	Negative	1.83	0.6	0.3
59	3/13/2012 12:18	4.1	mg / cm ^2	Weatherford A	5	A	Wall		Red	Fair	Brick	Negative	2.46	0.5	0.3
60	3/13/2012 12:19	3.69	mg / cm ^2	Weatherford A	5	A	Wall		Green	Fair	Brick	Negative	2.13	0.6	0.3
61	*3/13/2012 12:19*	*1.48*	*mg / cm ^2*	*Weatherford A*	*5*	*A*	*Wall*		*Red*	*Fair*	*Brick*	*Null*	*2.25*	*0.19*	*0.18*
62	3/13/2012 12:20	2.98	mg / cm ^2	Weatherford A	5	A	Wall		Red	Fair	Brick	Negative	1.8	0.17	0.11
63	3/13/2012 12:20	3.72	mg / cm ^2	Weatherford A	5	C	Wall		Red	Fair	Brick	Negative	1.72	0.6	0.3
64	3/13/2012 12:21	1.48	mg / cm ^2	Weatherford A	5	D	Wall		Red	Fair	Brick	Positive	1.4	2.9	0.7
65	3/13/2012 12:23	2.21	mg / cm ^2	Weatherford A	6	A	Wall		White	Fair	Concrete	Negative	1.91	0.08	0.09
66	3/13/2012 12:23	2.8	mg / cm ^2	Weatherford A	6	B	Wall		White	Fair	Concrete	Negative	1	0	0.02
67	3/13/2012 12:24	2.22	mg / cm ^2	Weatherford A	6	C	Wall		White	Fair	Concrete	Negative	1.61	0.02	0.04
68	3/13/2012 12:24	2.22	mg / cm ^2	Weatherford A	6	D	Wall		White	Fair	Concrete	Negative	1	0	0.02
69	3/13/2012 12:26	1.86	mg / cm ^2	Weatherford A	6	D	Door		Gray	Intact	Metal	Negative	1.25	0.28	0.15
70	3/13/2012 12:27	1.86	mg / cm ^2	Weatherford A	6	D	Door	Jamb	Gray	Intact	Metal	Negative	1.25	0.5	0.2
71	3/13/2012 12:28	1.49	mg / cm ^2	Weatherford A	5	D	Window	Bars	Red	Intact	Metal	Positive	1.53	3.2	0.8
72	3/13/2012 12:31	1.11	mg / cm ^2	Weatherford A	6	A	Wall		Gray	Intact	Drywall	Negative	1	0	0.02
73	3/13/2012 12:32	1.48	mg / cm ^2	Weatherford A	6	B	Wall		Gray	Intact	Drywall	Negative	1.01	0	0.02
74	3/13/2012 12:32	1.11	mg / cm ^2	Weatherford A	6	C	Wall		Gray	Intact	Drywall	Negative	1	0	0.02
75	3/13/2012 12:32	1.86	mg / cm ^2	Weatherford A	6	D	Wall		Gray	Intact	Drywall	Negative	1	0	0.02
76	3/13/2012 12:34	4.44	mg / cm ^2	Weatherford A	8	A	Wall		Wallpaper	Intact	Drywall	Negative	1.41	0	0.02
77	3/13/2012 12:35	1.48	mg / cm ^2	Weatherford A	8	B	Wall		Wallpaper	Intact	Drywall	Negative	2.1	0.01	0.04
78	3/13/2012 12:35	1.86	mg / cm ^2	Weatherford A	8	C	Wall		Wallpaper	Intact	Drywall	Negative	1	0	0.02
79	3/13/2012 12:35	1.86	mg / cm ^2	Weatherford A	8	D	Wall		Wallpaper	Intact	Drywall	Negative	1	0	0.02
80	3/13/2012 12:36	2.59	mg / cm ^2	Weatherford A	8	D	Cabinet		Brown	Intact	Wood	Negative	1	0.4	0.5
81	*3/13/2012 12:36*	*1.11*	*mg / cm ^2*	*Weatherford A*	*8*	*D*	*Cabinet*	*Door*	*Brown*	*Intact*	*Wood*	*Null*	*1*	*0.14*	*0.89*
82	3/13/2012 12:36	1.85	mg / cm ^2	Weatherford A	8	D	Cabinet	Door	Brown	Intact	Wood	Negative	1	0.26	0.51

Rd #	Time	Duration	Units	Site	Room	Side	Component	Feature	Color	Condition	Substrate	Results	Depth I	PbC	Error
83	3/13/2012 12:36	1.48	mg / cm ^2	Weatherford A	8	D	Door	Casing	Stained	Intact	Wood	Negative	1	0.14	0.49
84	3/13/2012 12:37	1.86	mg / cm ^2	Weatherford A	8	C	Door		Brown	Intact	Wood	Negative	1	0.14	0.4
85	3/13/2012 12:38	4.45	mg / cm ^2	Weatherford A	8	C	Wall	Corner Board	Stained	Intact	Wood	Negative	1	0.24	0.18
86	3/13/2012 12:38	2.22	mg / cm ^2	Weatherford A	8	C	Window	Casing	Stained	Intact	Wood	Negative	1	0.4	0.5
87	3/13/2012 12:39	1.47	mg / cm ^2	Weatherford A	8	B	Baseboard		Stained	Intact	Wood	Negative	2.18	0.3	0.58
88	3/13/2012 12:41	1.86	mg / cm ^2	Weatherford A	9	A	Wall		Beige	Intact	Drywall	Negative	1	0	0.02
89	3/13/2012 12:41	4.47	mg / cm ^2	Weatherford A	9	B	Wall		Beige	Intact	Drywall	Negative	1	0	0.02
90	3/13/2012 12:41	1.47	mg / cm ^2	Weatherford A	9	C	Wall		Beige	Intact	Drywall	Negative	1	0	0.02
91	3/13/2012 12:41	1.48	mg / cm ^2	Weatherford A	9	D	Wall		Beige	Intact	Drywall	Negative	1	0	0.02
92	3/13/2012 12:42	4.45	mg / cm ^2	Weatherford A	9	D	Wall	stalls	Green	Intact	Wood	Negative	1	0.22	0.2
93	3/13/2012 12:43	2.97	mg / cm ^2	Weatherford A	10	A	Wall		Beige	Intact	Drywall	Negative	1	0	0.02
94	3/13/2012 12:43	1.48	mg / cm ^2	Weatherford A	10	A	Wall		Beige	Intact	Drywall	Negative	3.27	0.01	0.05
95	3/13/2012 12:44	1.48	mg / cm ^2	Weatherford A	10	B	Wall		Beige	Intact	Drywall	Negative	1	0	0.02
96	3/13/2012 12:44	1.48	mg / cm ^2	Weatherford A	10	C	Wall		Beige	Intact	Drywall	Negative	1	0	0.02
97	3/13/2012 12:44	1.48	mg / cm ^2	Weatherford A	10	D	Wall		Beige	Intact	Drywall	Negative	1	0	0.02
98	*3/13/2012 12:45*	*0.74*	*mg / cm ^2*	*Weatherford A*	*11*	*A*	*Wall*		*Beige*	*Intact*	*Drywall*	*Null*	*1*	*0*	*0.03*
99	3/13/2012 12:47	1.49	mg / cm ^2	Weatherford A	11	B	Wall		Beige	Intact	Drywall	Negative	2.36	0.03	0.08
100	3/13/2012 12:47	1.48	mg / cm ^2	Weatherford A	11	C	Wall		Beige	Intact	Drywall	Negative	2.06	0.02	0.06
101	3/13/2012 12:47	1.85	mg / cm ^2	Weatherford A	11	D	Wall		Beige	Intact	Drywall	Negative	1.84	0.01	0.04
102	3/13/2012 12:48	2.22	mg / cm ^2	Weatherford A	11	B	Door	Jamb	Beige	Intact	Metal	Positive	2.63	2.4	0.7
103	3/13/2012 12:48	1.47	mg / cm ^2	Weatherford A	11	B	Door		Beige	Intact	Metal	Negative	1	0	0.03
104	3/13/2012 12:49	2.24	mg / cm ^2	Weatherford A	11	B	Door		Beige	Intact	Metal	Positive	6.03	3.7	1.6
105	3/13/2012 12:52	4.06	mg / cm ^2	Weatherford A	12	A	Wall		White	Poor	Concrete	Negative	2.06	0.6	0.3
106	3/13/2012 12:52	1.48	mg / cm ^2	Weatherford A	12	B	Wall		White	Poor	Concrete	Negative	1.74	0.01	0.04
107	3/13/2012 12:52	2.22	mg / cm ^2	Weatherford A	12	C	Wall		White	Poor	Concrete	Negative	1.36	0.03	0.05
108	3/13/2012 12:52	4.45	mg / cm ^2	Weatherford A	12	D	Wall		White	Poor	Concrete	Negative	3.19	0.01	0.02
109	3/13/2012 12:53	4.44	mg / cm ^2	Weatherford A	12	D	Floor		Black	Poor	Concrete	Negative	1.89	0.8	0.1
110	3/13/2012 12:55	2.96	mg / cm ^2	Weatherford A	13	A	Wall		Stained	Intact	Wood	Negative	1.87	0.4	0.5
111	3/13/2012 12:55	3.7	mg / cm ^2	Weatherford A	13	B	Wall		Stained	Intact	Wood	Negative	1.72	0.6	0.3
112	3/13/2012 12:56	1.48	mg / cm ^2	Weatherford A	13	C	Wall		Stained	Intact	Wood	Negative	10	0.23	0.62
113	3/13/2012 12:56	4.08	mg / cm ^2	Weatherford A	13	D	Wall		Stained	Intact	Wood	Negative	8.01	0.5	0.3
114	3/13/2012 12:57	3.69	mg / cm ^2	Weatherford A	13	B	Wall		White	Intact	Concrete	Negative	3.92	0.5	0.3
115	3/13/2012 12:57	4.09	mg / cm ^2	Weatherford A	13	B	Wall	Conduit	Brown	Intact	Metal	Negative	1.34	0.17	0.05
116	3/13/2012 12:58	1.86	mg / cm ^2	Weatherford A	13	B	Door	Jamb	Red	Intact	Metal	Positive	3.21	2.9	1
117	3/13/2012 12:58	1.97	mg / cm ^2	Weatherford A	13	B	Door		Beige	Intact	Metal	Positive	3.73	3.2	1.2
118	3/13/2012 13:01	1.48	mg / cm ^2	Weatherford A	14	A	Wall		Wallpaper	Intact	Drywall	Negative	1	0	0.02
119	3/13/2012 13:01	6.29	mg / cm ^2	Weatherford A	14	A	Wall		Brown	Intact	Drywall	Negative	1	0	0.02
120	3/13/2012 13:01	1.86	mg / cm ^2	Weatherford A	14	C	Wall		Wallpaper	Intact	Drywall	Negative	1	0.01	0.02
121	3/13/2012 13:02	1.47	mg / cm ^2	Weatherford A	14	D	Wall		Wallpaper	Intact	Drywall	Negative	1.94	0.02	0.06
122	3/13/2012 13:02	1.11	mg / cm ^2	Weatherford A	14	D	Ceiling		Wallpaper	Intact	Drywall	Negative	1	0	0.02
123	3/13/2012 13:04	5.94	mg / cm ^2	Weatherford A	15	A	Wall		Red	Intact	Brick	Negative	5.41	0.7	0.3

Rd. #	Time	Duration	Units	Site	Room	Side	Component	Feature	Color	Condition	Substrate	Results	Depth I	PbC	Error
124	3/13/2012 13:05	6.66	mg / cm ^2	Weatherford A	15	B	Wall		Red	Poor	Brick	Null	1.71	1	0.1
125	3/13/2012 13:05	4.42	mg / cm ^2	Weatherford A	15	B	Wall		Red	Poor	Brick	Positive	1.93	1.2	0.2
126	3/13/2012 13:06	1.49	mg / cm ^2	Weatherford A	15	C	Wall		Red	Poor	Brick	Null	5.03	0.6	0.8
127	3/13/2012 13:06	3.7	mg / cm ^2	Weatherford A	15	C	Wall		Red	Poor	Brick	Positive	4.49	1.7	0.4
128	3/13/2012 13:07	2.6	mg / cm ^2	Weatherford A	15	D	Wall		Red	Intact	Wood	Negative	1.39	0.25	0.41
129	3/13/2012 13:10	1.11	mg / cm ^2	Weatherford A	15	A	Window	Bars	Gray	Poor	Metal	Positive	1.86	3.8	1.6
130	3/13/2012 13:13	1.11	mg / cm ^2	Weatherford A	16	A	Wall		Wallpaper	Intact	Drywall	Negative	1.38	0.01	0.05
131	3/13/2012 13:13	0.74	mg / cm ^2	Weatherford A	16	B	Wall		Wallpaper	Intact	Drywall	Negative	1	0.01	0.04
132	3/13/2012 13:13	1.11	mg / cm ^2	Weatherford A	16	C	Wall		Wallpaper	Intact	Drywall	Negative	1.4	0.02	0.05
133	3/13/2012 13:13	1.85	mg / cm ^2	Weatherford A	16	D	Wall		Wallpaper	Intact	Drywall	Negative	2.67	0.03	0.07
134	3/13/2012 13:14	1.86	mg / cm ^2	Weatherford A	16	C	Door	Casing	Gray	Intact	Metal	Negative	1	0	0.02
135	3/13/2012 13:15	1.11	mg / cm ^2	Weatherford A	16	C	Door		Green	Intact	Metal	Negative	1	0	0.02
136	3/13/2012 13:16	4.07	mg / cm ^2	Weatherford A	17	A	Window		Brown	Intact	Drywall	Negative	1.82	0	0.02
137	3/13/2012 13:17	1.48	mg / cm ^2	Weatherford A	17	B	Wall		Brown	Intact	Drywall	Negative	1.15	0	0.02
138	3/13/2012 13:17	1.48	mg / cm ^2	Weatherford A	17	C	Wall		Brown	Intact	Drywall	Negative	1	0	0.02
139	3/13/2012 13:17	1.11	mg / cm ^2	Weatherford A	17	D	Wall		Brown	Intact	Drywall	Negative	1	0	0.02
140	3/13/2012 13:18	1.48	mg / cm ^2	Weatherford A	17	D	Ceiling		White	Intact	Drywall	Negative	1	0	0.02
141	3/13/2012 13:19	1.48	mg / cm ^2	Weatherford A	18	A	Wall		White	Intact	Drywall	Negative	1.27	0	0.02
142	3/13/2012 13:19	4.47	mg / cm ^2	Weatherford A	18	B	Wall		White	Intact	Drywall	Negative	1.89	0	0.02
143	3/13/2012 13:20	1.49	mg / cm ^2	Weatherford A	18	C	Wall		White	Intact	Drywall	Negative	1	0	0.02
144	3/13/2012 13:20	4.45	mg / cm ^2	Weatherford A	18	D	Wall		White	Intact	Drywall	Negative	1	0	0.02
145	3/13/2012 13:20	2.22	mg / cm ^2	Weatherford A	18	A	Baseboard		Stained	Intact	Wood	Negative	3.95	0.27	0.43
146	3/13/2012 13:21	1.85	mg / cm ^2	Weatherford A	18	A	Wall	Corner Board	Stained	Intact	Wood	Negative	1	0.3	0.53
147	3/13/2012 13:21	1.12	mg / cm ^2	Weatherford A	18	D	Door		White	Intact	Wood	Positive	2.22	3.5	1.7
148	3/13/2012 13:22	1.48	mg / cm ^2	Weatherford A	18	D	Door	Jamb	White	Intact	Metal	Positive	4.42	3.3	1.5
149	3/13/2012 13:25	1.48	mg / cm ^2	Weatherford A	19	A	Wall		White	Intact	Drywall	Negative	1	0	0.02
150	3/13/2012 13:25	4.07	mg / cm ^2	Weatherford A	19	B	Wall		White	Intact	Drywall	Negative	1.32	0	0.02
151	3/13/2012 13:25	1.49	mg / cm ^2	Weatherford A	19	C	Wall		White	Intact	Drywall	Negative	1	0	0.02
152	3/13/2012 13:26	4.08	mg / cm ^2	Weatherford A	19	D	Wall		White	Intact	Drywall	Negative	1	0	0.02
153	3/13/2012 13:26	1.48	mg / cm ^2	Weatherford A	19	D	Ceiling		White	Intact	Drywall	Negative	1	0	0.02
154	3/13/2012 13:27	4.07	mg / cm ^2	Weatherford A	19	C	Ceiling	Crown Mold	Stained	Intact	Wood	Negative	1.07	0.27	0.2
155	3/13/2012 13:27	1.48	mg / cm ^2	Weatherford A	19	B	Baseboard		Stained	Intact	Wood	Negative	1	0	0.02
156	3/13/2012 13:32	6.29	mg / cm ^2	Weatherford A	20	A	Wall		White	Intact	Brick	Positive	2.75	1.2	0.2
157	3/13/2012 13:32	2.6	mg / cm ^2	Weatherford A	20	B	Wall		White	Intact	Brick	Negative	1.19	0.01	0.02
158	3/13/2012 13:33	2.22	mg / cm ^2	Weatherford A	20	C	Wall		White	Intact	Brick	Negative	1	0	0.02
159	3/13/2012 13:33	4.09	mg / cm ^2	Weatherford A	20	D	Wall		White	Intact	Brick	Positive	2.81	1.3	0.2
160	3/13/2012 13:34	1.85	mg / cm ^2	Weatherford A	20	D	Ceiling		White	Intact	Drywall	Negative	1.39	0.01	0.03
161	3/13/2012 13:36	4.09	mg / cm ^2	Weatherford A	21	A	Wall		Beige	Intact	Brick	Negative	1	0.04	0.02
162	3/13/2012 13:36	2.6	mg / cm ^2	Weatherford A	21	B	Wall		Beige	Intact	Brick	Negative	1.32	0.05	0.05
163	3/13/2012 13:37	1.86	mg / cm ^2	Weatherford A	21	C	Wall		Beige	Intact	Brick	Negative	1.61	0.06	0.08
164	3/13/2012 13:38	8.52	mg / cm ^2	Weatherford A	21	D	Wall		Brown	Poor	Brick	Null	4.35	0.9	0.2

Rd. #	Time	Duration	Units	Site	Room	Side	Component	Feature	Color	Condition	Substrate	Results	Depth I	PbC	Error
165	3/13/2012 13:39	8.9	mg / cm ^2	Weatherford A	21	D	Wall		Brown	Poor	Brick	Null	4.24	1	0.2
166	3/13/2012 13:39	21.15	mg / cm ^2	Weatherford A	21	D	Wall		Brown	Poor	Brick	Null	4.23	1	0.1
167	3/13/2012 13:40	12.96	mg / cm ^2	Weatherford A	21	D	Wall		Brown	Poor	Brick	Null	4.19	1	0.1
168	3/13/2012 13:40	2.23	mg / cm ^2	Weatherford A	21	D	Wall		Brown	Poor	Brick	Positive	2.49	1.6	0.6
169	3/13/2012 13:43	2.59	mg / cm ^2	Weatherford A	IFR	B	Wall		Red	Intact	Brick	Negative	1.18	0.08	0.06
170	3/13/2012 13:44	3.34	mg / cm ^2	Weatherford A	IFR	C	Wall		Red	Intact	Brick	Negative	1	0.5	0.3
171	3/13/2012 13:48	2.59	mg / cm ^2	Weatherford A	Exterior	A	Door	Casing	White	Fair	Concrete	Negative	2.36	0.01	0.04
172	3/13/2012 13:49	2.96	mg / cm ^2	Weatherford A	Exterior	A	Wall	Trim	White	Poor	Concrete	Negative	1	0	0.02
173	3/13/2012 13:49	3.72	mg / cm ^2	Weatherford A	Exterior	A	Window	Sill	White	Poor	Concrete	Negative	2.59	0.6	0.4
174	3/13/2012 13:51	4.07	mg / cm ^2	Weatherford A	Exterior	A	Wall	Sign	White	Poor	Concrete	Negative	3.59	0.6	0.3
175	3/13/2012 13:52	2.58	mg / cm ^2	Weatherford A	Exterior	B	Wall	Downspout	White	Poor	Metal	Negative	9.55	0.3	0.49
176	3/13/2012 13:52	2.59	mg / cm ^2	Weatherford A	Exterior	B	Door	Jamb	White	Poor	Metal	Negative	10	0.3	0.46
177	3/13/2012 13:54	0.74	mg / cm ^2	Weatherford A	Exterior	B	Door	Gaurd	White	Poor	Metal	Null	1.57	0.02	0.1
178	3/13/2012 13:54	0.75	mg / cm ^2	Weatherford A	Exterior	B	Door	Gaurd	White	Poor	Metal	Null	4.78	0.07	0.31
179	3/13/2012 13:55	1.84	mg / cm ^2	Weatherford A	Exterior	B	Door	Gaurd	White	Poor	Metal	Negative	1.42	0.02	0.04
180	3/13/2012 13:56	1.84	mg / cm ^2	Weatherford A	Exterior	C	Door	Casing	Red	Fair	Metal	Negative	1	0	0.02
181	3/13/2012 13:57	2.6	mg / cm ^2	Weatherford A	Exterior	D	Window	Board	Beige	Poor	Wood	Positive	5.3	2.5	1
182	3/13/2012 13:58	4.09	mg / cm ^2	Weatherford A	Exterior	D	Window	Bars	Beige	Poor	Wood	Null	3.89	1	0.3
183	3/13/2012 13:58	2.59	mg / cm ^2	Weatherford A	Exterior	D	Window	Bars	Beige	Poor	Wood	Positive	3.02	1.7	0.6
184	3/13/2012 14:01	1.86	mg / cm ^2	Weatherford A	Exterior	D	Wall	Support	Beige	Poor	Metal	Negative	1.17	0.04	0.05
185	3/13/2012 14:01	4.07	mg / cm ^2	Weatherford A	Exterior	D	Wall	Support	Beige	Poor	Wood	Negative	1	0.24	0.21
186	3/13/2012 14:02	1.86	mg / cm ^2	Weatherford A	Exterior	D	Window		Beige	Poor	Metal	Positive	4.61	3.3	1.4
187	3/13/2012 14:05	20.77	mg / cm ^2	Weatherford A	calibrate						Metal	Positive	1.08	1	0.1
188	3/13/2012 14:06	20.77	mg / cm ^2	Weatherford A	calibrate						Metal	Positive	1.07	1	0.1
189	3/13/2012 14:07	20.77	mg / cm ^2	Weatherford A	calibrate						Metal	Positive	1.05	1	0.1
190	3/13/2012 15:11	1.86	mg / cm ^2	Weatherford A	calibrate							Null	1.07	1	0.3
191	3/13/2012 15:12	20.83	mg / cm ^2	Weatherford A	calibrate							Positive	1.06	1	0.1
192	3/13/2012 15:13	20.84	mg / cm ^2	Weatherford A	calibrate							Positive	1.04	1	0.1
193	3/13/2012 15:13	20.44	mg / cm ^2	Weatherford A	calibrate							Positive	1.1	1	0.1
194	3/13/2012 15:18	2.6	mg / cm ^2	Weatherford A	1		Ceiling	Beam	Silver	Intact	Metal	Positive	1.13	1.3	0.3
195	3/13/2012 15:18	2.6	mg / cm ^2	Weatherford A	1		Ceiling	C. member	Silver	Intact	Metal	Positive	1.24	1.6	0.3
196	3/13/2012 15:19	1.49	mg / cm ^2	Weatherford A	1		Ceiling	Brace	Silver	Intact	Metal	Positive	1.15	1.7	0.5
197	3/13/2012 15:22	0.37	mg / cm ^2	Weatherford A	1		Ceiling	truse	Silver	Intact	Metal	Null	1	0	0.05
198	3/13/2012 15:22	4.07	mg / cm ^2	Weatherford A	1		Ceiling	truse	Silver	Intact	Metal	Negative	1	0.01	0.02
199	3/13/2012 15:30	20.76	mg / cm ^2	Weatherford A	calibrate							Positive	1.09	1	0.1
200	3/13/2012 15:31	20.46	mg / cm ^2	Weatherford A	calibrate							Positive	1.05	1	0.1
201	3/13/2012 15:31	20.42	mg / cm ^2	Weatherford A	calibrate							Positive	1.05	1	0.1

APPENDIX B

223 West Rainey Avenue, Weatherford, OK 73096

Rd. 5-9, Room 01, Walls

Rd. 5-9, Room 01, Walls

Rd.16, Room 01, Hand Rail

Rd. 17, Room 01 Steps

Rd. 19-20, Room 01 Doors and Frame, 2 Doors 83" x 37"

Rd. 21-22, Room 01 Conduit

Rd. 23-24, Room 01 Overhead Door, 9' x 10'

Rd. 26, Room 01 Window 38' x 112"

Rd. 27, Room 01 Door Frame, "84 x 36"

Rd. 31, Room 02 Wall

Rd. 34-36, Room 03 Walls

Rd. 39, Room 03 Wall

Rd. 40-41, Room 03 Door and Frame 84" x 36"

Rd. 53-54, Room 04, Door and Frame "84 x 48"

Rd. 55-56 , Room 04, Door and Frame, 84" x 36"

Rd. 64, Room 05, Wall

Rd. 71, Room 05, Bars on Window

Rd. 104, Room 11, Door Frame 84" x 28"

Rd. 116-117, Room 13, Door and Frame
84" x 36"

Rd. 125, 127, Room 15, Walls

Rd. 147-148, Room 18, Door and Frame,
84"x 36"

Rd. 156, 159, Room 20, Walls

Rd. 168, Room 21, Walls

Rd. 181,183, Exterior, IFR Vent, Wood and Bars

Rd. 186, Exterior Window, 38" x 112

Rd. 194-196, Room 01, Beams, Joist, Braces

APPENDIX C

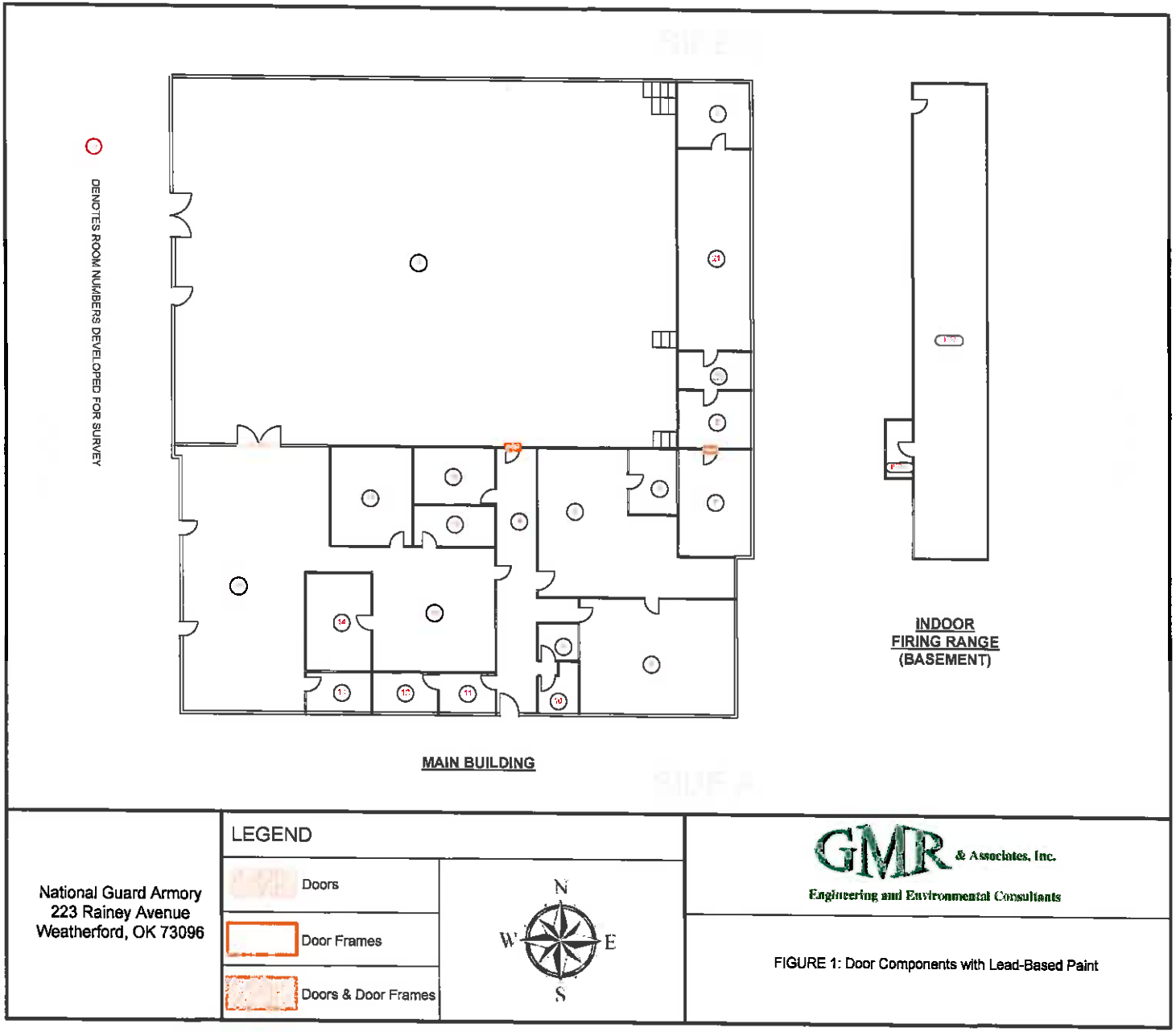
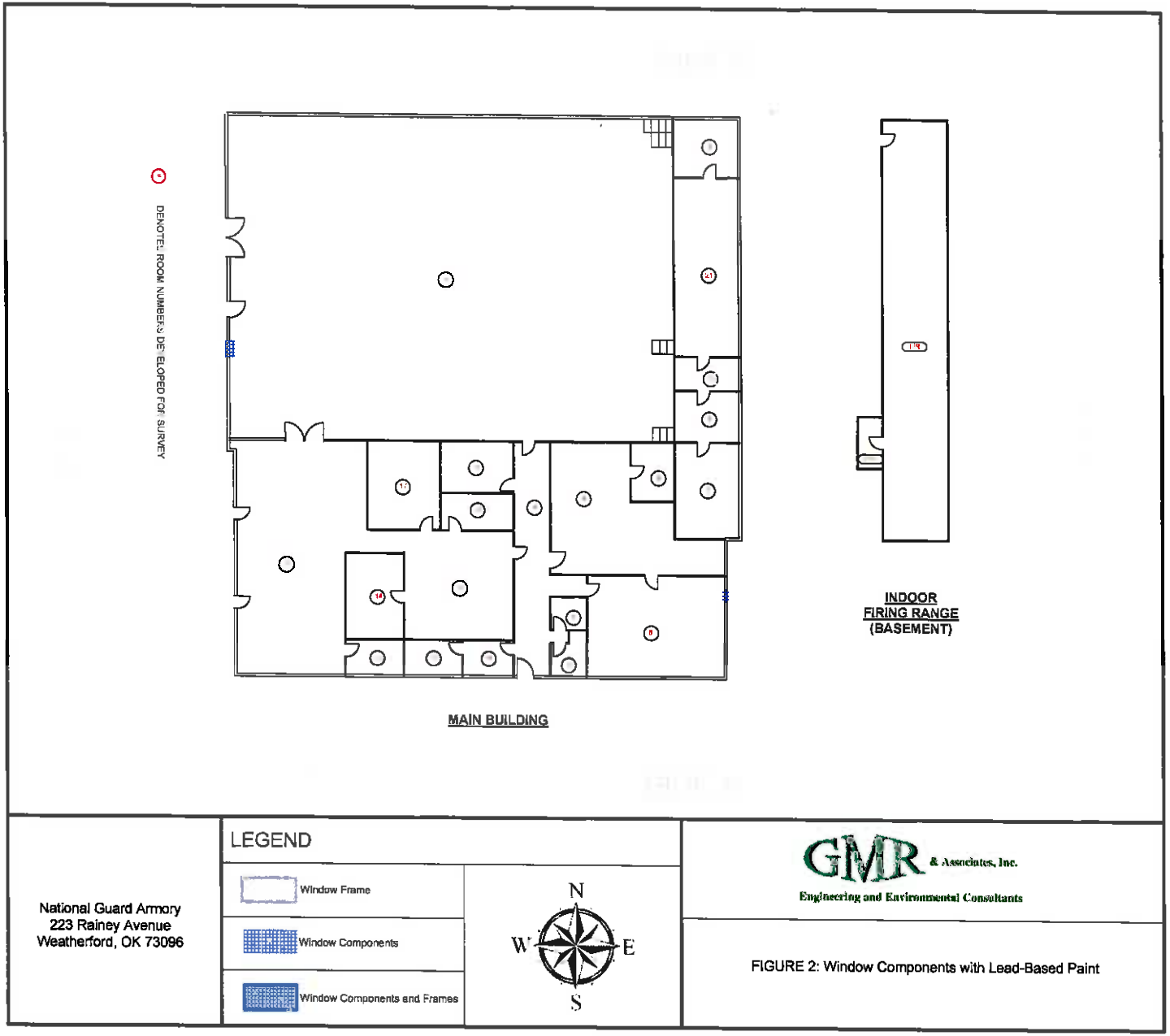
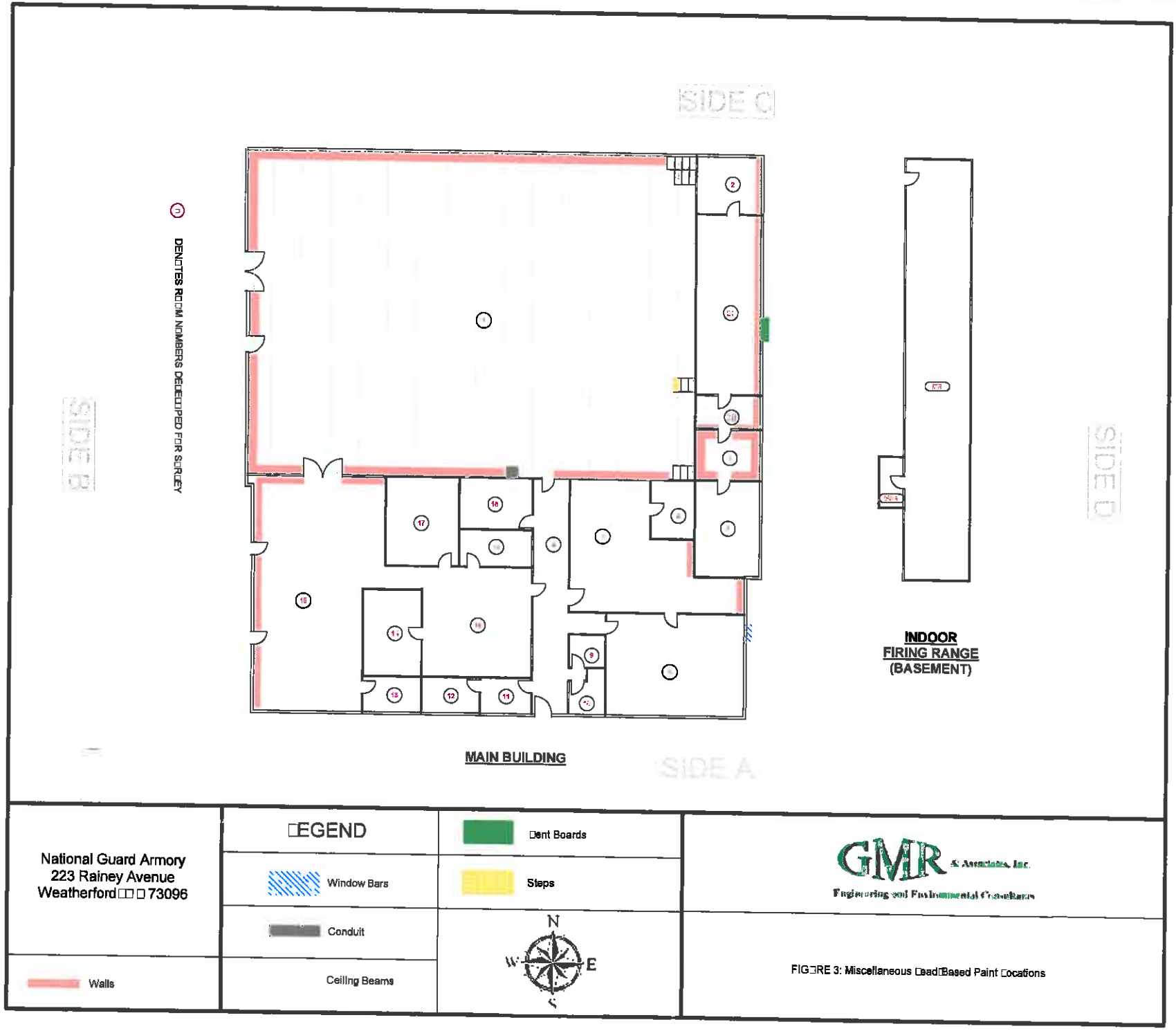


FIGURE 1: Door Components with Lead-Based Paint


DENOTES ROOM NUMBERS AS DEVELOPED FOR SURVEY
MAIN BUILDING
INDOOR
FIRING RANGE
(BASEMENT)
LEGEND
Window Frame
Window Components
Window Components and Frames
N
W
E
S
National Guard Armory
223 Rainey Avenue
Weatherford, OK 73096
GMR & Associates, Inc.
Engineering and Environmental Consultants
FIGURE 2: Window Components with Lead-Based Paint


SIDE C
SIDE B
SIDE D
SIDE A
DENOTES ROOM NUMBERS DESIGNATED FOR SURVEY
MAIN BUILDING
INDOOR
FIRING RANGE
(BASEMENT)
LEGEND
Dent Boards
Window Bars
Steps
Conduit
Walls
Ceiling Beams
N
W
E
S
National Guard Armory
223 Rainey Avenue
Weatherford, OK 73096
GMR & Associates, Inc.
Engineering and Environmental Consultants
FIGURE 3: Miscellaneous Lead-Based Paint Locations

APPENDIX D

Department of Environmental Quality

JEFFERY BURGER

INSPECTOR/RISK ASSESSOR

Certification #: OKRASR13639

Issued on: 6/9/2011 Expires on: 3/31/2012

Division Director
Air Quality Division

Environmental Programs Manager
Air Quality Division

Department of Environmental Quality

This is to Certify That

BASIN ENVIRONMENTAL

has met the specifications of the Oklahoma Lead-Based Paint Management Act
and is certified as a Lead-Based Paint

FIRM

Certification #: OKFIRM13434

This certificate is valid from the date of issuance and expires as prescribed by law.

Issued on: **4/1/2011** Expires on: **3/31/2012**

Division Director
Air Quality Division

Environmental Programs Manager
Air Quality Division

APPENDIX E

Performance Characteristic Sheet

EFFECTIVE DATE: **September 24, 2004** **EDITION NO.: 1**

MANUFACTURER AND MODEL:

Make: *Niton LLC*
Tested Model: *XLp 300*
Source: ^{109}Cd
Note: This PCS is also applicable to the equivalent model variations indicated below, for the Lead-in-Paint K+L variable reading time mode, in the XLi and XLp series:

XLi 300A, XLi 301A, XLi 302A and XLi 303A.
XLp 300A, XLp 301A, XLp 302A and XLp 303A.
XLi 700A, XLi 701A, XLi 702A and XLi 703A.
XLp 700A, XLp 701A, XLp 702A, and XLp 703A.

Note: The XLi and XLp versions refer to the shape of the handle part of the instrument. The differences in the model numbers reflect other modes available, in addition to Lead-in-Paint modes. The manufacturer states that specifications for these instruments are identical for the source, detector, and detector electronics relative to the Lead-in-Paint mode.

FIELD OPERATION GUIDANCE

OPERATING PARAMETERS:

Lead-in-Paint K+L variable reading time mode.

XRF CALIBRATION CHECK LIMITS:

0.8 to 1.2 mg/cm^2 (inclusive)

The calibration of the XRF instrument should be checked using the paint film nearest 1.0 mg/cm^2 in the NIST Standard Reference Material (SRM) used (e.g., for NIST SRM 2579, use the 1.02 mg/cm^2 film).

If readings are outside the acceptable calibration check range, follow the manufacturer's instructions to bring the instruments into control before XRF testing proceeds.

SUBSTRATE CORRECTION:

For XRF results using Lead-in-Paint K+L variable reading time mode, substrate correction is <u>not</u> needed for:

Brick, Concrete, Drywall, Metal, Plaster, and Wood

INCONCLUSIVE RANGE OR THRESHOLD:

K+L MODE READING DESCRIPTION	SUBSTRATE	THRESHOLD (mg/cm^2)
Results not corrected for substrate bias on any substrate	Brick	1.0
	Concrete	1.0
	Drywall	1.0
	Metal	1.0
	Plaster	1.0
	Wood	1.0

BACKGROUND INFORMATION

EVALUATION DATA SOURCE AND DATE:

This sheet is supplemental information to be used in conjunction with Chapter 7 of the HUD *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing* ("HUD Guidelines"). Performance parameters shown on this sheet are calculated from the EPA/HUD evaluation using archived building components. Testing was conducted in August 2004 on 133 testing combinations. The instruments that were used to perform the testing had new sources; one instrument's was installed in November 2003 with 40 mCi initial strength, and the other's was installed June 2004 with 40 mCi initial strength.

OPERATING PARAMETERS:

Performance parameters shown in this sheet are applicable only when properly operating the instrument using the manufacturer's instructions and procedures described in Chapter 7 of the HUD Guidelines.

SUBSTRATE CORRECTION VALUE COMPUTATION:

Substrate correction is not needed for brick, concrete, drywall, metal, plaster or wood when using Lead-in-Paint K+L variable reading time mode, the normal operating mode for these instruments. If substrate correction is desired, refer to Chapter 7 of the HUD Guidelines for guidance on correcting XRF results for substrate bias.

EVALUATING THE QUALITY OF XRF TESTING:

Randomly select ten testing combinations for retesting from each house or from two randomly selected units in multifamily housing. Use the K+L variable time mode readings.

Conduct XRF retesting at the ten testing combinations selected for retesting.

Determine if the XRF testing in the units or house passed or failed the test by applying the steps below.

Compute the Retest Tolerance Limit by the following steps:

Determine XRF results for the original and retest XRF readings. Do not correct the original or retest results for substrate bias. In single-family housing a result is defined as the average of three readings. In multifamily housing, a result is a single reading. Therefore, there will be ten original and ten retest XRF results for each house or for the two selected units.

Calculate the average of the original XRF result and retest XRF result for each testing combination.

Square the average for each testing combination.

Add the ten squared averages together. Call this quantity C.

Multiply the number C by 0.0072. Call this quantity D.

Add the number 0.032 to D. Call this quantity E.

Take the square root of E. Call this quantity F.

Multiply F by 1.645. The result is the Retest Tolerance Limit.

Compute the average of all ten original XRF results.

Compute the average of all ten re-test XRF results.

Find the absolute difference of the two averages.

If the difference is less than the Retest Tolerance Limit, the inspection has passed the retest. If the difference of the overall averages equals or exceeds the Retest Tolerance Limit, this procedure should be repeated with ten new testing combinations. If the difference of the overall averages is equal to or greater than the Retest Tolerance Limit a second time, then the inspection should be considered deficient.

Use of this procedure is estimated to produce a spurious result approximately 1% of the time. That is, results of this procedure will call for further examination when no examination is warranted in approximately 1 out of 100 dwelling units tested.

TESTING TIMES:

For the Lead-in-Paint K+L variable reading time mode, the instrument continues to read until it is moved away from the testing surface, terminated by the user, or the instrument software indicates the reading is complete. The following table provides testing time information for this testing mode. The times have been adjusted for source decay, normalized to the initial source strengths as noted above. Source strength and type of substrate will affect actual testing times. At the time of testing, the instruments had source strengths of 26.6 and 36.6 mCi.

Testing Times Using K+L Reading Mode (Seconds)						
	All Data			Median for laboratory-measured lead levels (mg/cm^2)		
Substrate	25^{th} Percentile	Median	75^{th} Percentile	Pb < 0.25	0.25 ≤ Pb<1.0	1.0 ≤ Pb
Wood Drywall	4	11	19	11	15	11
Metal	4	12	18	9	12	14
Brick Concrete Plaster	8	16	22	15	18	16

CLASSIFICATION RESULTS:

XRF results are classified as positive if they are greater than or equal to the threshold, and negative if they are less than the threshold.

DOCUMENTATION:

A document titled *Methodology for XRF Performance Characteristic Sheets* provides an explanation of the statistical methodology used to construct the data in the sheets, and provides empirical results from using the recommended inconclusive ranges or thresholds for specific XRF instruments. For a copy of this document call the National Lead Information Center Clearinghouse at 1-800-424-LEAD.

This XRF Performance Characteristic Sheet was developed by the Midwest Research Institute (MRI) and QuanTech, Inc., under a contract between MRI and the XRF manufacturer. HUD has determined that the information provided here is acceptable when used as guidance in conjunction with Chapter 7, Lead-Based Paint Inspection, of HUD's *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing.*

APPENDIX F

ThermoFisher SCIENTIFIC
The world leader in serving science

Certificate of Calibration

Paint QC (Service)
Document #: FRM018
Revision: A
Revision Date: Sept. 19, 2008

Serial Number: 10713 Model: XLp703A Software: 5.2D Date of Q.C.: 4/14/2011

Resolution: 379.84 Escale: 4.07 Source: Cd-109 Inspector: JC

K+L Mode 20 Second readings each

Std	L	Lerr	K	Kerr	DI	L Status	K Status
1.0 Surface Wood-1	1.10	0.10	0.90	0.30	1.0	OK	OK
1.0 Surface Wood-2	1.00	0.10	0.90	0.30	1.1	OK	OK
1.0 Buried Wood-1	1.10	0.10	0.80	0.30	2.4	OK	OK
1.0 Buried Wood-2	1.10	0.10	0.80	0.30	2.3	OK	OK
Blank Wood-1	0.00	0.02	0.13	0.22	2.8	OK	OK
Blank Wood-2	0.01	0.02	0.04	0.22	1.0	OK	OK
3.5 Surface Wood-1	3.70	0.20	3.30	0.40	1.3	OK	OK
3.5 Surface Wood-1	3.60	0.20	3.20	0.40	1.3	OK	OK
0.3 Surface Concrete-1	0.30	0.03	0.10	0.37	1.0	OK	OK
0.3 Surface Concrete-2	0.29	0.03	0.21	0.38	1.0	OK	OK
Steel-1	0.00	0.02	0.07	0.34	1.0	OK	OK
Steel-2	0.00	0.02	0.10	0.35	1.0	OK	OK
Pure Pb-1	10.10	1.30	84.80	1.90	1.7	OK	OK
Pure Pb-2	10.10	1.30	86.30	1.90	1.6	OK	OK
1.0 Surface Drywall-1	1.00	0.10	1.10	0.30	1.1	OK	OK
1.0 Surface Drywall-2	1.00	0.10	0.90	0.30	1.0	OK	OK

STD Mode Readings

Std	Time	Result	
Drywall-1	1.83	0.01	OK
Drywall-2	1.81	0.03	OK
French Plaster-1	1.22	0.01	OK
French Plaster-2	1.81	0.01	OK

This certificate is issued in accordance with Thermo Fisher Scientific factory specifications.
The measurements were found to be within specification limits at the time of service and calibration.

Standards are traceable to National Institute of Standards & Technology (NIST) standards.
**** - Not Certified**

Signed:

Thermo Fisher Scientific
Niton Analyzers

800 Middlesex Turnpike
Building 8
Billerica, MA 01821

www.thermo.com/niton
1-800-875-1578

ThermoFisher SCIENTIFIC

Certificate of Calibration

Soil QC(Service)
Document#: FRM013
Revision B
Revision Date: Mar. 11, 2009

Unit Serial Number: 10713 Model: XLp 703AW Software: 5.20 Date of Q.C.: 4/14/2011

Resolution: 388.02 Escale: 4.07 Source: Cd-109 Inspector: JC

Run 1 reading per sample for 90 seconds
Elements that are in WHITE BOLD must be recorded
NA = Not Available

Elements not in blue need not be detected but record if they are

NIST HIGH 2710	Certified	Low	High	Measured	Err	
Mo	19	10	40	13.909	3.237	OK
Zr	NR			166.265	13.2	
Sr	330	280	380	313.754	12.839	OK
Rb	120	80	160	118.77	8.98	OK
Pb	5532	5400	5700	5567.199	101.251	OK
Se	NA	-60	60	5.046	12.273	OK
As	628	510	750	633.68	76.68	OK
Hg	32.6	0	50	25.4	22.7	OK
Zn	6952	6700	7250	7024.19	128.47	OK
Cu	2950	2700	3200	2648.41	100.63	OK
Ni	14.3	-50	150	24.23	65.19	OK
Co	10	-270	270	-99.05	176.316	OK
Fe	33800	31500	35500	33856.727	533.717	OK
Mn	10100	9500	11000	10206.4	418.0	OK
Cr	39	-100	120	58.51	309.327	OK

SiO2 (Blank)	Certified	Low	High	Measured	Err	
Mo	0	-10	10	0.134	1.328	OK
Zr	0	-10	10	1.346	2.125	OK
Sr	<210	-10	210	0.184	1.365	OK
Rb	0	-200	210	-0.897	1.247	OK
Pb	0	-20	20	-6.976	5.559	OK
Se	0	-10	10	-6.635	3.681	OK
As	0	-10	10	-0.459	4.04	OK
Hg	0	-10	10	-2.999	6.81	OK
Zn	0	-20	20	-2.266	13.51	OK
Cu	0	-30	30	1.616	15.285	OK
Ni	0	-50	50	6.444	22.567	OK
Co	0	-50	50	-8.063	16.813	OK
Fe	0	-100	300	0.944	28.597	OK
Mn	0	-70	70	23.183	33.885	OK
Cr	0	-120	120	-37.354	64.563	OK

NIST LOW	Certified	Low	High	Measured	Err	
Mo	2	-10	10	2.468	2.301	OK
Zr	160	115	210	183.048	10.585	OK
Sr	231	180	300	206.751	6.748	OK
Rb	96,	60	115	74.47	5.62	OK
Pb	18.9	0	35	5.703	9.122	OK
Se	1.57	-30	30	-4.06	6.11	OK
As	17.7	0	35	16.43	7.39	OK
Hg	1.4	-10	10	8.6	9.5	OK
Zn	106	50	160	77.12	21.28	OK
Cu	34.6	0	60	42.85	23.35	OK
Ni	66	25	150	98.41	45.22	OK
Co	13.4	-250	250	130.63	135.709	OK
Fe	35000	25000	35000	26601.057	399.967	OK
Mn	538	0	700	614.1	185.0	OK
Cr	130	50	200	191.195	173.878	OK

RCRA	Certified*	Low	High	Measured	Err	
Mo	NA					OK
Zr	NA					OK
Sr	NA					OK
Rb	NA					OK
Pb	500	350	600	469.947	34.443	OK
Se	500	400	600	515.261	22.438	OK
As	500	300	600	441.657	30.442	OK
Hg	NA					OK
Zn	NA					OK
Cu	NA					OK
Ni	NA					OK
Co	NA					OK
Fe	NA					OK
Mn	NA					OK
Cr	500	275	600	461.544	241.123	OK

This certificate is issued in accordance with Thermo Fisher Scientific factory specifications.
The measurements were found to be within specification limits at the time of service and calibration.

Standards are traceable to National Institute of Standards & Technology (NIST) standards
** - Not Certified

Signed:

Thermo Fisher Scientific
Niton Analyzers

800 Middlesex Turnpike
Building 8
Billerica, MA 01821

www.thermo.com/niton
+1-800-875-1578

ThermoFisher SCIENTIFIC
The world leader in serving science

Certificate of Calibration

Thin Film QC (Service)
Revision: A
Revision Date: Sept. 24, 2008

Unit #: 10713 **Model:** XLp 703A **Date:** 4/15/2011 **Software:** 5.2D-Dual

Res: 383.7 **Escale:** 4.07 **Source:** Cd-109 **Inspector:** JC

Thin Film QC Sheet (1 reading at 30 seconds each sample)

Element:	Cert:	Read:	Error	OK?
Pb	51.7	54.47	2.74	OK
As	24.6	24.7	0.92	OK
Ni	40.4	42.72	2.21	OK
Cr	42.6	44.49	3.69	OK

37mm QC Readings (3 readings at 30 seconds each)

Element:	Cert:	Read:	Error	OK?
Pb	42	39.79	9.05	OK

Dust Wipe QC Readings (Pb only) (4 readings at 30 seconds each)

Wipe Type:	Cert:	Read:	Error	OK?
Blank:	N/A	0.91	1.61	OK
Dust Low:	34-51	43.12	10.1	OK
DustHigh:	356-534	480.8	38.5	OK

This certificate is issued in accordance with Thermo Fisher Scientific factory specifications.
The measurements were found to be within specification limits at the time of manufacture and calibration.

**** - Not Certified**

Signed:

Thermo Fisher Scientific
Niton Analyzers

800 Middlesex Turnpike
Building 8
Billerica, MA 01821

www.thermo.com/niton
1-800-875-1578

SCOPES OF WORK

STATEMENT OF WORK
FOR
Remediation of Asbestos, Lead-Based Paint and Lead Contamination at Weatherford Armory

The Oklahoma Department of Environmental Quality (DEQ) is requesting bids from qualified bidders for remediation services at a former National Guard armory located in Weatherford, Oklahoma. This statement of work (SOW) describes the abatement of asbestos containing materials, cleanup of lead contamination associated with the indoor firing range (IFR), lead contaminated dust on the floors of the building, and lead-based paint (LBP) located on surfaces throughout the building. This work must be performed to provide for safe re-use of the facility with unrestricted use such as storage areas, classrooms, or office space. A mandatory site visit and walk through will be held to give a better understanding of the site. A floor plan map of the Weatherford Armory is attached for review (**Attachment 1**).

The building is located at **223 West Rainey Avenue, Weatherford, Oklahoma 73096**. The building **does not** have available water and electricity to use during remediation.

SPECIAL PROVISIONS:

1. Work Schedule: The Contractor shall schedule all work to be complete within 120 days after date of the written "Notice to Proceed".
    a. A pre-construction meeting shall be held at the site after the Notice to Proceed date to review Scope of Work and answer any questions the contractor may have.
    b. All on-site work shall be completed by the Contractor five (5) days prior to the scheduled contract completion date, with the remaining five (5) days utilized for final inspection and correction of all deficiencies.
2. Conditions of Work: The following conditions of work will apply in accomplishment of this contract:
    a. All work shall be performed in accordance with all applicable State and Federal regulations.
    b. The contractor shall perform this work in such a manner as to cause a minimum of interruption to normal work being performed in the contract area.
    c. Coordination of work areas shall be scheduled with DEQ.
    d. Disposal of Removed Materials: All materials removed by the Contractor under this contract shall be disposed of in accordance with State and Federal regulations. DEQ will sign as generator, if necessary.

CONTRACTOR SHALL:

- Attend mandatory pre-bid meeting and site walk through;
- Possess a current lead-based paint firm license and have a certified lead-based paint supervisor in order to perform lead-based paint abatement;
- Possess a current Oklahoma Department of Labor (ODOL) Asbestos Abatement Contractor License in order to perform asbestos abatement;
- Follow all appropriate OSHA requirements;
- Follow OSHA Lead in Construction Interim Final Standard (29 CFR 1926.62) for lead-based paint abatement, indoor firing range remediation, and lead dust remediation;

- Read Guidelines for Rehabilitation and Conversion of Indoor Firing Ranges, November 3, 2006, Departments of the Army and Air Force, National Guard Bureau (**Attachment 2**), and refer to this document as a reference and guideline for remediating IFR lead contamination.

Submit With Bid:

- Copy of lead-based paint firm license;
- Copy of lead-based paint supervisor license;
- Copy of ODOL Asbestos Abatement Contractor License;
- Three references with name, type of project, phone number, and location of similar work in the last three years.

Submit After Contract Award:

- A Work Plan with planned activities and schedule to DEQ for approval.

ASBESTOS ABATEMENT INSTRUCTIONS

- Window caulking contains friable asbestos. Refer to the Weatherford Armory Asbestos Inspection Report for locations and the Weatherford Armory Asbestos Project Design for details on abatement (**Attachment 4**).

LEAD-BASED PAINT ABATEMENT INSTRUCTIONS

- **Non-Friction and Non-Impact Surfaces**
  - All items listed below shall be wet scraped, painted with a neutral colored primer, and encapsulated with DEQ approved elastomeric encapsulant. A list of DEQ approved elastomeric encapsulants is attached (**Attachment 5**). Encapsulant shall be a minimum of 20 mils thick. The Lead-Based Paint and Settled Dust Sampling Report with floor plan maps detailing the locations of the lead-based paint is attached for review (**Attachment 3**);
    - All Down Spouts (Roof Drains);
    - All Window Lintels;
    - All Interior and Exterior Window Sills;
    - All Overhead Door Frames, Guards, and Casings;
    - The Indoor Firing Range vent wood, all painted metal, lintel and sill;
    - All walls in Drill Floor (Room 1);
    - All walls in Room 2;
    - All walls in Room 3;
    - All walls in Room 5;
    - All walls in Room 20;

- All walls in Room 21;
- All brick walls in Room 15;

- The drill floor hand rails shall have all paint removed and then be painted with a neutral colored primer;

- All interior and exterior window bars and wood window coverings shall be removed and properly disposed;

- Deteriorated paint removed from building surface will be properly disposed.

- **Friction and Impact Surfaces**

A. Floors

- The yellow bottom and top steps on all staircases in the Drill Floor (Room 1) contain lead-based paint. All paint shall be visibly removed from the concrete steps. Once visibly removed, the steps shall be HEPA vacuumed, wet washed, and sealed with Epoxy-Coat Garage Floor Coating Kit or equivalent. Specifications are attached (**Attachment 5**);

B. Windows (See Attachment 7)

- A Window-Scope of Work with map, window measurements, specifications for window replacement, and specific details on abatement requirements for each window is attached (**Attachment 7**);
- Windows installed must meet all attached specifications;
- Window installation and oversight of window removal shall be performed by a third party professional window installation company that is certified and recommended by the window manufacturer of the windows being installed;
    - Window installer shall have no less than five (5) years installation experience;
- Window installer shall have experience with removal of steel casement windows;
- All interior and exterior window sills shall be HEPA vacuumed and wet washed after windows have been removed and replaced;
    - Once window sills have been cleaned, contractor shall encapsulate with DEQ approved lead-based paint encapsulant.

C. Doors and Frames (See Attachment 6)

- A Door-Scope of Work with map, door measurements, and specific details on abatement requirements for each door is attached (**Attachment 6**);
- Specifications for replacement items are attached (**Attachment 6**);
- Doors will be replaced with UL listed 90 minute standard metal doors;
- Doors will be replaced with Steelcraft L18 and L16 – Series Honeycomb Doors (Specifications Attached) or equivalent;
- Contractor must submit product data for approval if different from doors or door frames in bid package;

- Replacement doors and frames must meet all compliance and fire rating requirements in the attached specifications;

a. Exterior Doors

- Exterior doors will be replaced with galvannealed, 16 gage, honeycomb core insulated doors;
- Continuous Geared Door Hinges: As manufactured by Pemko or approved equal – Satin Nickel – Half Surface Safety Hinges: Standard (Specifications Attached);
- Threshold: As manufactured by National Guard Products or approved equal – 426E (Specifications Attached);
- Weather Strip: As manufactured by National Guard Products or approved equal – 160VA (Specifications Attached);
- Lever: As manufactured by Schlage or approved equal – D Series "Rhodes", 626 finish, function ND60PD (Specification Attached);
- Keying: All doors to be keyed alike;
- Provide sealant per 07920 specification attached.

b. Interior Doors (All Except Indoor Firing Range Door)

- Interior doors will be replaced with non-galvannealed, 18 gage, honeycomb core insulated doors;
- Continuous Geared Door Hinges: As manufactured by Pemko or approved equal – Satin Nickel – Half Surface Safety Hinges: Standard (Specifications Attached);
- Knob: As manufactured by Schlage or approved equal – A Series "Orbit", 626 finish, function A10S (Specification Attached);
- Provide sealant (caulking) per 07920 specification attached.

D. Clearance Inspection

- Once lead-based paint has been removed from surfaces, DEQ will perform a visual inspection to confirm lead-based paint has been removed appropriately before surfaces are painted or sealed.
- Once lead-based paint abatement is complete and after room floors are cleaned, contact Marshall Environmental Management to perform post abatement clearance sampling in these areas. See Section C (Confirmation and Clearance Sampling) for additional information.
- If samples do not meet EPA and HUD standards for lead dust (40 µg/SF for floors), areas shall be re-cleaned and re-sampled.

E. Sampling and Disposal

- DEQ assumes that all lead-based paint chips removed from surfaces are considered hazardous waste. Lead-based paint removed from surfaces shall be disposed as hazardous waste.
    - If Contractor uses a paint stripper that exhibits a characteristic of hazardous waste, or contains hazardous waste constituents, it is the Contractor's responsibility to characterize this waste under 40

CFR 262.11 and if they are determined to be hazardous waste, disposing of them as such. The Final Report shall contain all relevant information regarding the waste determination.

- A completed and signed waste manifest, Land Disposal Notification Form, and Certificate of Disposal demonstrating that the paint chips were properly disposed at a hazardous waste facility must be included in the Final Report.

LEAD DUST REMEDIATION INSTRUCTIONS

Sequence of Events

The cleaning of the building floors shall not be completed until all asbestos, lead-based paint, and indoor firing range abatement is complete.

1. Indoor Firing Range (IFR)

The IFR in these buildings is a long narrow basement room with attached small side room where the Oklahoma Military Department would target practice with weapons. Sometimes the IFR will have a steel bullet deflection plate and sand trap. The IFR is to be cleaned by removal of all lead contaminated materials, including debris (if present), sand (if present), steel plate (if present), lead-based paint (if present), and lead contaminated dust and other lead containing particulates on the floor, walls, and ceiling of the IFR.

- **Pre-remediation Preparation**
  - To ensure cross contamination does not occur, use engineering controls such as:
    - Sealing openings with 6 mil poly sheeting to contain dust inside IFR;
    - Covering floor of area outside IFR with 6 mil poly sheeting to make sure not to track lead dust into clean areas;
    - Securing IFR at the end of the work day. At no time shall the IFR be accessible for unauthorized entry without the contractor present;
  - When inside IFR wear appropriate personal protective equipment (See **Attachment 3**).

- **Water Removal**
    - All wash water from the IFR shall be filtered through a 1 micron filter and then sampled for total lead and total phosphorus. Total lead shall be run by ICP and total phosphorus shall be run by EPA Method 365.3. Wash water shall be disposed appropriately. Sample results can be submitted to DEQ to determine if wash water can be disposed at the local Waste Water Treatment Facility.

- **Pre-remediation Removal**
    - Decontaminate door to IFR side room, remove from frame, wrap in poly sheeting, and properly dispose;
    - Remove all paint from side room door frame to bare metal and paint frame with neutral colored primer;
    - Sand Trap:
        - Decontaminate metal backstop, wrap in poly sheeting and properly dispose;
        - Decontaminate sand trap framework, wrap in poly sheeting and properly dispose;
        - Place sand in sealed drums and dispose of sand as hazardous waste.
    - Decontaminate all items to be removed from the IFR, wrap in poly sheeting, and properly dispose.
        - Items such as acoustical tiles, carpet, or other porous materials shall be HEPA vacuumed, washed, and sampled for TCLP. Acoustical tile, if present, will have 3 – five part composite samples taken. All other materials shall have 1 – five part composite sample taken of each material. If samples pass TCLP then properly dispose. If any samples fail TCLP, dispose of that item as hazardous waste.

- **Remediation**
    - HEPA vacuum and wet wash walls, floor, ceiling, vent fan, and other structures that are contaminated;
    - Dispose lead contaminated dust, wash water, and appropriate cleaning materials as hazardous waste or as appropriate (See section 3. Disposal of Materials for detailed information).

- **Post-remediation**

  - All post-remediation sampling shall be performed by Marshall Environmental Management (MEM). The Contractor shall provide MEM a minimum of five (5) calendar days prior notice to perform sampling. See *Section 4. Confirmation and Clearance Sampling* for contact information;

  - Post remediation sampling is required to confirm the IFR has been remediated to 200 micrograms per square foot (ug/SF);
    - Areas above 200 ug/SF shall be re-cleaned and re-tested until results are at or below 200 ug/SF;

  - If surfaces of the IFR cannot be cleaned and DEQ determines that these surfaces contain imbedded lead fragments, construction grout shall be used over these surfaces.
    - Surfaces shall be thoroughly cleaned;
    - A two part epoxy mixture designed for concrete shall be applied to surfaces according to manufacturer's specifications at 1/8 inch thick. Use Epoxy-Coat Garage Floor Coating Kit or equivalent. Specifications are attached (**Attachment 5**);

  - Once the IFR has been remediated to 200 ug/SF, seal the floor, ceiling, and walls with appropriate sealant;
    - Floor, ceiling, and walls will be sealed with KM-669 Acrylic Sealer or equivalent. Specifications attached (**Attachment 5**);
    - IFR area will have forced air applied to room 4 days after sealer is applied. This will be done to remove all vapors from the area;

  - After surfaces are sealed, the Contractor shall provide MEM a minimum of five (5) calendar days prior notice to perform post remediation wipe sampling to confirm the IFR has been remediated to 40 ug/SF;

  - Areas above 40 ug/SF shall be cleaned to remove lead dust from sealed surface. Once cleaned, the area shall be retested to confirm area has been remediated to 40 ug/SF;

  - All re-testing of previously failed areas shall be performed by MEM. Contractor shall provide MEM a minimum of five (5) calendar day's prior notice to perform sampling.

  - The chart below summarizes the clearance numbers for the indoor firing range. All lead wipe samples must be at or below these numbers in order for the room to be considered clean.

Post Remediation	Post Sealant
200 ug/SF	40 ug/SF

2. Remaining Building

Lead Dust Remediation (See Attachment 8)

- Properly clean up any large oil, grease, etc. spills on the floors and properly dispose before lead remediation begins;

- Surfaces above the floors such as walls, shelves, etc. may have accumulated dust that has settled. This accumulation shall be removed prior to the cleaning of the floors. This shall be done to prevent recontamination of the floors after they are cleaned.

- Floors of the entire building shall require lead dust remediation;

    - Remove dust from all equipment, shelving, trash, etc, and remove these items from room before remediation begins;
    - Remove dust from all carpet, remove carpet from rooms, and dispose of all carpet as non-hazardous waste before lead dust remediation of floor begins;
    - Dispose any materials, determined by the DEQ to be trash, as non-hazardous waste;
    - HEPA vacuum and wet wash floors of entire building;
        - Lead levels on the floor are high in many areas of the building and lead contaminated dust may be ground into the pores and cracks of the concrete. It may be necessary to clean floors several times or use alternate cleaning methods after HEPA vacuuming and wet washing to remove the lead dust from the concrete and get the lead levels down to 40 micrograms per square foot (ug/SF).
    - Contact Marshall Environmental Management (MEM) to perform independent third-party post remediation wipe sampling to confirm that room floors with lead contamination have been appropriately remediated to 40 micrograms per square foot (ug/SF). See Section 4 (Confirmation and Clearance Sampling) for additional information;
    - Areas above 40 ug/SF shall be re-cleaned and re-tested until results are at or below 40 ug/SF;
    - Lead dust and appropriate cleaning materials shall be disposed as appropriate.
    - Wash Water Disposal
        - All wash water from the building shall be filtered through a 1 micron filter and stored on site in containers;
        - The wash water will be sampled for total lead and total phosphorus; Total lead shall be run by ICP and total phosphorus shall be run by EPA Method 365.3;
        - Sample results shall be submitted to DEQ to determine if wash water can be disposed at the local Waste Water Treatment Facility;
        - Wash water shall be disposed appropriately.

3. Disposal of Materials

Hazardous Waste

- Lead contaminated sand shall be disposed as hazardous waste;
- Lead contaminated dust from the cleaning of the IFR and remaining building shall be disposed as hazardous waste;
- Wash water filters shall be disposed as hazardous waste;
- Mop heads, towels, brushes, wipes, and other cleaning supplies shall be disposed as hazardous waste.

Other

- Poly Sheeting shall be disposed as appropriate. If contractor plans to dispose as non-hazardous waste, best management practices such as vacuuming, washing, wiping down, or cleaning poly sheeting prior to disposal shall be implemented.
- Personal protective equipment (gloves, tyvec, face masks, etc.) shall be disposed as appropriate.

4. Confirmation and Clearance Sampling

- Contractor may use his own lab to check progress of remediation, however all DEQ decisions shall be based on analytical data from MEM.
- Marshall Environmental Management (MEM) will be responsible for taking all post remediation samples.
- MEM shall be notified five (5) days prior to each sampling event.
- Contact Information: **Marshall Environmental Management Inc.**
  1601 Southwest 89th Street, Suite 100-A
  Oklahoma City, Oklahoma 73159
  Contact: Sara Marshall
  Phone: (405) 616 – 0401

- <u>The third-party sampling shall not be included in the contractors base bid;</u>
- All post remediation sampling done outside the indoor firing range will be performed after all initial abatement, remediation, and cleaning is complete.
- The chart below summarizes the clearance numbers for the building. All lead wipe samples shall be at or below these numbers in order for these areas to be considered clean.

IFR Post Remediation	IFR Post Sealant	Room Floors
200 ug/SF	40 ug/SF	40 ug/SF

FINAL REPORT

- Write final report and submit to DEQ;
  - Final report shall include asbestos, lead dust and lead-based paint abatement;
- Final report shall include:
  - A detailed summary of work including any warranties and data;
  - sample results;
  - waste manifests; and
  - photo documentation of work;
    - Photo documentation of work will have color digital photos with captions describing photo;
    - Photos will show before and after photos of work completed.
- Final report will be submitted in hard copy and electronically on disc.

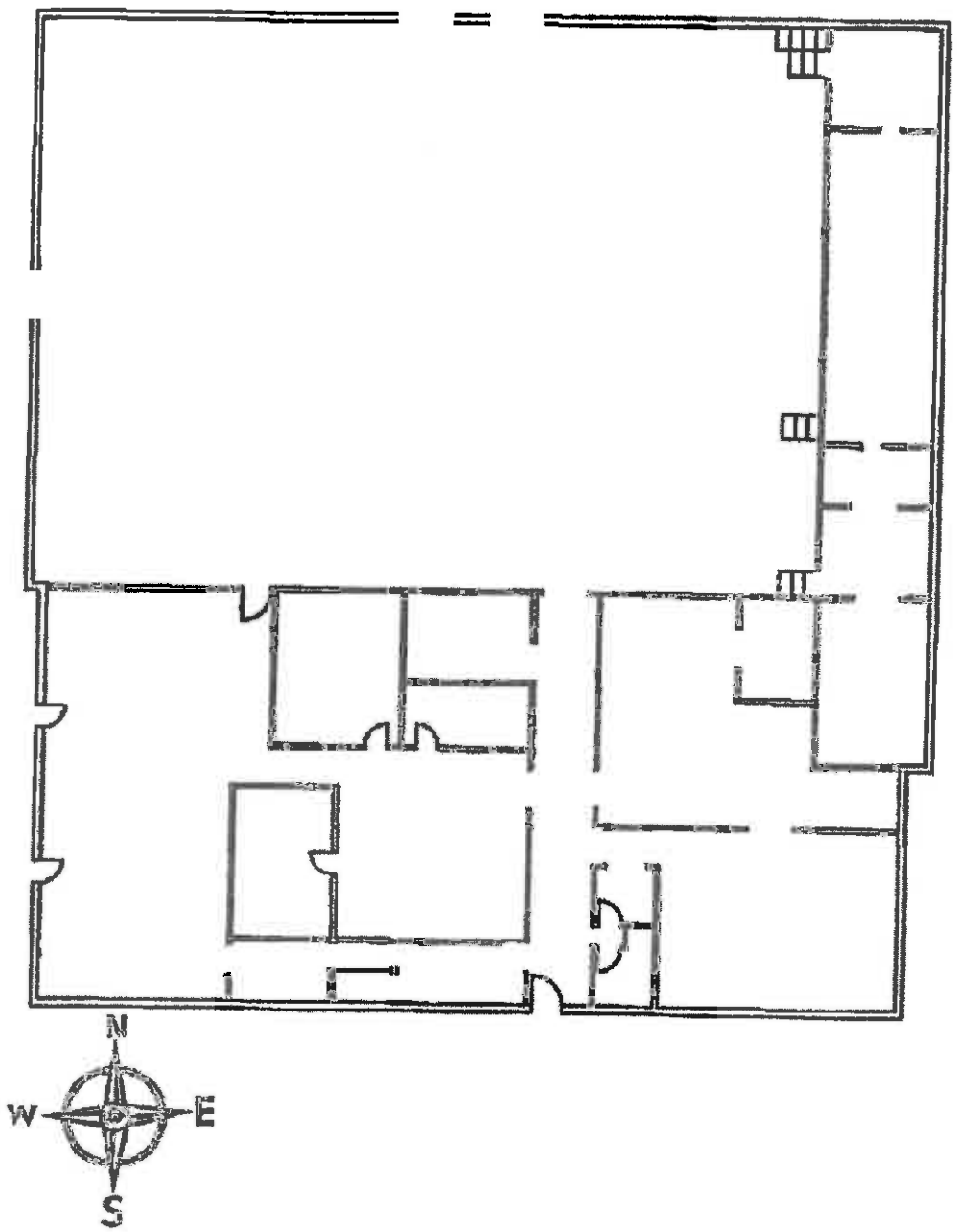
OWNER REPRESTATIVE

Owner's Representative: Dustin Davidson
Oklahoma Department of Environmental Quality
Land Protection Division
707 N. Robinson
Oklahoma City, OK 73101
(405) 702-5115 (Office)
(405) 702-5101 (Fax)
E-Mail: Dustin.Davidson@deq.ok.gov

ATTACHMENT 1

Floor Plan Map

Weatherford Armory



ATTACHMENT 2

Guidelines and Procedures for Rehabilitation and Conversion of Indoor Firing Ranges

Departments of the Army and the Air Force
National Guard Bureau
Arlington, VA 22202-3231
3 November 2006

*NG Pam 420-15

Facilities Engineering

Guidelines and Procedures for Rehabilitation and Conversion of Indoor Firing Ranges

By Order of the Secretaries of the Army and the Air Force:

H STEVEN BLUM
Lieutenant General, USA
Chief, National Guard Bureau

Official:

GEORGE R. BROCK
Chief, Plans and Policy Division

History. This printing publishes a revision of NG Pam (AR) 385-16/ANGPAM 91-101.

Summary. This pamphlet prescribes policy for rehabilitation and conversion of National Guard Indoor Firing Ranges (IFR).

Applicability. This guidance applies to all persons responsible for the operation of National Guard IFRs. As no regulation/guidance can foresee all situations that might arise, the following is written in a broad scope and is intended to be interpreted so as to ensure compliance with all applicable Federal and State laws and regulations.

Proponent and exception authority. The proponent of this regulation is Chief, NGB-SG-IH. The proponent has the authority to approve exceptions to this regulation that are consistent with controlling law and regulation.

Suggested Improvements. Users of this pamphlet are invited to send comments and suggested improvements on DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to NGB-SG-IH, 1411 Jefferson Davis Highway, Arlington, VA 22202-3231.

Distribution. A.

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* This publication supersedes NP Pam (AR) 385-16/ANGPAM 91-101, dated 31 January 1994.

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Glossary

1-1. Purpose
This pamphlet establishes the policy and procedures for rehabilitation and conversion, of National Guard IFRs.

1-2. References
Required and related publications and referenced and prescribed forms are listed in Appendix A.

1-3. Explanation of abbreviations and terms
Abbreviations and special terms used in this publication are listed in the glossary.

1-4. Policy and Procedures
Indoor firing ranges can be safely rehabilitated or converted for other uses, such as a storage area, classrooms or office space, provided the following –

a. Prior to conversion active ranges must be thoroughly decontaminated and cleaned to acceptable levels. *All ranges converted prior to the publication date of this pamphlet, must be inspected and evaluated to determine lead contamination.* This will be accomplished by a certified National Guard Industrial Hygienist (IH) or a person certified to perform inspections, evaluations, and determinations of IFRs IAW with OSHA standards, other nationally accepted standards, and accepted IH practices for maintenance, cleaning, conversion, ventilation, and air sampling of IFRs.

b. The level of cleanliness is to be determined by sampling. The Occupational Safety and Health Administration's (OSHA) Technical Manual, 5th Edition, provides guidance on the methods and techniques needed to collect wipe samples (Appendix B).

(1) Wipe samples must be collected and analyzed prior to and after cleaning.

(2) Post-cleaning surface wipe sample results must be less than 200 micrograms per square foot (ug/ft^2) (40 micrograms in the case of child exposure). The sampling strategy, which is the amount and location of wipe samples to be collected, is provided in Appendix C.

c. Equipment/Items previously stored in the range must be decontaminated and cleaned to acceptable levels as determined by a person certified to perform inspections, evaluations, and determinations of IFRs IAW with OSHA standards, other nationally accepted standards, and accepted IH practices for maintenance, cleaning, conversion, ventilation, and air sampling of IFRs.

(1) Samples must be collected from equipment/items stored in the range. Sample selection is critical, because the number of items stored, length of storage, and level of contamination differs from range to range. The amount and location of the samples should be representative of the areas where lead dust is most likely to accumulate. The more samples collected, the better the statistical comparison of the results.

(2) Samples must be collected from the smooth surfaces of the equipment/items, as much as possible. Results of samples collected from a rough surface will be inaccurate due to the minimal surface contact of the media. Further, the likelihood of tearing the media filter is greater on rough surfaces.

(3) Samples should also be collected on items stored the longest period of time, and which have not been disturbed. Items stored closest to the bullet trap and firing line are likely to have higher concentrations of lead dust.

1-5. Goal
To ensure that every IFR is free of lead dust which means to test less than 200 micrograms and to reduce the number of unsafe National Guard IFRs.

1-6. Deviation
Deviations from this guidance will require a written exception to policy from your Regional Industrial Hygiene Office. Questions and/or comments regarding this subject should be directed to your Regional Industrial Hygiene Office or Chief, National Guard Bureau, Office of the Joint Surgeon, ATTN: NGB-SG-IH, 1411 Jefferson Davis Highway, Arlington, VA 22202-3231.

Chapter 2
Health and Medical Aspects

2-1. Health Effects
29 Code of Federal Regulations (CFR) 1910.1025, Appendix A, identifies lead as a highly toxic metal. Elemental lead is indestructible, and common in the environment. Lead can enter the body by inhalation (breathing) or

ingestion (eating). In addition, lead is a cumulative poison. It accumulates in the blood, bones, and organs, including the kidneys, brain and liver. Effects include nervous and reproductive system disorders, delays in neurological and physical development, cognitive and behavioral changes, and hypertension. Symptoms include loss of appetite, difficulty sleeping, irritability, fatigue, headache, and inability to concentrate. It can stay in the bones for decades. Worker awareness and training are important to ensure that employees can recognize the symptoms of exposure and get prompt medical attention.

2-2. Medical Surveillance for Occupational Exposure to Lead (Pb)

a. Per 29 CFR 1910.1025 (j)(i-ii), Medical Surveillance - General, "The employer shall institute a medical surveillance program for all employees who are or may be exposed above the action level for more than 30 days per year. The employer shall assure all medical examinations and procedures are performed by or under the supervision of a licensed physician."

b. The DOD 6055.5-M, Occupational Medical Surveillance Manual - Table 2-1 lists medical surveillance criteria for employees "who are or may be exposed above the action level for 30 days/year."

2-3. Air Monitoring

Worker breathing zone air samples must be collected to ensure that personnel are not overexposed to airborne lead during the cleanup phase. Daily air samples will be collected from all personnel involved in the cleanup operation. These exposure levels will be used to evaluate work practices and medical surveillance requirements.

2-4. Wipe Sampling Protocol and Media

A template measuring 10 centimeters by 10 centimeters square, approximately 4 inches square, should be used to accurately measure and mark the area before collecting wipe samples. Samples should be staggered to different areas of the range. A grid system should be utilized. Samples should not be collected all on one section of a wall, or end of the building. OSHA Technical Manual provides the necessary guidance on the technique needed to collect wipe samples (Appendix B). Only distilled or deionized water will be used to saturate dry sample media. At least one field blank must be submitted with every 10 samples. The field blank must be from the same lot, and labeled as a blank.

2-5. Personal Protective Equipment

29 CFR 1910.1025 (f) (2), for housekeeping and rehabilitation the employer shall select respirators from among those approved for protection against dust, fume, and mist by the National Institute for Occupational Safety and Health (NIOSH), under the provision of 42 CFR part 84. The employer shall institute a respiratory protection program in accordance with 29 CFR 1910.134 (b), (d), (e) and (f). As a minimum, personnel conducting the decontamination of the range will be provided with the following personal protective equipment.

a. Under 29 CFR 1910.1025 (g). For employees engaged in range rehabilitation and/or range conversion, the employer shall provide at no cost to the employee, and ensure that the employes uses appropriate protective work clothing and equipment such as, but not limited to:

(1) Protective coveralls with hood and shoe covers or disposable Tyvek ™ full body suit.

(2) Disposable rubber gloves; and disposable shoe coverlets (If necessary).

(3) Full-face air purifying respirator with P-100 cartridges.

b. The employer shall provide the clothing required in a clean and dry condition at least daily to employees engaged in the conversion of IFRs.

c. The employer shall provide for the cleaning, laundering, or disposal of used or contaminated protective clothing and equipment.

d. The employer shall assure that all protective clothing is removed at the completion of a work shift only in areas designated for that purpose (Change Areas or Change Rooms).

e. The employer will ensure that contaminated protective clothing that is to be cleaned, laundered, or disposed of, is placed in a closed container in the change area that seals sufficiently enough to prevent dispersion of lead dust.

f. The employer will further inform in writing any person who cleans or launders protective clothing or equipment of the potentially harmful effects of exposure to lead.

g. The employer will ensure that the containers of contaminated protective clothing and equipment are labeled as follows: CAUTION: *CLOTHING CONTAMINATED WITH LEAD. DO NOT REMOVE DUST BY BLOWING OR SHAKING. DISPOSE OF LEAD CONTAMINATED WASH WATER IN ACCORDANCE WITH APPLICABLE LOCAL, STATE, OR FEDERAL REGULATIONS.*

Chapter 3
Education, Maintenance, Cleaning and Conversion

3-1. Worker Education

a. 29 CFR 1910.1025, Appendix B, requires an information and training program for all employees exposed to lead above the action level or who may suffer skin or eye irritation from lead. The program must inform the employees of the specific hazards associated with their work environment, protective measures which can be taken, the danger of lead to their bodies (including their reproductive systems), and their rights under the standard. In addition you must make readily available to all employees, including those exposed below the action level, a copy of this standard and its appendices. This training program will be repeated annually for personnel in range cleanup operations.

b. The commander/supervisor will ensure that each soldier or Army National Guard (ARNG) employee is informed of the following:

(1) The content of the standard and its appendices.
(2) The specific nature of operations that could result in exposure to lead above the action level.
(3) The purpose, proper selection, fitting, use and limitations of respirators.
(4) The purpose and a description of medical surveillance program.
(5) Eating and drinking are prohibited in lead contaminated areas.
(6) Smoking and smoking materials will not be permitted in contaminated areas.
(7) Soldiers and ARNG employees must wash their hands and other exposed skin whenever they leave the work area.
(8) The engineering controls and work practices associated with the individual's job assignment.
(9) The contents of any compliance plan in effect.
(10) Instructions to soldiers and ARNG employees that chelating agents should not routinely be used to remove lead from their bodies and should not be used at all except under the direction of a licensed physician.

3-2. Range Cleaning Instructions

a. Written procedures, such as a scope of work, or standing operating procedure that complies with all Federal, State and local regulations must be established prior to decontamination operations.

b. The range ventilation system will be in operation during range cleaning to ensure that a negative pressure environment is maintained. In the absence of mechanical ventilation system, all doors and windows will be sealed to eliminate fugitive emissions.

c. A High Efficiency Particulate Air (HEPA) filtered vacuum system, which is designed to collect loose surface lead dust particles, is the preferred method of cleanup. If a HEPA filtered vacuum is not available, the range can be cleaned using a wet method.

d. Prohibited methods include:

(1) Wet cleaning using high-pressure systems, since this method may embed the lead into the substratum and generate large quantities of hazardous waste.
(2) Dry sweeping is not permitted.

e. All surface areas of the range must be cleaned. In addition, areas outside of the IFR where lead can be tracked must be cleaned.

f. The preferred progression of cleaning is from top to bottom and from behind the steel bullet trap to the firing line.

(1) Clean the steel bullet trap, areas in front of and behind the bullet trap, and the steel bullet trap plate(s), after removing the sand (if applicable).
(2) Clean the ceiling, floors, lights, baffles, retrieval system, heating system(s), and ventilation duct(s).
(3) Vacuum and remove acoustical material. *Painting over this material is not recommended.*
(4) Clean the floor the last, starting at the bullet trap and ending behind the firing line.

g. When using a HEPA filtered vacuum, vacuum all surface areas until no dust or residue is visible.

h. Any general purpose cleaning solutions can be used for the wet method. However, Spic and Span™ has been found to be an effective cleaning solution by other Army organizations. Mix new solutions of cleaning solution frequently. Wet wiping will require dual containers of water, one container for wetting the applicator (mops, rags, sponge, etc.) and the other container for rinsing the applicator after the dust has been wiped from the surfaces. After wet wiping all surfaces, permit the area to dry.

i. *Properly dispose of all hazardous waste. Do not place lead contaminated waste into the sewer system or onto the ground.*

[redacted]

(2) Mop-heads, sponges and rags will be discarded as hazardous waste following cleanup.

j. A thorough visual inspection to detect dust should be made following cleanup and prior to collecting post surface wipe samples.

k. Wood floors should receive a coat of deck enamel or urethane; concrete floors should be sealed with deck enamel.

l. As a variety of conditions exist in ranges, unique situation may arise and specific written guidance from your Regional Industrial Hygiene Office may be required.

m. Any cleaning activities must be under the supervision by a trained and competent personnel IAW with OSHA and other nationally accepted standards and the work shall be according to current industry engineering standards under the control of the State Construction and Facilities Management Officer. Cleaning must recognize that there likely will be "background" lead presence in the readiness center totally independent of the existence of an indoor range and that the method of cleaning is less important than achieving the goal of less than 200 micrograms (40 micrograms in the case of child exposure).

3-3. Cleaning Stored Contaminated Equipment

a. Equipment contaminated (sample result is higher than 200 ug/ft^2) with lead dust must be decontaminated before it is removed from the range.

b. Equipment located near the bullet trap and firing line should be cleaned first and then removed. The cleaning method depends on the size of the equipment and the material it is comprised of, i.e. metal, wood, concrete, porous, non-porous, smooth or rough finish etc. However, either HEPA vacuum or the wet wipe method will be used. Refer to paragraph 3-2 for additional guidance.

c. Every attempt should be made to clean and reclaim items since disposing of equipment, as hazardous waste is costly and wasteful. Only as a last resort will the item be discarded as hazardous waste. Porous items, such as office partitions and carpet that were present during firing should be considered grossly contaminated and be discarded unless analysis proves otherwise. Consult your State Environmental Office for the proper hazardous waste disposal methods.

3-4. Contaminated Sand and Lead Waste

Consult your State Environmental Office for specific disposal guidance to ensure compliance with local laws and regulations.

3-5. Range Rehabilitation

This chapter applies to all IFRs that have been identified as candidates for rehabilitation. It provides further guidance for cleaning and/or sampling that might be required prior to the start of rehabilitation.

a. The portion(s) of the range to under go rehabilitation must be sampled to determine the level of lead contamination. Wipe samples will be taken per the established sampling protocol. See Appendix B.

b. All personnel involved in range rehabilitation will wear a NIOSH approved respirator (P-100) and proper personal protective equipment as prescribed in paragraph 2-5 above.

c. Prior to the start of rehabilitation, the environmental office must be notified to determine the disposition of any debris containing hazardous materials (lead).

d. Supervision shall be by a person who is certified to perform inspections, evaluations, and determinations of IFRs IAW with OSHA standards, other nationally accepted standards, and accepted IH practices for maintenance, cleaning, conversion, ventilation, and air sampling of IFRs. All work shall be according to current industry engineering standards under the control of the State Construction and Facilities Management Officer.

3-6. Conversion of Indoor Firing Ranges

Prior to the start of decontamination, employers must ensure that all procedures to be used comply with Federal, State, and local regulations. To ensure that all lead contamination is eradicated, the following procedure is established.

a. The State shall follow the project approval process as delineated in NGR 420-10 (or NGR 415-5 if the use of the military construction appropriation is required).

b. All ranges slated for conversion will be inspected and evaluated by the NGB Regional Industrial Hygiene Office.

c. All equipment stored in the range, if applicable, prior to the start of decontamination must be sampled, decontaminated, re-sampled and removed or turned in as lead contaminated material.

d. All acoustical tiles and/or sound proofing material (if applicable) must be removed and turned in as lead contaminated material through the environmental office.

e. The bullet trap, target retrieval system and firing line stations must be removed and turned in as lead containing material through the environmental office.

f. Light fixtures and ventilation system grills must be removed and decontaminated.

g. Ventilation system ducts need to be decontaminated or removed and replaced.

h. The exhaust fans and/or the complete ventilation air-handling unit (if applicable) must be decontaminated or removed to include roof fans.

i. Cover all openings of any component previously decontaminated prior to start of interior decontamination of the firing range.

j. Prior to start of washing, the interior of the range should be vacuumed with a HEPA filtered vacuum. The range should be washed using a cleaning solution of hot water and Spic and Span in five gallons of hot water. A progression of cleaning from top to bottom, and from back to front should be used. All surface areas of the range must be cleaned. Mix new solutions of water frequently. Washing will require dual containers of water; one container for wetting the applicators (mops, rags, sponges, etc.), and the other container for rinsing the applicators. [redacted] *Properly dispose of all hazardous waste and do not place any lead contaminated waste into the sewer system or onto the ground.* Mop heads, sponges and rags will be discarded as hazardous waste following decontamination of the range. After completion of decontamination, and prior to taking clearance samples, the ventilation system must be run for a period of 36 hours. Wipe clearance samples will be taken from ceiling, walls and floors. The range will be considered clean if no clearance sample is greater than 200 ug/ft^2, if any sample is above 200 ug/ft^2, the range is not considered clean, the range will need to be re-washed until clearance samples are below 200 ug/ft^2.

k. The regional industrial hygienist will do quality assurance sampling as needed.

l After obtaining clearance, the walls of the range will be coated with a sealant (Not Paint), which is smooth, wood floors will receive a coat of deck enamel or urethane, concrete floors will be sealed with deck enamel. After sealing, floors will be tiled or covered with linoleum.

m. As a variety of conditions exist in ranges, unique situations may arise and specific written guidance from the Regional Industrial Hygiene Office may be required.

n. All personnel involved in the decontamination/conversion of IFRs as a minimum will be provided with the following personal protective equipment.

(1). Full Face air purifying respirator with HEPA cartridges. The requirements outline in 29 CFR 1910.134, must be met prior to placing workers in respiratory protection.

(2). Individuals will be provided personal protective equipment as required per paragraph 2-5, this pamphlet.

o. Any conversion must be supervised by a person certified to perform inspections, evaluations, and determinations of IFRs IAW with OSHA standards, other nationally accepted standards, and accepted IH practices for maintenance, cleaning, conversion, ventilation, and air sampling of IFRs. All work shall be according to current industry engineering standards under the control of the State Construction and Facilities Management Officer. Cleaning must recognize that there likely will be "background" lead presence in the readiness center totally independent of the existence of an indoor range and that the method of cleaning is less important than achieving the goal of less than 200 micrograms (40 micrograms in the case of child exposure).

p. After conversion, lead testing shall continue on an annual basis to verify that no lead migration from the substrate is occurring.

Appendix A
References

Section I
Required Publications

There are no entries in this section

Section II
Related Publications

ASTM E1792-03
Standard Specification for Wipe Sampling Materials for Lead in Surface Dust

AR 11-34
The Respiratory Protection Program

AR 40-5
Preventive Medicine

DODI 6055.5
Industrial Hygiene and Occupational Health

DOD 6055.5-M
Occupational Medical Surveillance Manual

29 CFR, Part 1910
Occupational Safety and Health Administration, Department of Labor

National Institute for Occupational Safety and Health (NIOSH) 76-130
Lead Exposure and Design Considerations for Indoor Firing Ranges, Department of Health, Education and Welfare

NGR 385-15
Policy and Responsibilities for Inspection, Evaluation and Operation Army National Guard National Guard Indoor Firing Ranges (IFRs).

NGR 415-5
Army National Guard Military Construction Program Development and Execution

NGR 420-10
Construction and Facilities Management Office Operations

Technical Manual, 5th Edition
Occupational Safety and Health Administration, Department of Labor

Section III
Prescribed Forms

There are no entries in this section

Section IV
Referenced Forms

There are no entries in this section

Appendix B
Protocol for Collecting Wipe Samples

B-1. If multiple samples are to be collected at the work site, prepare a rough sketch of the area(s) or room(s), which are to be wipe sampled.

B-2. A new set of clean, impervious gloves should be used for each sample to avoid contamination of the media by previous samples and to prevent contact with the substance.

B-3. Wipe Samples
a. If using Ghost Wipes™, tear open the individually sealed package. Remove the moistened wipe. Unfold the wipe.
b. If using a dry media such as MCE or Whatman™ filter, moisten the filter with distilled or deionized water prior to sampling.

B-4. Place a 10 centimeter by 10 centimeter template on the area to be wiped.

B-5. Apply uniform firm pressure while wiping the area inside the template.

B-6. To ensure that all portions of the partitioned area are wiped, start at the outside edge and progress toward the center making concentric squares decreasing in size.

B-7. After collecting a sample, fold the filter or wipe inward and place into a container and number it. Note the number at the sample location on the sketch.

B-8. At least one blank filter treated in the same fashion but without wiping, should be submitted to the laboratory.

Appendix C
Sampling Strategy for Collection of Wipe Samples

C-1. Prior to cleaning the ranges, three samples must be collected and analyzed for total lead dust on each surface, i.e., floor, ceiling, bullet trap, and wall to include the plenum wall, if applicable. In addition, a total of three samples should be collected from areas which have been least disturbed by airflow. Established walkways should be avoided.

C-2. Samples should be collected from different areas of the range. A grid system should be utilized. Each range surface areas should be divided evenly into 3 by 3 sections. Samples should not be collected from only one section of a wall or end of the building.

7

Glossary

Section I
Abbreviations

ARNG
Army National Guard

CFR
Code of Federal Regulations

HEPA
High Efficiency Particulate Air

IFR
Indoor Firing Range

NIOSH
National Institute for Occupational Safety and Health

OSHA
Occupational Safety and Health Administration

ug/ft²
Micrograms per square foot

Section II
Terms

Air monitoring
The sampling for and measuring of pollutants in the atmosphere.

Breathing zone
The imaginary globe of two feet radius surrounding the head

General area
Collection of and later analysis of airborne contaminants in a given work environment. As the sampling pump and collection media are not attached to a worker, the concentrations found represent average concentrations in that area but may not representative of the actual exposure of the worker.

HEPA
Refers to high efficiency particulate air filter systems capable of capturing up to 99.97 percent of particles 0.3 microns in size or larger.

Lead-Contaminated Range
It is assumed that all IFRs, which have been fired in, are lead-contaminated.

Respirator
A device designed to provide the wearer with respiratory protection against inhalation of airborne contaminants.

Wipe Sample
The terms wipe, swipe, or smear samples are used synonymously to describe the techniques utilized for assessing lead surface contamination.

ATTACHMENT 3

Health & Safety Aspects to Consider

Health & Safety Aspects to Consider

Project Goal: To ensure that former National Guard Armories are free of lead dust. Specifically, indoor firing ranges (IFR's) and other areas that contain lead contamination.

Please Note: the following information is from the Departments of the Army and the Air Force, National Guard Bureau, Guidelines and Procedures for Rehabilitation and Conversion of Indoor Firing Ranges (**Attachment 2**).

Health and Medical Aspects

Health Effects

29 Code of Federal Regulations (CFR) 1910.1025, Appendix A, identifies lead as a highly toxic metal. Elemental lead is indestructible and common in the environment. Lead can enter the body by inhalation (breathing) or ingestion (eating). In addition, lead is a cumulative poison. It accumulates in the blood, bones, and organs, including the kidneys, brain and liver. Effects include nervous and reproductive system disorders, delays in neurological and physical development, cognitive and behavioral changes, and hypertension. Symptoms include loss of appetite, difficulty sleeping, irritability, fatigue, headache, and inability to concentrate. It can stay in the bones for decades. Worker awareness and training are important to ensure that employees can recognize the symptoms of exposure and get prompt medical attention.

Medical Surveillance for occupational Exposure to Lead

a. 29 CFR 1910.1025(j)(i-ii), Medical Surveillance - General: "The employer shall institute a medical surveillance program for all employees who are or may be exposed above the action level for more than 30 days per year. The employer shall assure all medical examinations and procedures are performed by or under the supervision of a licensed physician."

b. The DOD 6055.5-M, Occupational Medical Surveillance Manual - Table 2-I lists medical surveillance criteria for employees "who are or may be exposed above the action level for 30 days/year."

Personal Protective Equipment

29 CFR 1910.1025(f)(2),for housekeeping and rehabilitation the employer shall select respirators from among those approved for protection against dust, fume, and mist by the National Institute for Occupational Safety and Health (NIOSH), under the provision of 42 CFR part 84. The employer shall institute a respiratory protection program in accordance with 29 CFR 1910.134(b), (d), (e), and (f). As a minimum, personnel conducting the decontamination of the range shall be provided with the following personal protective equipment.

a. Under 29 CFR 1910.1025 (g). For employees engaged in range rehabilitation and/or range conversion, the employer shall provide at no cost to the employee, and ensure that the employee uses appropriate protective work clothing and equipment such as, but not limited to:

(1) Protective coveralls with hood and shoe covers or disposable Tyvek ™ full body suit.

(2) Disposable rubber gloves; and disposable shoe coverlets (If necessary).

(3) Full-face air purifying respirator with P-100 cartridges.

b. The employer shall provide the clothing required in a clean and dry condition at least daily to employees engaged in the conversion of IFRs.

c. The employer shall provide for the cleaning, laundering, or disposal of used or contaminated protective clothing and equipment.

d. The employer shall assure that all protective clothing is removed at the completion of a work shift only in areas designated for that purpose (Change Areas or Change Rooms).

e. The employer shall ensure that contaminated protective clothing that is to be cleaned, laundered, or disposed of, is placed in a closed container in the change area that seals sufficiently enough to prevent dispersion of lead dust.

f. The employer shall further inform in writing any person who cleans or launders protective clothing or equipment of the potentially harmful effects of exposure to lead.

g. The employer shall ensure that the containers of contaminated protective clothing and equipment are labeled as follows: CAUTION: *CLOTHING CONTAMINATED WITH LEAD. DO NOT REMOVE DUST BY BLOWING OR SHAKING. DISPOSE OF LEAD CONTAMINATED WASH WATER IN ACCORDANCE WITH APPLICABLE LOCAL, STATE, OR FEDERAL REGULATIONS.*

Education, Maintenance, Cleaning and Conversion

Worker Education

a. 29 CFR 1910.1025, Appendix 13, requires an information and training program for **all employees exposed** to lead above the action level **or** who may suffer skin or eye irritation from lead. The program must inform the employees of the specific hazards associated with their work environment, protective measures which can be taken, the danger of lead to their bodies (including their reproductive systems), and their rights under the standard. In addition you must make readily available to all employees, including those exposed below the action level, a copy of this standard and its appendices. This training program shall be repeated annually for personnel in range cleanup operations.

b. The supervisor shall ensure that each individual employee is informed of the following:

(1) The content of the standard and its appendices.

(2) The specific nature of operations that could result in exposure to lead above the action level.

(3) The purpose, proper selection, fitting, use, and limitations of respirators.

(4) The purpose and a description of medical surveillance program.

(5) Eating and drinking are prohibited in lead contaminated areas.

(6) Smoking and smoking materials shall not be permitted in contaminated areas.

(7) Employees must wash their hands and other exposed skin whenever they leave the work area.

(8) The engineering controls and work practices associated with the individual's job assignment.

(9) The contents of any compliance plan in effect.

(10) Instructions to employees that chelating agents should not routinely be used to remove lead from their bodies and should not be used at all except under the direction of a licensed physician.

REFERENCES

Section 1 Required Publications

There are no entries in this section

Section II Related Publications

ASTM E1792-03
Standard Specification for Wipe Sampling Materials for Lead in Surface Dust

AR 11-34
The Respiratory Protection Program

AR 40-5
Preventive Medicine

DODI 6055.5
Industrial Hygiene and Occupational Health

DOD 6055.5-M
Occupational Medical Surveillance Manual

29 CFR, Part 1910
Occupational Safety and Health Administration, Department of Labor

National Institute for Occupational Safety and Health (NIOSH) 76-130
Lead Exposure and Design Considerations for Indoor Firing Ranges, Department of Health, Education and Welfare

NGR 385-15
Policy and Responsibilities for Inspection, Evaluation and Operation Army National Guard National Guard Indoor Firing Ranges (IFRs).

NGR 415-5
Army National Guard Military Construction Program Development and Execution

NGR 420-10
Construction and Facilities Management Office Operations

Technical Manual, 5th Edition
Occupational Safety and Health Administration, Department of Labor Section III

ATTACHMENT 4

Weatherford Armory Asbestos Inspection Report

Weatherford Armory Asbestos Project Design

GMR & Associates, Inc.

Engineering and Environmental Consultants

PROJECT DESIGN
FOR
ASBESTOS ABATEMENT
WEATHERFORD ARMORY
WEATHERFORD, OK

OCTOBER 2012

Prepared By:

GMR and Associates
2520 NW 39th Street, Suite 200
Oklahoma City, Oklahoma 73112
(405) 528-7017 fax (405) 528-3346

2520 West I-44 Service Road, Suite 200
P.O. Box 57827
Oklahoma City, OK 73157-7827
Telephone: 405-528-7017
Fax: 405-528-3346

Introduction

This Project Design was prepared for compliance with existing statutes and regulations governing the removal and disposal of asbestos-containing materials in facilities accessible to the public within the State of Oklahoma. It is designed to provide a prudent course of action for handling of asbestos in the best interests of the facility owner, building occupants and the general public.

1. Statement that DCL Abatement of Friable Asbestos Materials Rules Apply

This Project Design intends that the abatement be performed in compliance with the following state and federal regulations:

Asbestos Statutes and Abatement of Friable Asbestos Materials Rules (OAC 380:50) State of Oklahoma Department of Labor, Asbestos Division.

Project Name: Weatherford Armory, Weatherford, Oklahoma.

Occupancy: The building will not be occupied during abatement activities.

Project Type: Removal of windows having friable caulk on both the interior and exterior of the panes.

Abatement Contractor: To be determined

Owner's Representative: GMR & Associates, Inc.

Regulatory Compliance

This Project Design intends that the abatement be performed in compliance with the following state and federal regulations:

Asbestos Statutes and Abatement of Friable Asbestos Materials Rules, (OAC 380:50) State of Oklahoma Department of Labor, Asbestos Division.

CFR 1910, General Industry Standards, latest edition, except for Section 1001(c) and (d).

CFR 1926, Construction Industry Standards, latest edition, except for Section 1100(c)(1) and (2).

CFR part 61, NESHAPS, latest edition.

ANSI Z88.2, latest edition.

American Conference of Governmental Industrial Hygienists' (ACGIH) Adopted Threshold Limit Value for Heat Stress.

2. Work Sequencing and Phasing

The work will be performed in three (3) phases.

Phase 1 – Removal of Windows on the east side of the Building.

Phase 2 – Removal of Windows on the north side of the Building

Phase 3 – Removal of Windows on the west side of the Building

*Sequence in each task shall be as follows:

1. Baseline air monitoring
2. Establish decontamination and load-out unit
3. Install critical barriers over openings
4. Establish emergency exits
5. Prep of the work area/s
6. DOL prep inspection
7. Removal of ACM material
8. Lock-down
9. DOL visual inspection
10. Clearance monitoring
11. Tear down except for critical barriers
12. DOL final inspection

3.Means of Egress and Fire Protection

Primary emergency exits for work will be through the decontamination unit. The exit paths are shown on the Abatement Plan.

The fire protection plan includes two emergency exits:

1. Through the decontamination unit,
2. Through the load-out unit

Fire Extinguishers-The Abatement Contractor will provide a Type 10 dry-charged ammonium phosphate fire extinguisher (10 lb) for the work area. The fire extinguisher will have a valid inspection tag and be decontaminated upon removal from the work area. A sufficient number of extinguishers will be provided to insure that all workers are within 75 feet of one.

4. Quantity, type and location of asbestos materials to be abated

- A total of 23 windows which have asbestos containing caulking will be removed. The windows range in size from 80" x 38" to 116" x 38".

5. Abatement methods, techniques and number of glove-bags or mini containments

- All work in all containments must be performed with the workers using full-face PAPR.
- Lock-down is required for the abated surfaces in all containments.

6. Numbers of air monitoring pumps.

In each containment:

- Five area pumps, one at each of the following locations.
  1. One inside the work area.
  2. One outside the de-con unit.
  3. One at the trailer during load-out.
  4. One placed at the discretion of DOL
  5. One placed outside the AFD discharge.

- Personnel pumps on the following:
  1. Minimum of 2 workers and/or 25% of the workers in each work area.

- Clearance Monitoring:
  1. In accordance with 40 OAC 380:50-11-2.

7. Numbers and locations of clean test samples and type of analysis.

- Clearance samples will be taken in accordance with 40 OAC 38):50-11-2. Five (5) clearance samples will be taken for each phase and analyzed by PCM.

8. Numbers, capacities, location and discharge points of negative air machines.

- A 0.02 negative air pressure will **not** be required for the exterior containment. Six (6) air changes per hour will be required. A total volume of 10,000 cubic feet of containment would be required for the exterior for each phase. A single negative air unit having a capacity of 2000 cfm would be sufficient for the six (6) changes per hour. The exaust will be discharged externally.

9. Details of project containment (s).

- Entry into and exit from the work areas shall be through the decontamination unit. Barrier tape and warning signs shall be posted at the entry of containments. Load-outs shall be attached to the work areas. All power has been disconnected from the building and the HVAC equipment has been previously removed.

- Exterior critical barriers and drop cloths shall be Nylon re-enforced poly attached to the roof and/or supported by a wooden frame as needed for a viable work area. The drop cloths shall extend a minimum of ten feet from the exterior walls to allow for window removal.

- The interior windows will be HEPA vacuumed and then sealed with two (2) layers of 6-mil reinforced poly during window removal.

- Power shall be supplied from a temporary source. Contractor is responsible for contacting the electric utility to supply the temporary service. A GFCI board or GFCI's shall be supplied to protect power inside the containment.

- Water shall be supplied to the building by the City of Weatherford at a point to be determined. The abatement contractor will be responsible for the connection.

10. Details of decontamination system (s).

- An attached decontamination facility per OAC 380:50-15-7, 8 and12 is planned for this work. The decontamination unit will consist of three chambers, a clean room, a shower and a dirty room. The airlocks for the decontamination unit will consist of triple 6 mil polyethylene overlapping flaps. The shower shall be equipped with a 5-micron waste water filter and a10 micron waste water pre-filter, liquid cleaning agent, non-porous shower grates and a functioning in-line water heater with capacity for 5 gallons per worker. Disposal of wastewater will be into the sanitary sewer. The specific locations will be determined during prep. Negative air flow will be maintained with a flow of makeup air from the clean room through the shower to the dirty room and vented internally.

11. Soil Sampling

- No soils are involved.

12. Special Materials/Methods Required

- No special materials/methods are required

13. Variances from the Rules

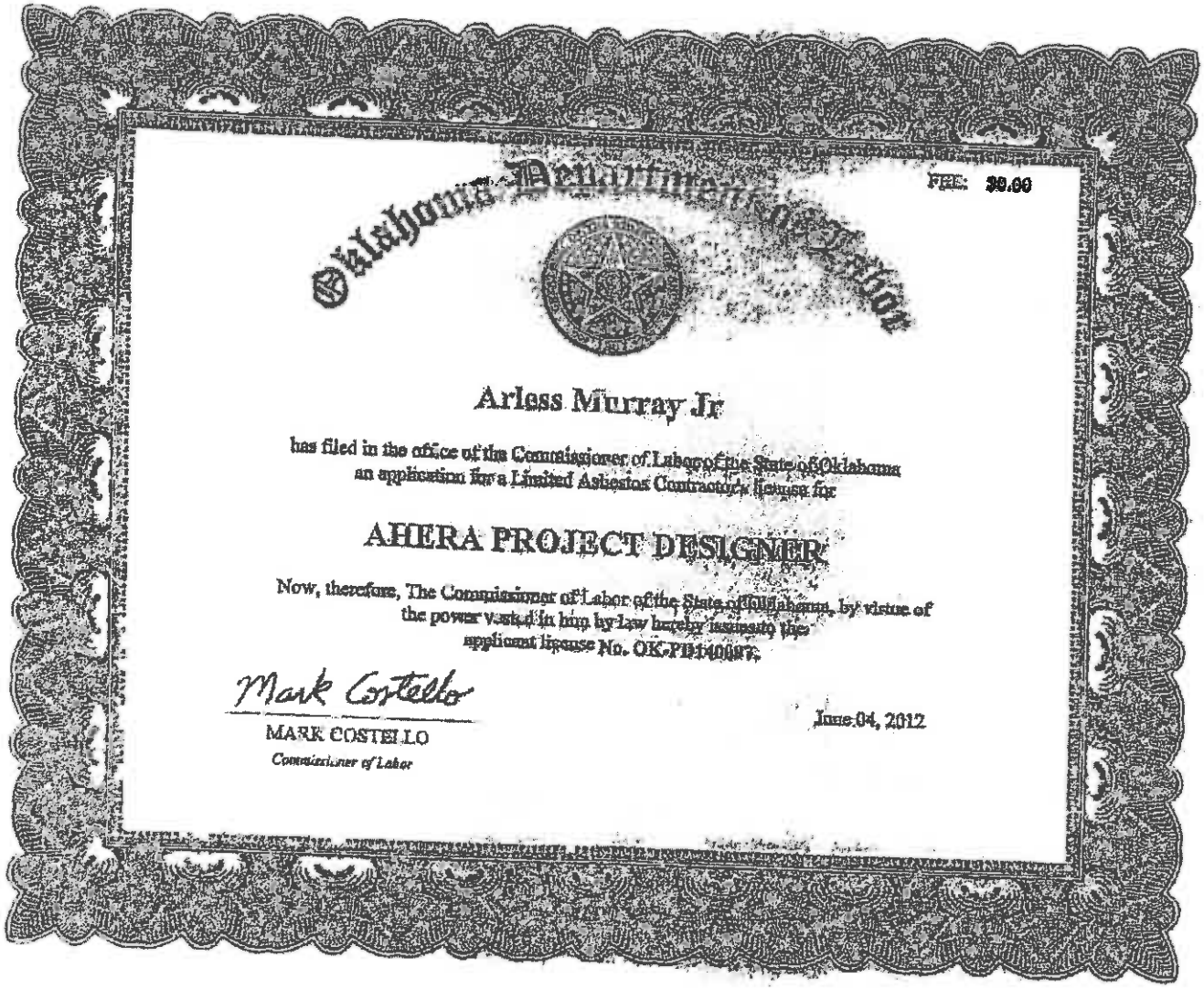
- No variances from the Rules are required at this time.

CERTIFICATION

This Project Design was prepared in accordance with OAC 380:50 and the Project Design Checklist issued by the Oklahoma Department of Labor.

Arless Murray
OKPD-140097

Date 10/25/12



Oklahoma Department of Labor

FEE: 30.00

Arless Murray Jr

has filed in the office of the Commissioner of Labor of the State of Oklahoma an application for a Limited Asbestos Contractor's license for

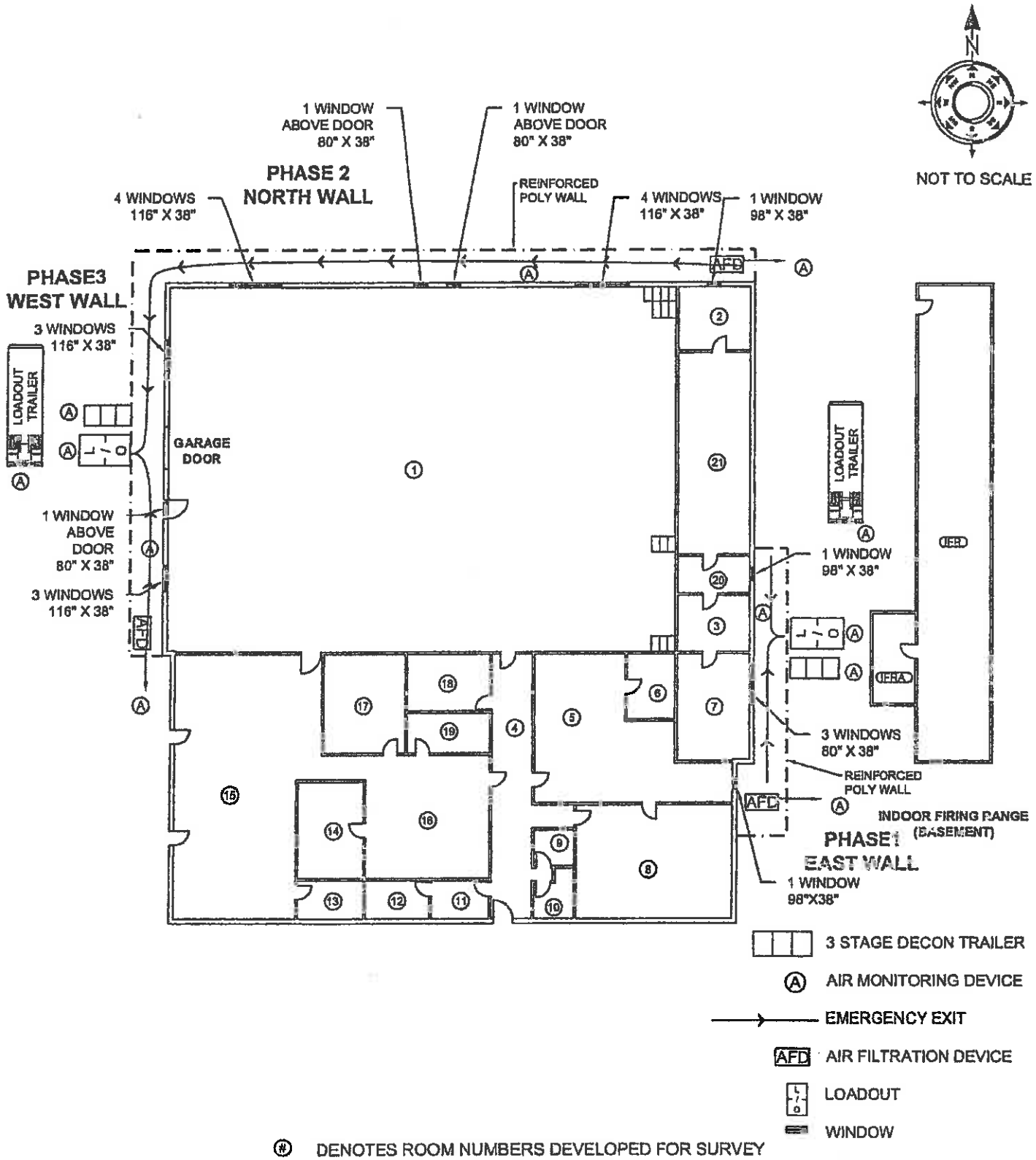
AHERA PROJECT DESIGNER

Now, therefore, The Commissioner of Labor of the State of Oklahoma, by virtue of the power vested in him by law hereby issues to the applicant license No. OK-PD1400[illegible].

Mark Costello

MARK COSTELLO
Commissioner of Labor

June 04, 2012



GMR
& Associates, Inc.
2520 West I-44 Service Road, Ste. 200
P.O Box 57827
Oklahoma City, OK 73157-7827
Phone: 405/528-7017, Fax: 405/528-3346

Figure 1
Asbestos Abatement Project Design
Weatherford Armory
223 W. Rainey Avenue
Weatherford, Oklahoma 73096

Appendix A

Laboratory Results and Chain of Custody Field Sheets

QUANTEM LABORATORIES

2033 Heritage Park Drive / Oklahoma City, OK 73120 / (405) 755-7272 / Fax (405) 755-2058

Polarized Light Microscopy Asbestos Analysis Report

QuanTEM Lab No. 205395
Account Number: B216

Client: GMR & Associates, Inc.
PO Box 57827
Oklahoma City, OK 73157

Date Received: 03/13/2012
Received By: Sherrie LeRwich
Date Analyzed: 03/17/2012
Analyzed By: Gayle Ooten
Methodology: EPA/600/R-93/116

Project: Weatherford Armory
Project Location: N/A
Project Number: 2012017

QuanTEM Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
001	WA-01A	Homogeneous	Gray Floor Tile	Asbestos Not Present	NA	Vinyl CaCO3
002	WA-02A	Homogeneous	Yellow Mastic	Asbestos Not Present	NA	Glue
003	WA-03A	Homogeneous	Tan Floor Tile	Asbestos Not Present	NA	Vinyl CaCO3
004	WA-04A	Homogeneous	Yellow Mastic	Asbestos Not Present	Cellulose <1	Glue
005	WA-05A	Homogeneous	Black Floor Tile	Asbestos Not Present	NA	Vinyl CaCO3
006	WA-06A	Homogeneous	Yellow Mastic	Asbestos Not Present	Cellulose <1	Glue
007	WA-07A	Homogeneous	White Sheetrock	Asbestos Not Present	Cellulose 20	Gypsum

Unless otherwise noted, upon receipt the condition of the sample was acceptable for analysis.

QUANTEM LABORATORIES

2033 Heritage Park Drive / Oklahoma City, OK 73120 / (405) 755-7272 / Fax (405) 755-2058

Polarized Light Microscopy Asbestos Analysis Report

QuanTEM Lab No. 205395
Account Number: B216
Date Received: 03/13/2012
Received By: Sherrie Leftwich
Date Analyzed: 03/17/2012
Analyzed By: Gayle Coten
Methodology: EPA/600/R-93/116

Client: GMR & Associates, Inc.
PO Box 57827
Oklahoma City, OK 73157

Project: Westherford Armory
Project Location: N/A
Project Number: 2012017

QuanTEM Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
008	WA-08A	Homogeneous	White Texture	Asbestos Not Present	NA	CaCO3 Paint
009	WA-08B	Homogeneous	White Texture	Asbestos Not Present	NA	CaCO3 Paint
010	WA-08C	Homogeneous	White Texture	Asbestos Not Present	NA	CaCO3 Paint
011	WA-09A	Homogeneous	Gray Window Glazing	Asbestos Present Chrysotile 2	NA	CaCO3 Binder
012	WA-10A	Homogeneous	White Ceiling Tile	Asbestos Not Present	Cellulose 30 Glass Fiber 30	Paint Perlite
013	WA-11A	Homogeneous	White Ceiling Tile	Asbestos Not Present	Cellulose 30 Glass Fiber 30	Paint Perlite
014	WA-12A	**	**	**	Not Analyzed	

No Sample Received

Unless otherwise noted, upon receipt the condition of the sample was acceptable for analysis.

2033 Heritage Park Drive / Oklahoma City, OK 73120 / (405) 755-7272 / Fax (405) 755-2058

Polarized Light Microscopy Asbestos Analysis Report

QuanTEM Lab No. 205395
Account Number: B216

Client: GMR & Associates, Inc.
PO Box 57827
Oklahoma City, OK 73157

Date Received: 03/13/2012
Received By: Sherrie Leftwich
Date Analyzed: 03/17/2012
Analyzed By: Gayle Ooten
Methodology: EPA/600/R-93/116

Project: Weatherford Armory
Project Location: N/A
Project Number: 2012017

QuanTEM Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous

Gayle Ooten, Analyst

3/17/2012
Date of Report

Unless otherwise noted, upon receipt the condition of the sample was acceptable for analysis.

QUANTEM LABORATORIES

Asbestos Chain-of-Custody

2033 Heritage Park Drive, Oklahoma City, OK 73120-7502
(800) 822-1650 (405) 755-7272 Fax: (405) 755-2058
www.quantem.com

Page 1 of 1

Lab No. 205395

Company Name: GMR + Associates, INC. Acct.#: 8

Project Location:

Project Name: Weatherford Armory

Project Number: 2012017

	Sample Number	To Be Analyzed	Color / Description	Volume / Area (if applicable)	Comments
1	WA - 01A		1x1 wh FT		
2	02A		mastic on 01A		685
3	03A		1x1 Brown FT		49,10
4	04A		mastic on 03A		900 SF
5	05A		9x9 Blk FT		13x16
6	06A		mastic 05A		530
7	07A		Glue on wall		Rm 81
8	08A		Texture on glue wall		
9	08B		" " "		Rm 910
10	08C		" " "		7' (1740 SF)
11	09A		window caulk		40 SF
12	10A		2x4 CT	metal roof w.	
13	11A		3x2 CT	(13x42) 69	205,770 480
*14	12A		Roofing material	40	

LEGAL DOCUMENT
Please Print Legibly

PLM
Bulk Analyzed
400 Point Count
1000 Point Count
Gravimetric Preparation
Other

PCM
NIOSH 7400
Other

TEM
Air - AHERA
Air - NIOSH 7402
Bulk - Qualitative (Yes / No) - EPA 600/R-93/116
Bulk - Quantitative (weight %) - Chatfield
Dust - Qualitative (Yes / No)
Dust - Quantitative (Microvac/wipe) - ASTM D5755
Drinking Water - EPA 100.2
Waste Water - EPA 600/4-83-043
Other

TURNAROUND TIME
Rush
Same Day
24 Hour
3-Day
X 5-Day

CONTACT INFORMATION
Name:
Phone:
Report Results VIA (CHOOSE ONE):
FAX:
X QuanTEM WebSite
E-Mail:

Relinquished by:	Date/Time	Received by:	Date/Time
Todd Haw...	03/13/12 1530	Skyfwick	3/13/12 3:30

* No Sample received .. SM

Saturday FedEx Shipping - CALL TO SCHEDULE
Use this address for Saturday FedEx only: 4220 N. Santa Fe Ave., Oklahoma City, OK 73105-8517

QUANTEM LABORATORIES

2033 Heritage Park Drive / Oklahoma City, OK 73120 / (405) 755-7272 / Fax (405) 755-2058

Polarized Light Microscopy Asbestos Analysis Report

QuanTEM Lab No. 205630
Account Number: B216
Date Received: 03/20/2012
Received By: Sherrie Leftwich
Date Analyzed: 03/20/2012
Analyzed By: Gayle Ooten
Methodology: EPA/600/R-93/116

Client: GMR & Associates, Inc.
PO Box 57827
Oklahoma City, OK 73157

Project: Weatherford Armory
Project Location: PT CT for 205395
Project Number: 2012017

QuanTEM Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
001	WA-09A	Homogeneous	Gray Window Glazing	Asbestos Present Chrysotile 1.75 400 Point Count	NA	CaCO3 Binder

Gayle Ooten, Analyst

3/20/2012
Date of Report

Unless otherwise noted, upon receipt the condition of the sample was acceptable for analysis.

QuanTEM is a NVLAP accredited TEM and PLM laboratory (Lab Code: 101959-0). This report relates only to the specific items tested. NVLAP accreditation applies only to analysis performed utilizing EPA/600/M4-82-020 and EPA/600/R-93/116 methods. This report may not be used to claim product endorsement by NVLAP or any other agency of the US Government. This report may not be reproduced except in full, without the written approval of the laboratory.

Asbestos Chain-of-Custody

QuanTEM Laboratories

2033 Heritage Park Drive, Oklahoma City, OK 73120-7902
(800) 822-1650 (405) 755-7272 Fax (405) 755-2058
www.quantem.com

Page 1 of 1

This Box for Lab Use Only
Lab No. 305395
Accept / Reject

Company Name: GMR + Associates, INC. Acct #: B
Project Location:
Project Name: Weatherford Armory
Project Number: 2012017

LEGAL DOCUMENT
Please Print Legibly

	Sample Number	To Be Analyzed	Color / Description	Volume / Area (If applicable)	Comments
1	WA - 01A		1x1 wh FT		
2	02A		mastic on 01A		685
3	03A		1x1 Brown FT		49,10
4	04A		mastic on 03A		900 SF
5	05A		9x9 Blk FT		13+16
6	06A		mastic 05A		530
7	07A		Sheetrock wall		Rm 81
8	08A		Texture on sheetrock		
9	08B		" " "		Rm 910
10	08C		" " "		7' (1740 SF)
11	09A		window Caulk		405 F
12	10A		2x4 CT	metal roof w. (13x42) 84	265,770 480
13	11A		2x2 CT	40	
*14	12A		Roofing material		

FLM
Asbestos
400 Point Count
1000 Point Count
Gravimetric Prep Point Count
Other

PCM
NIOSH 7400
Other

TEM
Air - AHERA
Air - NIOSH 7402
Bulk - Qualitative
Bulk - Quantitative
Dust - Qualitative
Dust - Quantitative
Drinking Water - EPA 100.2
Waste Water - EPA
Other

TURNAROUND TIME
- Rush
- Same Day
- 24 Hour
- 3-Day
- [x] 5-Day

CONTACT INFORMATION
Name:
Phone:
Report Results VIA (CHOOSE ONE):
- FAX
- [x] QuanTEM WebSite
- E-Mail

Relinquished By: Bill Harris 03/13/12 1530
Received By: S. Jewick 3/13/12 3:30

* No sample received. SM

Saturday FedEx Shipping - CALL TO SCHEDULE
Use this address for Saturday FedEx only: 4220 N. Santa Fe Ave., Oklahoma City, OK 73105-8517

Project Design Review Form

Oklahoma Department of Labor
Asbestos Division
3017 N. Stiles, Oklahoma City, OK 73105
Phone – (405)521-6484 Fax – (405)521-6025

Project Name: Weatherford Armory
Project No: 12-7308 Date: 11/01/2012
Project Designer: Arless Murray

Approved: X
Disapproved: _____

	ITEM	ACCEPTED	REJECTED	COMMENTS
1.	A statement that DOL Abatement of Friable Materials Rules apply.	X		Asbestos statutes and Abatement of Friable Asbestos Materials Rules, (OAC 380:50) State of Oklahoma Department of Labor, Asbestos Division.
2.	Sequencing and phasing of work.	X		Three Phases.
3.	Identification of means of egress and a fire protection plan and a diagram for emergency escape routes, and fire extinguisher placements.	X		Two emergency exits, must have battery backed up lighting. 10:ABC fire extinguishers.
4.	The quantity, type, percentage with bulk analysis unless presumed and a diagramed location of asbestos materials to be abated.	X		23 windows will be removed. The windows have caulking that contain 2% chrysotile asbestos. Windows are located on the east, north and west side of building.
5.	Abatement methods, and techniques, and numbers of containments, glove bags or mini-containments.	X		Windows will be removed, HEPA vacuumed, then wrapped with two layers of 6-mil reinforced poly. Lock down is required for abated surfaces.
6.	Details of personal and area air monitoring samples.	X		2/25% personal monitors. Five area monitors.
7.	Numbers and locations of Clean Test samples and type of analysis to be employed.	X		5 PCM Clearance samples will be ran in each area per OAC 380:50-11-2
8.	Numbers, capacities, a diagram to identify locations, and discharge points, if any, of negative air machines.	X		One 2000 CFM negative air machine, externally exhausted, will provide six air changes per hour.
9.	Details of project containment(s), glove bag or mini-containments, including drawings. Details shall include all applicable subchapters, including but not limited to scaffolding and live electric isolation.	X		Nylon reinforced poly critical barriers and drop cloths. Floors must extend a minimum of ten feet from the wall. Walls will be attached to the roof and/or supported by a wooden frame as needed.
10.	Details of decontamination system(s).	X		Three stage attached decontamination unit with a negative air flow from the clean room through the shower to the dirty room.
11.	The extent to which asbestos-contaminated soils, if any, must be removed and the sampling methods of determining the efficacy of such removal.	X		No soils involved.
12.	Special materials or methods required to protect objects in the work area should be detailed, (plywood over carpeting or hardwood floors to prevent damage from scaffolds and/or falling materials.	X		No special materials/methods required.
13.	Any variances from the Abatement of Friable Asbestos Materials Rules.	X		No variances requested.

The Department of Labor reserves the right to require additional engineering or environmental controls consistent with the Abatement of Friable Asbestos Materials Rules which may be necessary because of discrepancies between this Project Design and field conditions or from unanticipated changes in field conditions.

REVIEWED BY: _____ DATE: 11-6-12

REVIEWED BY: _____ DATE: 11/6/12

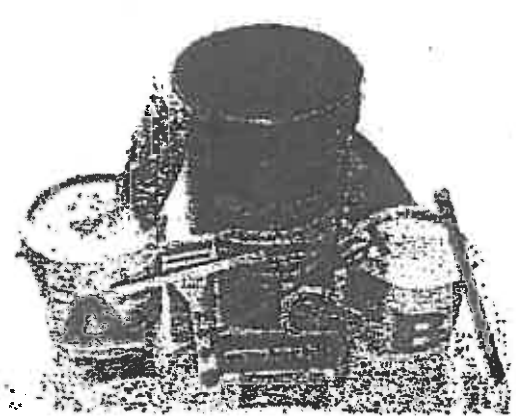
P. 2 No. 8380 Nov. 7. 2012 8:50AM

ATTACHMENT 5

DEQ Approved Lead-Based Paint Encapsulants and Sealant Specifications

Lead-Based Paint Encapsulants

Encapsulant Manufacturer	Encapsulant Product(s)
Coronado Paint Company	LEAD BLOCK™
Dumond Chemicals	LEAD STOP™
Dynacraft Industries, Inc.	Back to Nature Protect-A-Coat
Encap Systems Corporation	EncapSeal™ I
Encap Systems Corporation	EncapSeal™ II
Fiberlock Technologies, Inc.	Child GUARD interior/exterior
Fiberlock Technologies, Inc.	L-B-C® Type III
Global Encasement, Inc.	LeadLock™
Grace Construction Products	Lead Seal®
Grace Construction Products	Barrier Coat® II
Insl-x Products Corporation	INSL-CAP™
SAFE Encasement Systems	SE-120 Protective Skin
Specification Chemicals, Inc.	NU-WAL® #2500 Coating



Epoxy-Coat 3 Gallon Interior High Gloss [redacted] Garage Floor Coating Kit

Item #: 373342 | Model #: SK-0000

Be the first to [redacted]

Description

3-Gallon Interior High Gloss [redacted] Garage Floor Coating Kit

- Commercial/Industrial grade
- 100% solids
- Over 30 years experience with automotive, industrial, commercial and government customers
- After-hours, live technical support
- Over 3 times stronger than concrete
- 10.3 times more durable than water-based epoxies
- 4.8 times thicker than water-based epoxies
- Self-leveling

Specifications

Warranty	Lifetime	Combustible	No
Sheen/Finish	High Gloss	Waterproof	Yes
Paint Color	[redacted]	Number of Coats Recommended	1.0
Unit of Measure	Gallon (s)	Soap and water clean-up	No
Unit of Measure Quantity	3.0	Low-odor formula	Yes
Coverage (Sq. Feet)	500.0	Mildew-resistant finish	Yes
Base Material	Epoxy	Scrubbable and washable finish	Yes
Color Family	[redacted]	Stain-Resistant	Yes
Where to Use	Interior	Fade-Resistant	Yes
Tintable	[redacted]	UV-resistant	Yes
Primer Recommended	No	Type	Other
Dry To Touch	18 Hours	Paint and Primer in One	Yes
Flammable	No		

KELLY-MOORE PAINTS

INDUSTRIAL COATINGS

HIGH PERFORMANCE SYSTEMS

KM-669

Acrylic Sealer

THIS PRODUCT MAY NOT BE AVAILABLE IN SOME AREAS DUE TO VOC REGULATIONS
Contact your Kelly-Moore representative for more information

Product Description
A one component, solvent borne, high gloss, clear acrylic sealer designed for use on concrete, masonry, and brick. Dustproofs concrete by penetrating surface pores leaving a tough, durable film.

Performance Features

- Non-Yellowing
- Excellent Adhesion to Concrete
- Good Water & Salt Chemical Resistance
- Good Abrasion Resistance
- Can be Sprayed, Padded or Rolled

Product Specifications

Resin Type	Acrylic
Color Range	Clear
Finish	High Gloss
Drying Time	8 hours to recoat
Practical Coverage	250-450 Sq. Ft. / Gallon
Recommended Dry Film Thickness	1.2 - 2.2 mils per coat
Solids By Volume	35%
Sizes	Five gallon pails
V.O.C.	560 Grams per liter
Clean Up	KM-S-74 or KM-SA-50

Surface Preparation

WARNING! If you scrape, sand or remove old paint from any surface, you may release lead dust. LEAD IS TOXIC. EXPOSURE TO LEAD DUST CAN CAUSE SERIOUS ILLNESS, SUCH AS BRAIN DAMAGE, ESPECIALLY IN CHILDREN. PREGNANT WOMEN SHOULD ALSO AVOID EXPOSURE. Wear a NIOSH-approved respirator to control lead exposure. Carefully clean up with a wet mop or HEPA vacuum. Before you start, find out how to protect yourself and your family by contacting the U.S. EPA/Lead Information Hotline at 1-800-424-LEAD (5323) or log on to www.epa.gov/lead.

Surface Preparation:
Remove all dirt, grease, oil, soil, chemical contaminants, and other matter. Allow surface to dry.

Application Procedure:
When mixing, use an EXPLOSION PROOF SLOW SPEED DRILL WITH A JIFFY MIXER. Apply a uniform wet film, do not puddle material. Do not cover more area than can be worked in 10 minutes due to fast dry time. When spraying, use a low pressure machine. Two coats may be necessary depending on porosity or type of service.

For safety and product curing, proper ventilation is necessary throughout application and cure.

Dry Times: 8 hours

See Precautions and Limited Warranty next page

KM-669 (cont.)

Precautions
KM-669 is Flammable. KM-669 contains flammable solvents. Keep away from all sources of ignition during mixing, application, and cure. In confined areas, provide adequate forced air ventilation. The use of goggles, fresh air masks or NIOSH approved respirators, protective skin cream and protective clothing is a recommended standard practice when spraying coatings

Proper Disposal
For proper disposal of excess material, please contact your local city or county waste management agency.

Limited Warranty: The statements made on this bulletin, product labels or by any of our agents concerning this material are given for information only. They are believed to be true and accurate and are intended to provide a guide to approved construction practices and materials. As workmanship, weather, construction equipment, quality of other materials and other variables affecting results are all beyond our control, Kelly-Moore Paint Company, Inc., does not make nor does it authorize any agent or representative to make any warranty of MERCHANTABILITY OR FITNESS for any purpose or any other warranty, guarantee or representation, expressed or implied, concerning this material except that it conforms to Kelly-Moore's quality control standards. Any liability whatsoever of Kelly-Moore Paint Company, Inc. to the buyer or user of this product is limited to the purchaser's cost of the product itself.

SEE MATERIAL SAFETY DATA SHEETS FOR FULL SAFETY PRECAUTIONS.

KM-669 IS FOR PROFESSIONAL USE ONLY

KM-669 IS FOR INDUSTRIAL USE ONLY

KEEP AWAY FROM CHILDREN

MATERIAL SAFETY DATA SHEET

For Coatings, Resins & Related Materials

Section I

Manufactured For: Kelly-Moore Paints
Address: 987 Commercial Street
San Carlos, CA 94070

Prep Date: 07/28/06

Emergencies Involving Spills, Leaks, Fires, Exposure, Or Accident Contact Chemtrec: 1-800-424-9300

Product Class: Acrylic Lacquer Sealer
Trade Name: KM-669 CLEAR
H.M.I.S. Codes: H F R P
2* 3 0 -

Information Phone: 1-888-677-2468

Section II - HAZARDOUS INGREDIENTS

Ingredient	C.A.S.#	Weight Percent	Occupt. Exposure Limits OSHA PEL	ACGIH TLV	Vapor Pressure mm Hg & Temp.F	
Acrylic Resins	Mixture	30-40	Not Established		Not Determined	
*Xylene	1330-20-7	40-50	100 ppm	100 ppm	5.1	68
*Ethyl Benzene	100-41-4	15-20	100 ppm	100 ppm	7.1	68

*Indicates toxic chemical(s) subject to reporting requirements of Section 313 of Title III and of 40 CFR 372.

Section III - PHYSICAL DATA

Boiling Range (Deg. F): 240*
Evaporation Rate: Slower than Ether
Percent Volatile By Volume: 70 ± 3%

Vapor Density: Heavier than air

Weight Per Gallon (lbs.): 7.75 ± .25

Section IV - FIRE & EXPLOSION HAZARD DATA

Flash Point (Deg. F): 80*

Lower Explosive Limit: 1.0

Extinguishing Media: Foam, alcohol foam, CO2, dry chemical, water spray

OSHA Flammability Classification: Flammable Liquid IC

Special Firefighting Procedures: Wear a NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing. Use water to keep fire exposed containers cool. Water may be ineffective as an extinguishing agent.

Unusual Fire & Explosion Hazards: Vapors are heavier than air and may travel along the ground or be moved by ventilation to ignition sources at locations distant from material handling point. Pressure may build up in containers and create an explosion hazard.

KM-669 CLEAR

Section V - HEALTH HAZARD DATA

THIS PRODUCT IS FLAMMABLE

Effects Of Overexposure:
Eyes: Irritation, burning, tearing and redness.
Skin: Moderate irritation or defatting of skin upon prolonged or repeated contact.
Ingestion: Abdominal pain, nausea, vomiting and diarrhea.
Inhalation: Excessive exposure to vapors can cause headache, dizziness, uncoordination, nausea and loss of consciousness.

Emergency & First Aid Procedures:
Eyes: Flush with water for 15 minutes.
Skin: Remove contaminated clothing, wash skin with soap and water.
Ingestion: Do not induce vomiting. Get medical attention immediately.
Inhalation: Move to fresh air, aid breathing if necessary.

In all cases, consult a physician for best treatment.

Chemical listed as carcinogen or potential carcinogen:
NTP: No IARC: No OSHA: No

Section VI - REACTIVITY DATA

Stability: Product Stable
Conditions to Avoid: All sources of ignition
Incompatibility (Materials to Avoid): Oxidizing agents, strong acids & bases
Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, nitrogen oxides and organic compounds.
Hazardous Polymerization: Will Not Occur

Section VII - SPILL OR LEAK PROCEDURES

Steps To Be Taken In Case Material Is Released Or Spilled: Dike spill area. Absorb spill with inert absorbent material. Place in sealed metal containers for proper disposal.

Waste Disposal Method: Dispose of in accordance with local, state and federal regulations.

Section VIII - SPECIAL PROTECTION INFORMATION

Respiratory Protection: Use a NIOSH/MSHA jointly approved respirator
Ventilation: Use mechanical ventilation
Protective Gloves: Neoprene or rubber
Eye Protection: Chemical splash goggles
Other Protective Equipment: Protective clothing, barrier cream, eye bath, safety shower

Section IX - SPECIAL PRECAUTIONS

Precautions To Be Taken In Handling & Storing: Store in dry area. Keep away from open flames and high temperatures.
Other Precautions: Minimize contact. Avoid breathing vapors. Practice good industrial hygiene and safe working practices.

State and Local Regulations
California Proposition 65
This product contains the following substances known to the State of California to cause cancer, birth defects or other reproductive hazards: Benzene, Toluene.

ATTACHMENT 6

Door Scope of Work Including Measurements and Specifications

Weatherford Armory Door Measurements
And
Scope of Work

- **Door measurements are listed as approximate Width X Height; Contractor to field verify.**
- **All removed doors will be properly disposed.**
- **All removed lead-based paint will be properly disposed.**
- **Attached is a Weatherford armory Floor Plan with designated door numbers that correspond with the numbers on this Scope of Work.**
- **Specifications for replacement doors are attached.**

1. Remove door. Remove all paint from door frame. Install replacement door equipped with continuous gear hinges. Original frame will be painted with a neutral colored primer.
   Door Measurements – 3' X 7'

2. Remove door. Remove all paint from door frame. Install replacement door equipped with continuous geared hinges. Original frame will be painted with a neutral colored primer.
   Door Measurements – 2'4" X 7'

3. Remove door. Remove all paint from door frame. Install replacement door equipped with continuous geared hinges. Original frame will be painted with a neutral colored primer.
   Door Measurements – 2'4" X 7'

4. Remove door. Remove all paint from door frame. Install replacement door equipped with continuous geared hinges. Original frame will be painted with a neutral colored primer.
   Door Measurements – 3' X 7'

5. Remove door. Remove all paint from door frame. Install replacement door equipped with continuous geared hinges. Original frame will be painted with a neutral colored primer.
   Door Measurements – 4' X 7'

6. Remove door. Remove all paint from door frame. Install replacement door equipped with continuous geared hinges. Original frame will be painted with a neutral colored primer.
   Door Measurements – 3' X 7'

7. Remove double doors. Remove all paint from door frame. Install replacement doors equipped with continuous geared hinges. Original frame will be painted with a neutral colored primer.
   Double Door Measurements – 6' X 6'11.5"

8. Remove all paint from door frame. Once paint is removed, paint frame with neutral colored primer.

9. Remove all paint from door frame. Once paint is removed, paint frame with neutral colored primer.

10. Remove door. Remove all paint from door frame. Install replacement door equipped with continuous geared hinges. Original frame will be painted with a neutral colored primer.
    Door Measurements – 3' X 7'

11. Remove door. Remove all paint from door frame. Install replacement door equipped with continuous geared hinges. Original frame will be painted with a neutral colored primer.
    Door Measurements – 2'8" X 7'

12. Remove door. Remove all paint from door frame. Install replacement door equipped with continuous geared hinges. Original frame will be painted with a neutral colored primer.
    Door Measurements – 4' X 7'

13. Remove all paint from vault door and frame. Door and frame will be painted with a neutral colored primer.

14. Remove all paint from door frame. Once paint is removed, paint frame with neutral colored primer.

15. Remove all paint from door frame. Once paint is removed, paint frame with neutral colored primer.

16. Remove all paint from door frame. Once paint is removed, paint frame with neutral colored primer.

17. Remove door. Remove all paint from door frame. Install replacement door equipped with continuous geared hinges. Original frame will be painted with a neutral colored primer.
    Door Measurements – 3' X 7'

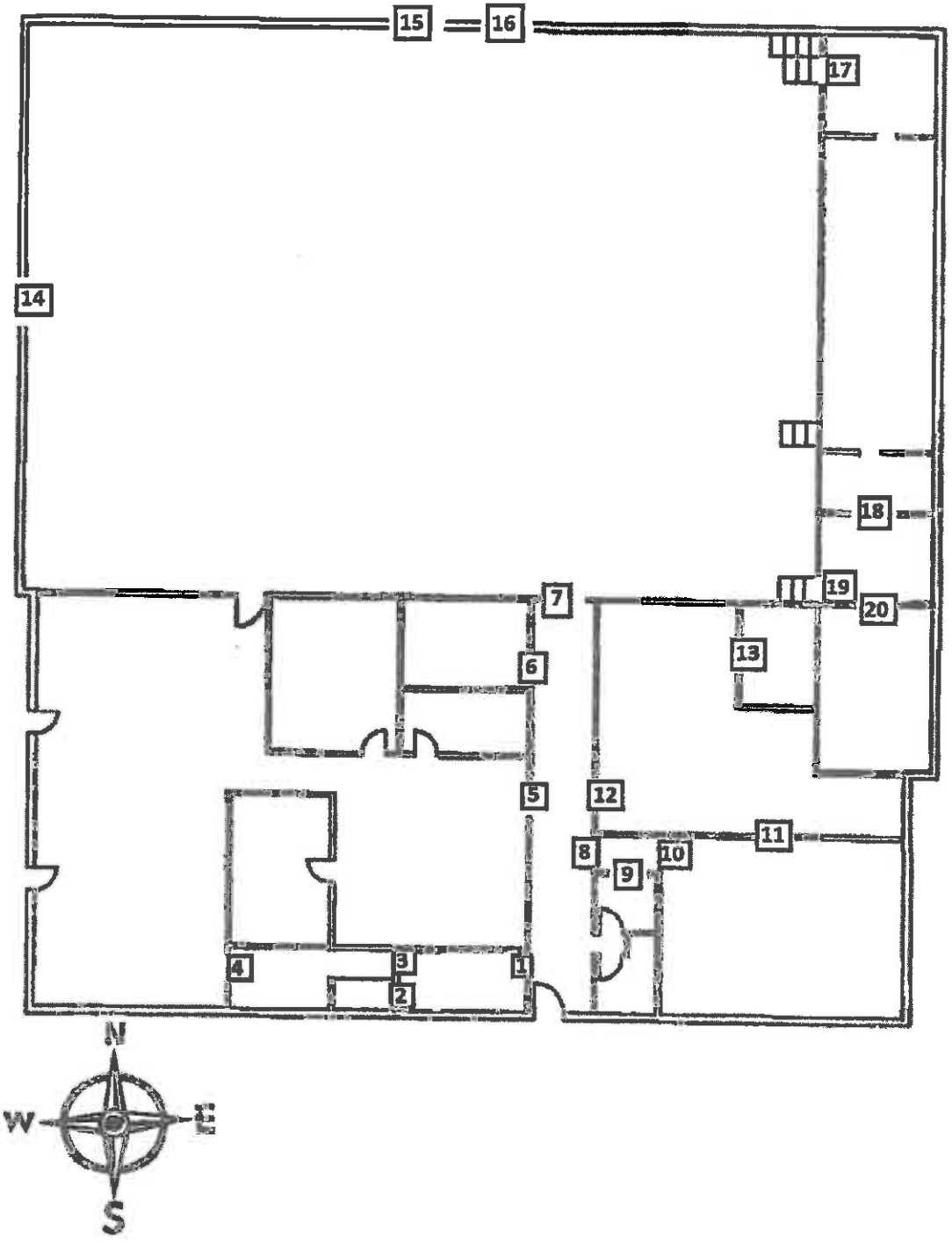
18. Remove all paint from door frame. Once paint is removed, paint frame with neutral colored primer.

19. Remove door. Remove all paint from door frame. Install replacement door equipped with continuous geared hinges. Original frame will be painted with a neutral colored primer.
    Door Measurements – 3' X 7'

20. Remove door. Remove all paint from door frame. Install replacement door equipped with continuous geared hinges. Original frame will be painted with a neutral colored primer.
    Door Measurements – 3' X 7'

Weatherford Armory

Door Location Map



SECTION 07920 - JOINT SEALANTS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data.

B. Warranty: Warranty materials and workmanship of sealing against leaks, adhesion, and cohesive failure for a period of two years from the date of substantial completion.

C. References:

1. American Society for Testing and Materials
   a) ASTM C790 – Recommended practices for use of latex sealing compounds.
   b) ASTM C920 – Elastomer Joint Sealants.
2. Federal Specifications
   a) FS TT-S-00230C (2), Sealing Compound, Elastomeric Type, Single Component (for caulking, sealing and glazing in buildings and other structures).
   b) FS TT-S-00227E (3), Sealing Compound, Elastomeric Type, Multi-component (for caulking, sealing and glazing in buildings and other structures).

PART 2 - PRODUCTS

2.1 JOINT SEALANTS

A. Compatibility: Provide joint sealants, joint fillers, and other related materials that have been tested and found compatible with one another and with joint substrates under service and application conditions.

B. Interior Sealant: Provide ASTM C 834. If no color is specified, use Gray. Location(s) of sealant for the following:
1. Small voids between walls or partitions and adjacent door frames, and similar items.
2. Perimeter of frames at doors, windows, and access panels which adjoin exposed interior concrete and masonry surfaces.

C. Exterior Sealant: Provide ASTM C 920, polyurethane or polysulfide, Type M, Grade NS, Class 25, Shore A hardness of 20-40. If no color is specified, use Gray. Location(s) of sealant for the following:
1. Joints and recesses formed where frames and vents adjoin masonry, concrete, or metal frames. Use sealant at both exterior and interior surfaces of exterior wall penetrations. Color to match adjacent surface.

2.2 ACCESSORIES

A. Primers: Provide a nonstaining, quick-drying type and consistency recommended by the sealant manufacturer for the particular application.

B. Bond Breakers: Provide the type and consistency recommended by the sealant manufacturer to prevent adhesion of the sealant to backing or to bottom of the joint.

C. Cleaning Solvents: Provide type(s) recommended by the sealant manufacturer, except for aluminum and bronze surfaces that will be in contact with sealant.

PART 3 - EXECUTION

3.1 PREPARATION

A. Clean surfaces from dirt frost, moisture, grease, oil, wax, lacquer, paint, or other foreign matter that would tend to destroy or impair adhesion. Remove oil and grease with solvent. Surfaces must be wiped dry with clean cloths. When resealing an existing joint, remove existing calk or sealant prior to applying new sealant. For surface types not listed below, contact sealant manufacturer for specific recommendations.
1. Steel Surfaces: Remove loose mill scale by sandblasting or, if sandblasting is impractical or would damage finish work, scraping and wire brushing. Remove protective coatings by sandblasting or using a residue-free solvent.
2. Aluminum or Bronze Surfaces: Remove temporary protective coatings from surfaces that will be in contact with sealant. When masking tape is used as a protective coating, remove tape and any residual adhesive just prior to sealant application. For removing protective coatings and final cleaning, use nonstaining solvents recommended by the manufacturer of the item(s) containing aluminum or bronze surfaces.
3. Concrete and Masonry Surfaces: Where surfaces have been treated with curing compounds, oil, or other such materials, remove materials by sandblasting or wire brushing. Laitance, remove efflorescence and loose mortar from the joint cavity.

4. Wood Surfaces: Keep wood surfaces to be in contact with sealants free of splinters and sawdust or other loose particles.

B. Do not add liquids, solvents, or powders to the sealant. Mix multi-component elastomeric sealants in accordance with manufacturer's instructions.

3.2 INSTALLATION

A. Joint Width-to-Depth Ratios: Install per manufacturer's recommendation or as described below, whichever is more stringent.

1. Acceptable Ratios:

	Minimum	Maximum
a) For metal, glass, or other nonporous surfaces:		
(1) 1/4 inch (6 mm) (minimum)	1/4 inch (6 mm)	1/4 inch (6 mm)
(2) Over 1/4 inch (6 mm)	1/2 of width	Equal to width
b) For wood, concrete, masonry, or stone:		
(1) 1/4 inch (6 mm) (minimum)	1/4 inch (6 mm)	1/4 inch (6 mm)
(2) Over 1/4 inch(6 mm) to 1/2 inch (13 mm)	1/4 inch (6 mm)	Equal to width
(3) Over 1/2 inch (13 mm) to 2 inch (50 mm)	1/2 inch (50 mm)	5/8 inch (16 mm)
(4) Over 2 inch (50 mm)	(As recommended by sealant mfr.)	

2. Unacceptable Ratios: Where joints of acceptable width-to-depth ratios have not been provided, clean out joints to acceptable depths and grind or cut to acceptable widths without damage to the adjoining work. Grinding is not required on metal surfaces.

B. Masking Tape: Place masking tape on the finish surface on one or both sides of a joint cavity to protect adjacent finish surfaces from primer or sealant smears. Remove masking tape within 10 minutes after joint has been filled and tooled.

C. Immediately prime prior to application of the sealant, clean out loose particles from joints. Where recommended by sealant manufacturer, apply primer to joints in concrete masonry units, wood, and other porous surfaces in accordance with sealant manufacturer's instructions. Do not apply primer to exposed finish surfaces.

D. Provide bond breakers to the back or bottom of joint cavities, as recommended by the sealant manufacturer for each type of joint and sealant used, to prevent sealant from adhering to these surfaces. Carefully apply the bond breaker to avoid contamination of adjoining surfaces or breaking bond with surfaces other than those covered by the bond breaker.

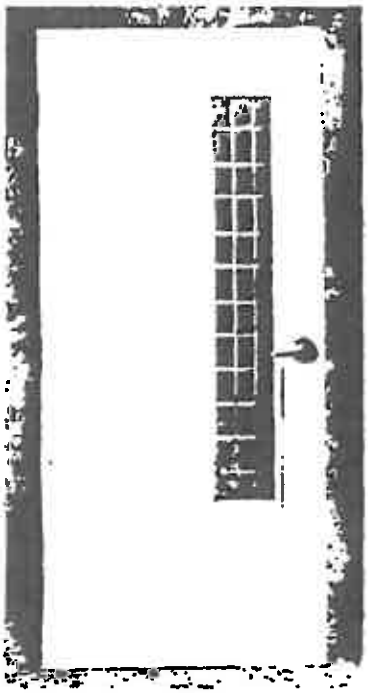
E. Provide a sealant compatible with the material(s) to which it is applied. Do not use a sealant that has exceeded shelf life or has jelled and can not be discharged in a continuous flow from the gun. Apply the sealant in accordance with the manufacturer's printed instructions with a gun having a nozzle that fits the joint width. Force sealant into joints to fill the joints solidly without air pockets. Tool sealant after application to ensure adhesion. Make sealant uniformly smooth and free of wrinkles. Upon completion of sealant application, roughen partially filled or unfilled joints, apply sealant, and tool smooth as specified. Apply sealer over the sealant when and as specified by the sealant manufacturer.

F. Thresholds: Place double band of sealant under and along all sides of all exterior thresholds.

END OF SECTION 07920

STEELCRAFT

L18 AND L16-SERIES HONEYCOMB DOORS



FEATURES AND BENEFITS:

Steelcraft's L-Series Doors offer the following standard unique features, which enhance long term performance and durability.

1. **Honeycomb core system** enhances the structural integrity of the door, while significantly reducing the weight.
2. **Full height, epoxy filled mechanical interlock edges** provide structural support and stability the full height of the door edges.
3. **Patented universal hinge preparations** allow for easy field conversion from standard weight (.134) hinges to heavy weight (.180) hinges.
4. **14 gage top and bottom channels** provide stability and protection for the top and bottom edges from abuse.
5. **Beveled hinge and lock edges** allow for tighter installation tolerances, ensure easier operation, and eliminate binding and sticking.
6. **Recessed Dezigner™ glass trim** provide a clean, neat, and flush finish with the door surface.
7. **Factory applied baked on rust inhibiting primer** in accordance with ANSI A250.10.

ABOUT THE PRODUCT:

The L18 and L16-Series Flush Doors are designed to meet the architectural requirements for full flush doors. This premium door construction combines the strength and dimensional stability of steel with the structural integrity of the honeycomb core. The continuous bonding of core to metal provides an attractive flat door, free of face welding marks. Tests have proven that the L-Series door has integral high resistance to impact damage, low thermal conductivity, and high STC ratings.

To meet application, specification and performance requirements, the L-Series doors offer a wide range of specifiable options including sizes, glass lite designs, hardware (mechanical, pneumatic, electrical) preparations and edge constructions.

SPECIFICATION COMPLIANCE:

1. Door construction for the Steelcraft L18 and L16-Series Full Flush Doors meet the requirements of ANSI A250.8-1998 (commonly referred to as SDI-100)
2. Hardware preparations and reinforcements are in accordance with ANSI A250.6-1997. Locations are in accordance with ANSI/DHI A115.

FIRE RATINGS:

The L-Series doors meet the broadest fire rating requirements. They are listed for installations requiring compliance to both negative pressure testing (ASTM E152 and UL-10B) and positive pressure standards (UBC 7-2 and UL-10C)

Steel Thickness	Opening	Usage Frequency[1]	Frame Applications
16 gage (1.3mm)	Interior & Exterior	Extra-heavy duty	• 16 & 14 gage steel frames
18 gage (1mm)	Interior & Exterior	Heavy duty	• 16 gage steel frames
Steel Type	**Opening**	**Building Applications**	
Non Galvannealed[3]	Mainly Interior	• Typical building conditions	
Galvannealed[2]	Mainly Exterior	• Used in locations with high humidity and/or weather exposure	

MATERIAL:

Depending on environmental conditions, exterior doors are generally galvannealed and interior doors non galvanneal. All doors are supplied with a factory applied baked on primer for field applied finish paints.

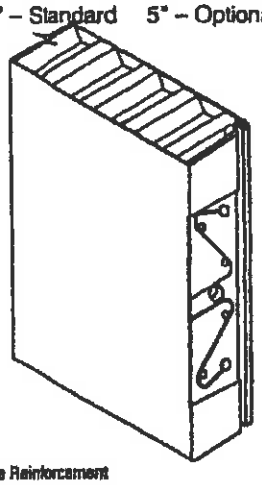
[1] Usage frequency is based on ANSI A250.8-1998
[2] Reinforcements for galvannealed doors are also galvannealed
[3] Commercial quality carbon steel

OCT 24 2003

Security & Safety

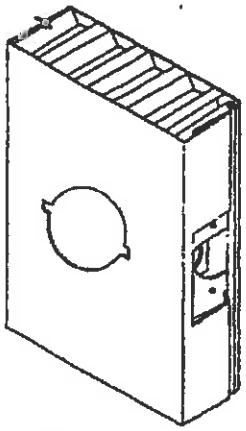
Details are subject to change without prior notice.

Universal Mortise Hinge Prep
4½" – Standard 5" – Optional



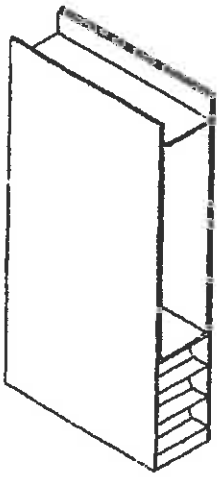
7 Gage Hinge Reinforcement

Lock Prep

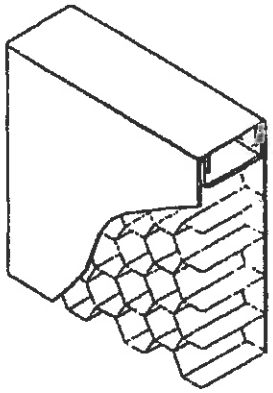


161 Cylindrical Lock shown

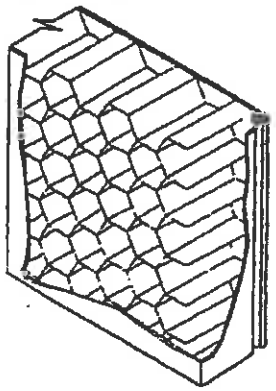
Optional 14 Gage Closer Reinforcement



Optional Snap-in Top Cap



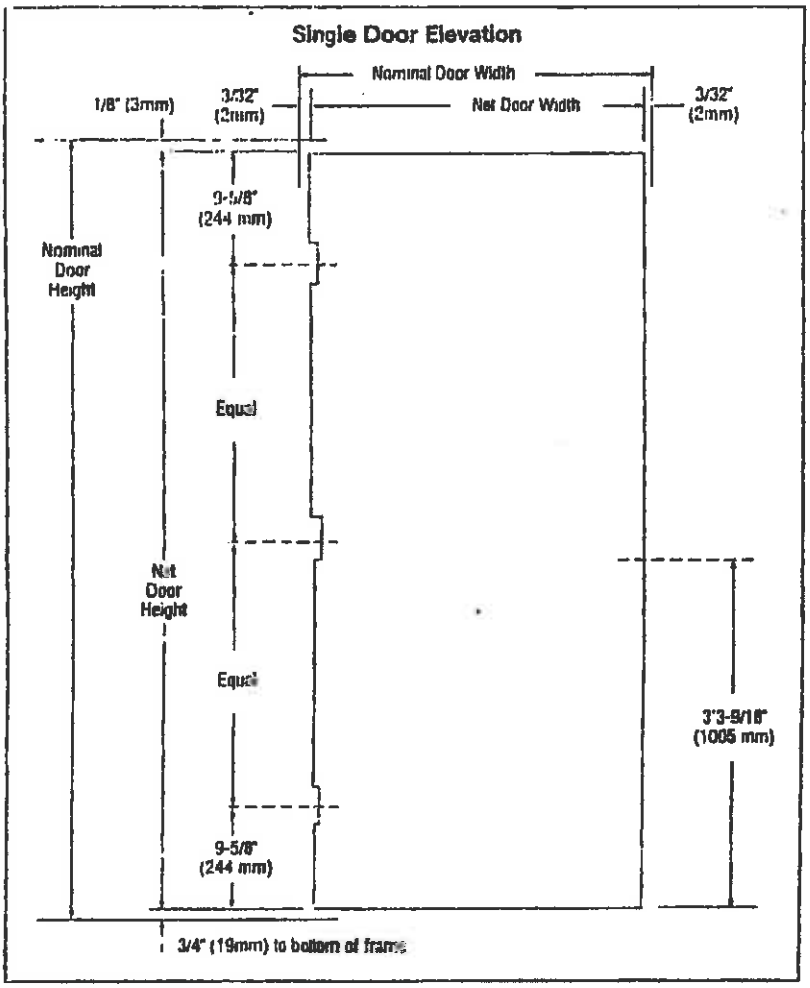
Rigid Honeycomb Core



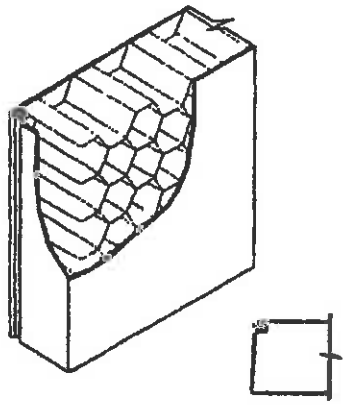
GENERAL NOTES:

1. **Edge construction:**
   - Vertical edges (both hinge and lock) are beveled with a visible seam.
   - Top and bottom edges are closed with inverted 14 gage welded channels. Exterior applications require the addition of snap-in top caps to protect against the weather.
2. **Optional edge seams** available in the L-Series door construction are as follows:
   - LF – The mechanical edge seam is filled and finished prior to applying the factory primer.
   - LW – The mechanical edge seam is welded and finished prior to applying the factory primer.
3. **Optional cores** available in the L-Series door construction:
   - **Polystyrene** for exterior applications in extreme weather conditions.
   - **Polyurethane** for exterior applications in arctic weather conditions. Not Fire Rated.
4. **Standard hardware preparations:** standard mortised and reinforced for:
   - **Universal hinge preps** – 4½"(114mm) patented preparation which allows easy and quick field conversion from standard to heavy weight hinges.
   - **Locks** – A multitude of standard lock preps are available. The most commonly used with a 4⅞" (124mm) strike are 161, 61L and 86.

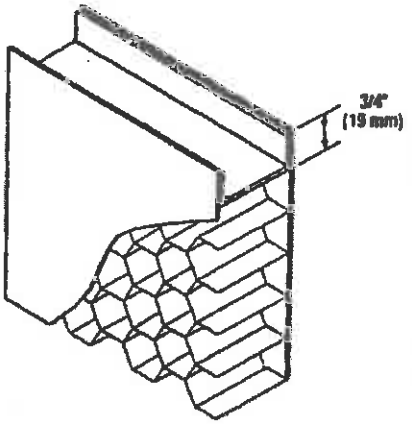
Single Door Elevation



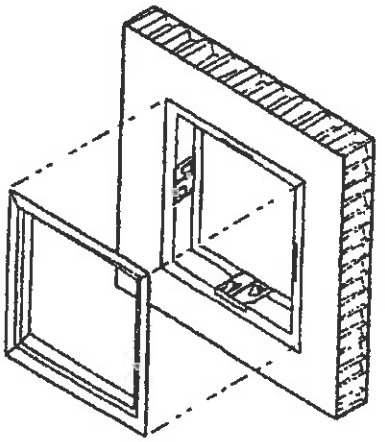
Beveled Edge with Full Height Mechanical Interlock



Inverted Top & Bottom Channels 14 Gage



Dezigner Trim Option
¼" – Standard ½" – Optional



CONSTRUCTION NOTES:

1. **Doors** are 1¾" (45mm) thick.
2. **Door opening size maximum:**
   Single door opening size 4'0" x 10'0" (1219mm x 3048mm)
   Double door opening size 8'0" x 10'0" (2438mm x 3048mm)
3. **Standard operating clearances** *(installed in frame)*:
   Head = ⅛" (3mm) to bottom of head or transom panel
   Hinge and lock side = 3/32" (2mm) to rabbet on jamb
4. **Standard core system:**
   1" (25mm) cell Kraft honeycomb core is laminated to both face sheets with contact adhesive. The honeycomb is phenolic resin impregnated and sanded to insure ultimate lamination and performance. To further enhance the structural stability of the door the honeycomb core material is subjected to several unique operations prior to assembly. If any of these operations are eliminated, the strength and durability of the door is compromised.
5. **Hardware preparations:** to meet specifications, doors can be prepared for all commercial mortised hardware, and can be factory reinforced for surface applied hardware applications.
   - **Lock preps** – details and dimensions shown are for cylindrical (ANSI 115.2) type locks. For mortise (ANSI A115.1) locks, the centerline of the lock is located ⅜" (9mm) lower.
6. **Glass lites with Dezigner® trim and louvers:** doors with glazed cutouts and doors with louvers are available (see *Lites and Louvers* section of *Spec Manual*).

INSTALLATION:

1. Installation shall conform to the published Steelcraft installation instructions, SDI 105 *Recommended Installation Instructions for Steel Frames*, and ANSI/DHI A115-IG *Installation Guide for Doors and Hardware*.
2. Fire Rated Assemblies must be in accordance with NFPA Pamphlet 80. The *Authority Having Jurisdiction* is the final authority in issues related to the installation and use of installed Fire Rated Doors.

DOOR EDGE APPLICATIONS:

The L-Series Doors are used in virtually all buildings and construction applications. The application and functionality dictate the door edge construction specified.

Edge	Usage	Application
L	Heavy & Extra-heavy duty	High traffic in all commercial applications
LF	Heavy & Extra-heavy duty	High traffic, in sanitation conditions
LW	Heavy & Extra-heavy duty	High traffic, in sanitation and high abuse conditions

CONVERSION CHART

ANSI A250.8 (SDI 100) *Recommended Specification for Standard Steel Doors and Frames.*

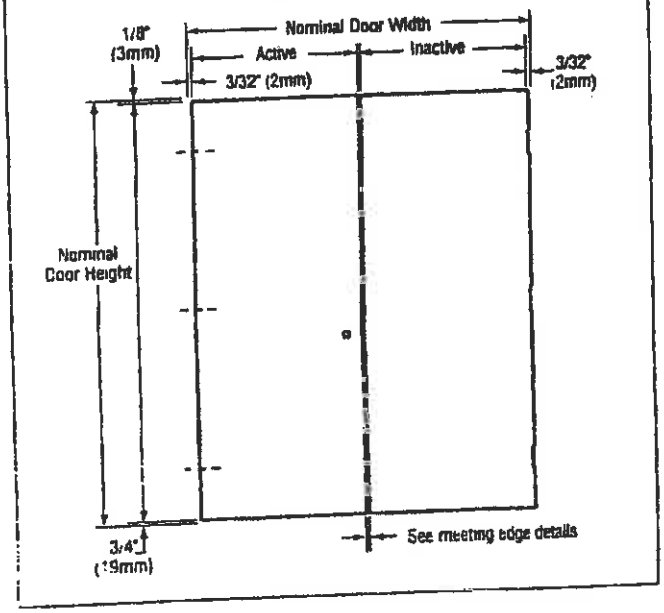
Series	Level	Model	Description	Edge Construction
L18	2	1	Full Flush	Full height, visible mechanical interlocked edge
LF18	2	2	Seamless	L-Series with epoxy filled edge seams
LW18	2	2	Seamless	L-Series with welded edge seams
L16	3	1	Full Flush	Full height, visible mechanical interlocked edge
LF16	3	2	Seamless	L-Series with epoxy filled edge seams
LW16	3	2	Seamless	L-Series with welded edge seams

DOUBLE DOOR APPLICATIONS:

L-Series doors are available in double door elevations, with active and inactive leaves and an overlapping astragal.

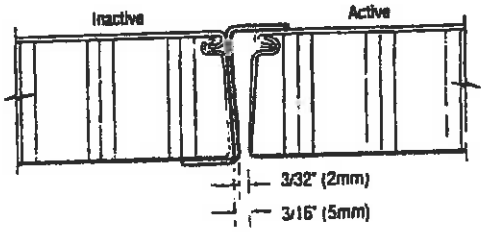
- **Standard operating clearances** *(installed in frame)*:
  - Head = ⅛" (3mm) to bottom of head or transom panel
  - Hinge side = 3/32" (2mm) to rabbet on jamb
  - Meeting edges = 3/32" (2mm) with or without astragal. For openings without an astragal, a wide inactive leaf is used.
  - Bottom = ¾" (19mm) to bottom of frame
- **Meeting edges:**
  - 14 Gage astragal is furnished loose for installation in the field by others.
  - Overlapping astragal kits are available to convert an active leaf to an inactive leaf.
  - When an astragal is not used, the width of the inactive leaf is increased 3/32" (2mm).
- **Hardware preparations:** the inactive leaf can be prepared for hardware as specified.

Double Door Elevation

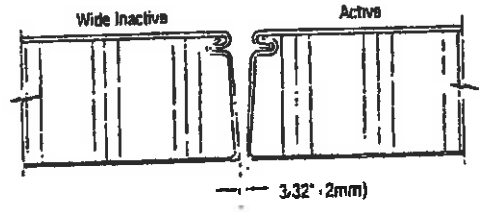


MEETING EDGE DETAILS:

Typical Astragal 14 Gage



Pairs without Astragal



Five Knuckle

Plain Bearing - Standard Weight

For use on medium weight doors or doors requiring low frequency service

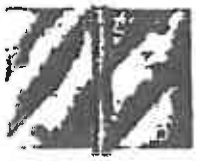
1191 Brass with Stainless Steel pin - ANSI A2133
Stainless Steel with Stainless Steel pin - ANSI A5133

1279 Steel with Steel pin - ANSI A8133

- Non-rising removable pin with button tip and plug
- With door closer use ball bearing hinge

Hinge Size		Gauge of Metal	Hole Count	Screw Size	
Inches	mm			Machine	Wood
2 x 2	51 x 51	0.083	4	-	3/4 x 8
2 1/2 x 2 1/2	64 x 64	0.089	6	-	3/4 x 8
3 x 3	76 x 76	0.097	6	-	1 x 9
3 1/2 x 3 1/2	89 x 89	0.119	6	1/2 x 10-24	1 x 9
4 x 4	102 x 102	0.129	8	1/2 x 12-24	1 1/4 x 12
4 1/2 x 4	114 x 102	0.134	8	1/2 x 12-24	1 1/4 x 12
4 1/2 x 4 1/2	114 x 114	0.134	8	1/2 x 12-24	1 1/4 x 12
5 x 4	127 x 102	0.145	8	1/2 x 12-24	1 1/4 x 12
5 x 4 1/2	127 x 114	0.145	8	1/2 x 12-24	1 1/4 x 12
5 x 5	127 x 127	0.145	8	1/2 x 12-24	1 1/4 x 12
6 x 4 1/2	152 x 114	0.160	10	1/2 x 1/4-20	1 1/2 x 14
6 x 5	152 x 127	0.160	10	1/2 x 1/4-20	1 1/2 x 14
6 x 6	152 x 152	0.160	10	1/2 x 1/4-20	1 1/2 x 14

Five Knuckle



Plain Bearing - Standard Weight - Wide Throw

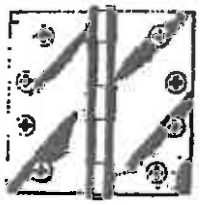
For use on medium weight doors or doors requiring low frequency service

1191 Wide Throw
Brass with Stainless Steel pin - ANSI A2133
Stainless Steel with Stainless Steel pin - ANSI A5133

1279 Wide Throw
Steel with Steel pin - ANSI A8133

- Non-rising removable pin with button tip and plug
- With door closer use ball bearing hinge

Hinge Size		Gauge of Metal	Hole Count	Screw Size	
Inches	mm			Machine	Wood
3 1/2 x 5	89 x 127	0.119	6	1/2 x 10-24	1 x 9
3 1/2 x 6	89 x 152	0.119	6	1/2 x 10-24	1 x 9
4 x 5	102 x 127	0.129	8	1/2 x 12-24	1 1/4 x 12
4 x 6	102 x 152	0.129	8	1/2 x 12-24	1 1/4 x 12
4 x 7	102 x 178	0.129	8	1/2 x 12-24	1 1/4 x 12
4 1/2 x 5	114 x 127	0.134	8	1/2 x 12-24	1 1/4 x 12
4 1/2 x 6	114 x 152	0.134	8	1/2 x 12-24	1 1/4 x 12
4 1/2 x 7	114 x 178	0.134	8	1/2 x 12-24	1 1/4 x 12
4 1/2 x 8	114 x 203	0.134	8	1/2 x 12-24	1 1/4 x 12
5 x 6	127 x 152	0.145	8	1/2 x 12-24	1 1/4 x 12
5 x 7	127 x 178	0.145	8	1/2 x 12-24	1 1/4 x 12
5 x 8	127 x 203	0.145	8	1/2 x 12-24	1 1/4 x 12



Concealed Bearing - Standard Weight

For use on medium weight doors or doors requiring medium frequency service

CB1191 Stainless Steel with Stainless Steel pin - ANSI A5112

- Non-rising removable pin with button tip and plug
- Only available with SecureCoat® Lifetime finish (US3SC)
- Specify machine screws

Hinge Size		Gauge of Metal	Hole Count	Screw Size	
Inches	mm			Machine	Wood
3 1/2 x 3 1/2	89 x 89	0.119	6	-	1 x 9
4 x 4	102 x 102	0.129	8	-	1 1/4 x 12
4 1/2 x 4	114 x 102	0.134	8	-	1 1/4 x 12
4 1/2 x 4 1/2	114 x 114	0.134	8	-	1 1/4 x 12
5 x 4	127 x 102	0.145	8	-	1 1/4 x 12
5 x 4 1/2	127 x 114	0.145	8	-	1 1/4 x 12
5 x 5	127 x 127	0.145	8	-	1 1/4 x 12
6 x 4 1/2	152 x 114	0.160	10	-	1 1/2 x 14
6 x 5	152 x 127	0.160	10	-	1 1/2 x 14
6 x 6	152 x 152	0.160	10	-	1 1/2 x 14

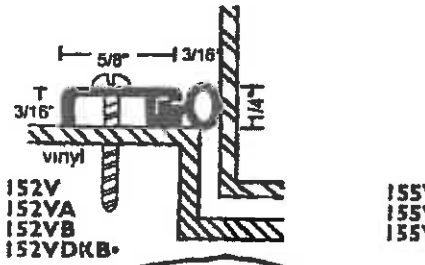
Vinyl Seals

Properties:
- Synthetic polymer: Polyvinyl Chloride
- Economical
- Flame resistant
- Moisture resistant
- Temperature range 0F to 140F
- Plasticizers evaporate with age and exposure to UV, Cold, Heat causing hardening, loss of memory, loss of resilience, cracking and crazing

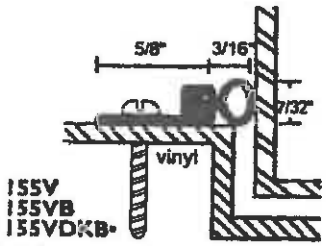
#6 x 3/4" Stainless Steel Sheet Metal Screws furnished
Screw holes slotted for adjustment

All vinyl seals this section

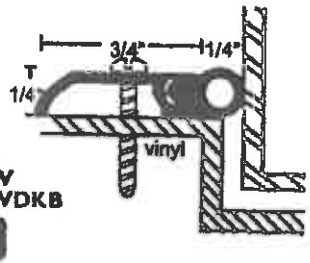
A - clear
B - gold
DKB - dark bronze
no suffix - mill
Vinyl is gray
(exception: *vinyl is black)



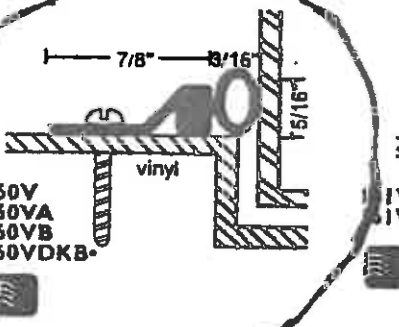
152V
152VA
152VB
152VDKB*



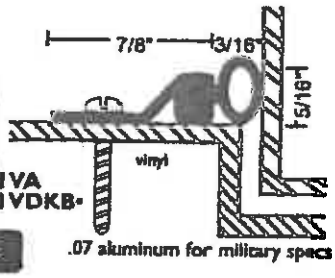
155V
155VB
155VDKB*



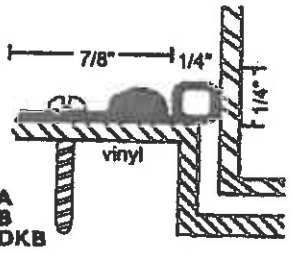
156V
156VDKB



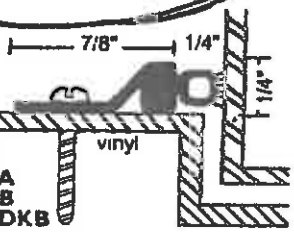
160V
160VA
160VB
160VDKB*



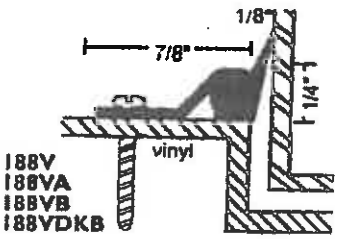
161V
161VA
161VB
161VDKB*
.07 aluminum for military specs



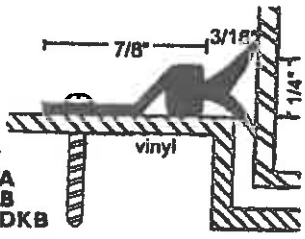
162V
162VA
162VB
162VDKB



164V
164VA
164VB
164VDKB

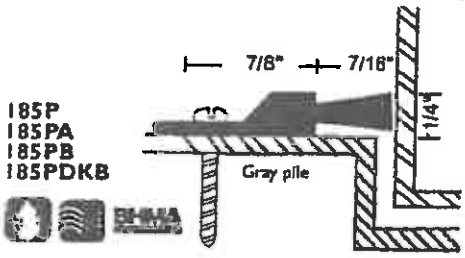


188V
188VA
188VB
188VDKB

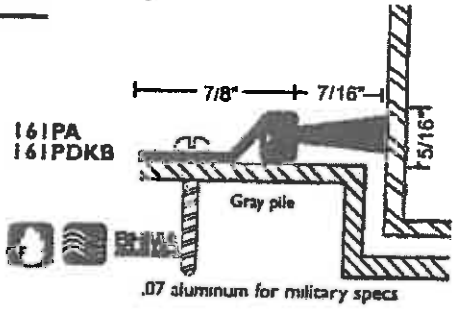


190V
190VA
190VB
190VDKB

Pile Seals



185P
185PA
185PB
185PDKB



161PA
161PDKB
.07 aluminum for military specs

Saddle Thresholds

All thresholds this page

MATERIALS & FINISHES

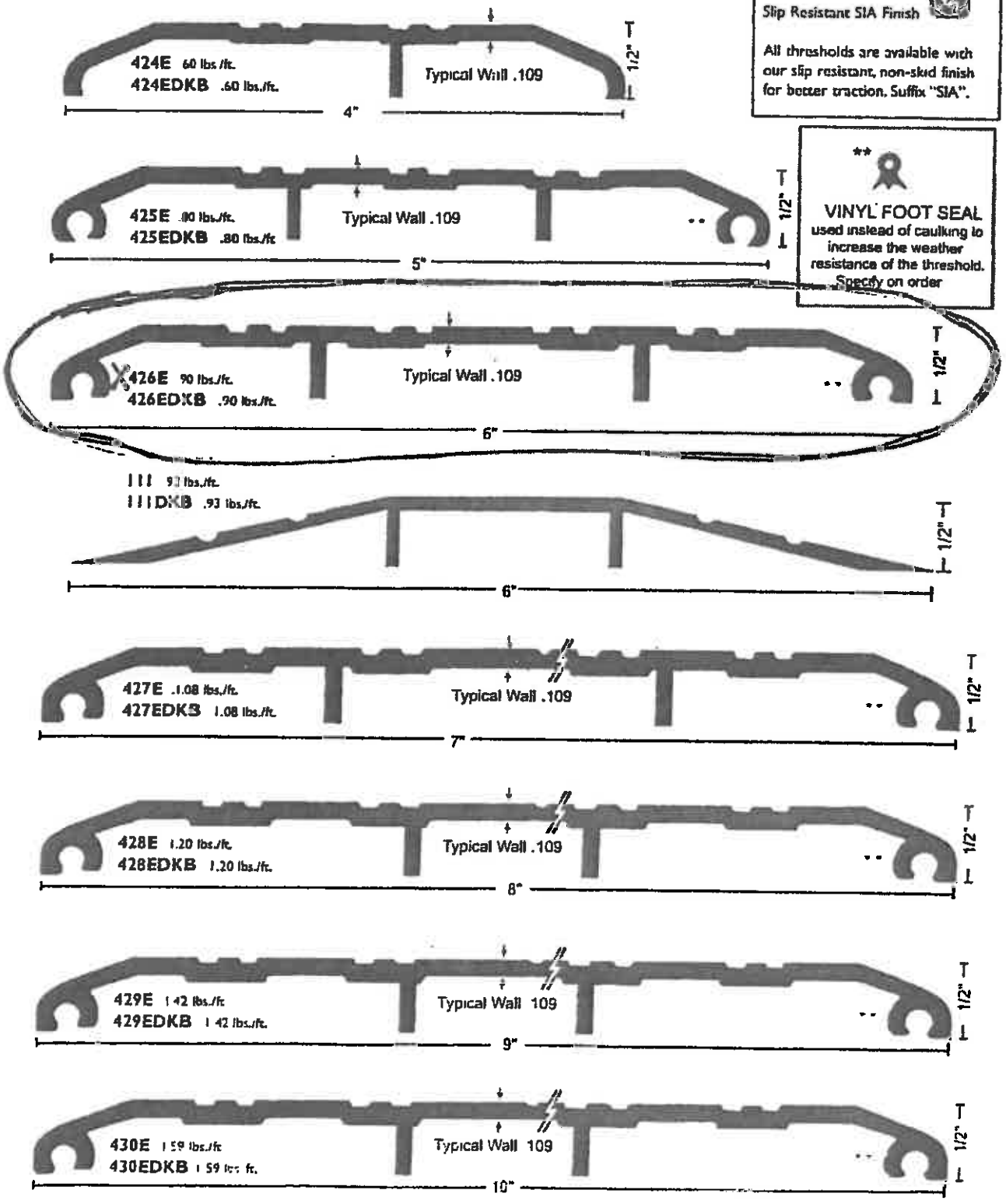
- Aluminum mill finish
- DKB - Aluminum dark bronze finish

Slip Resistant SIA Finish

All thresholds are available with our slip resistant, non-skid finish for better traction. Suffix "SIA".

**

VINYL FOOT SEAL
used instead of caulking to increase the weather resistance of the threshold. Specify on order



Specifications

Handing:
All D-Series lever locksets are non-handed.

Door Thickness:
1⅛" to 2⅛" (41mm–54mm) standard including Vandlgard® functions.
See accessories (Page 12) for spacers required for 1⅜" doors.

Backset:
2¾" (70mm) standard. 2⅜", 3¾" and 5" (60mm, 95mm, 127mm) optional.

Faceplate:
Brass, bronze or stainless steel. 1⅛" x 2¼" (29mm x 57mm) square corner, beveled.

Lock Chassis:
Zinc plated for corrosion resistance.

Latch Bolt:
Steel, ½" (12mm) throw, deadlocking on keyed and exterior functions. ¾" (19mm) throw anti-friction latch available for pairs of fire doors.

Exposed Trim:
Levers: Pressure cast zinc, plated to match finish symbols.
Roses: Solid brass.

Strike:
ANSI curved lip strike 1¼" x 4⅞" x 1³⁄₁₆" lip to center standard. Optional strikes, lip lengths and ANSI strike box available. See page 11.

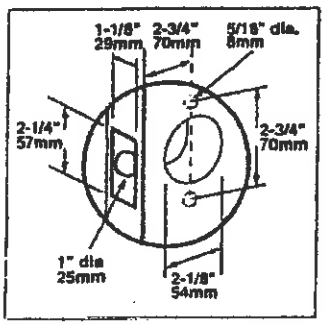
Cylinder & Keys:
6-pin Everest C123 keyway standard with two patented nickel silver keys per lock.

Keying Options:
Interchangeable core and Primus® high security cylinders. Master keying, grand master keying and construction keying.

Warranty:
Seven-year limited for all functions including Vandlgard®.

Door Preparation

Lever Designs



Certifications

ANSI
Meets or exceeds A156.2 Series 4000, Grade 1 strength and operational requirements. Meets A117.1 Accessibility Code.

Federal
Meets FF-H-106C Series 161.

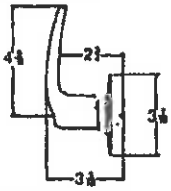
California State Reference Code
(Formerly Title 19, California State Fire Marshal Standard)
All levers with returns comply; levers return to within ½" of door face.

UL / cUL:
All locks listed for A label single doors, 4' x 8'.
Letter F and UL symbol on latch front indicate listing.
Electrified functions are UL19X Listed for single point locking applications.
UL437 Listed locking cylinder optional: specify Primus 20-500 Series cylinder.

Lever Designs & Finishes

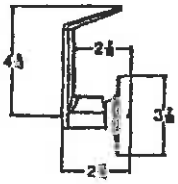
ATHENS

Symbol: ATH
Material: Pressure cast zinc lever; wrought brass rose
Finishes:
605, 606, 612, 613, 619, 625, 626



RHODES

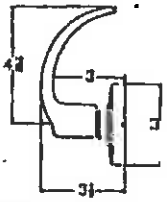
Symbol: RHO (06)
Material: Pressure cast zinc lever; wrought brass rose
Finishes:
605, 606, 612, 613, 619, 625, 626



Lever Designs & Finishes

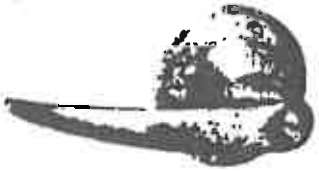
SPARTA

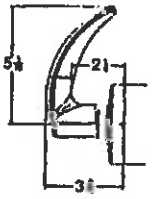
Symbol: SPA (17)
Material: Pressure cast zinc lever; wrought brass rose
Finishes:
605, 606, 612, 613, 619, 625, 626



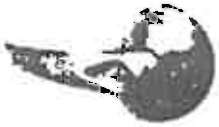
OMEGA

Symbol: OME
Material: Pressure cast zinc lever; wrought brass rose
Finishes:
605, 606, 612, 613, 619, 625, 626





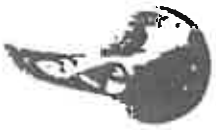
605
Bright Brass



606
Satin Brass

612
Satin Bronze

613
Oil Rubbed Bronze

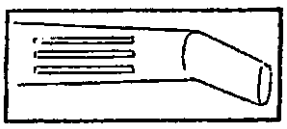


619
Satin Nickel

625
Bright Chromium Plated

626
Satin Chromium Plated

8 Keyed functions available with interchangeable core options. Levers are available for full size and small format interchangeable cores.



TACTILE WARNING (KNURLING)

Change symbol designation as follows:
8AT for Athens
8RO for Rhodes
8SP for Sparta

Only outside lever is knurled unless otherwise specified.

Not available with Omega trim

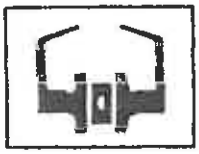
Finishes
605 Bright Brass
606 Satin Brass
612 Satin Bronze
613 Oil Rubbed Bronze
619 Satin Nickel
625 Bright Chromium Plated
626 Satin Chromium Plated

Functions

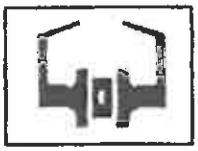
Non-Keyed Locks

SCHLAGE ANSI

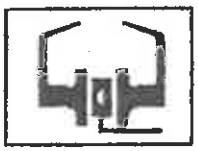
ND10S F75 — **Passage Latch**
Both levers always unlocked.



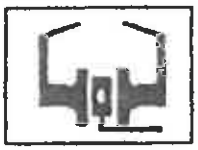
ND12D F89 — **Exit Lock**
Outside lever always fixed. Inside lever always unlocked.



ND12DEL — **Electrically Locked (Fail Safe)**
Outside lever continuously locked electrically. Unlocked by switch or power failure. Auxiliary latch deadlocks latchbolt when door is closed. Inside lever always free for immediate exit.

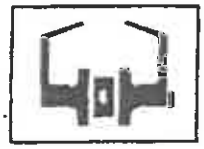


ND12DEU — **Electrically Unlocked (Fail Secure)**
Outside lever continuously locked until unlocked by electric current. Auxiliary latch deadlocks latchbolt when door is closed. Inside lever always free for immediate exit.

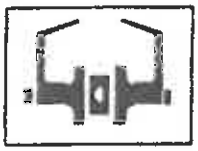


ND25D — **Exit Lock**
Blank plate outside. Inside lever always unlocked.

ND40S F76 — **Bath/Bedroom Privacy Lock**
Push-button locking. Can be opened from outside with small screwdriver. Turning inside lever or closing door releases button.



ND44S — **Hospital Privacy Lock**
Push-button locking. Unlocked from outside by turning emergency turn-button. Turning inside lever or closing door releases button.

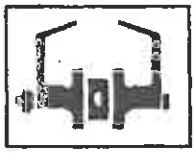


ND170 — **Single Dummy Trim**
Dummy trim for one side of door. Used for door pull or as matching inactive trim.

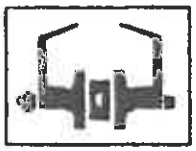
Keyed Locks

SCHLAGE ANSI

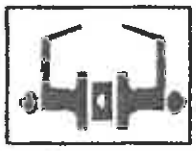
ND50PD F82 — **Entrance/Office Lock***
Push-button locking. Push-button locks outside lever until unlocked with key or by turning inside lever.



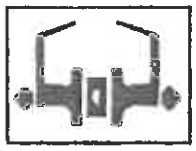
ND53PD F109 — **Entrance Lock***
Turn/push-button locking: pushing and turning button locks outside lever, requiring use of key until button is manually unlocked. Push-button locking: pushing button locks outside lever until unlocked by key or by turning inside lever.



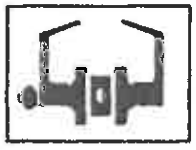
ND60PD F88 — **Vestibule/Classroom Security Lock***
Latch retracted by key from outside when outside lever is locked by key in inside lever. Inside lever is always unlocked.



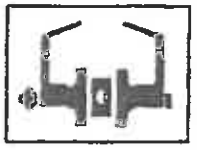
ND66PD F91 — **Store Lock*†**
Key in either lever locks or unlocks both levers.



ND70PD F84 — **Classroom Lock***
Outside lever locked and unlocked by key. Inside lever always unlocked.



ND73PD F90 — **Corridor Lock***
Outside lever locked by key outside or push-button inside. Push-button released by rotating inside lever or closing door. When outside lever is locked by key, key must be used to unlock it. Inside lever is always unlocked.



* *Available functions for small format interchangeable core.*

† *Caution: Double cylinder locks on residences and any door in any structure which is used for egress are a life safety hazard in times of emergency and their use is not recommended. Installation should be in accordance with existing codes only.*

Specifications

Handing:
Keyed functions are reversible. Non-keyed functions are not handed.

Door Thickness:
1⅜" to 1¾" (35 mm to 48 mm) standard.
2" (51 mm) to 2½" (64 mm) optional extended inside.

Backset:
2⅜" (60 mm) standard. 2¾" (70 mm), 3¾" (95 mm) and 5" (127 mm) optional.

Front:
Steel. 1⅛" x 2¼" square corner, beveled, for 2¾" backset standard. Optional 1" square corner, 1" radius corner, and non-UL drive-in / round face. For availability with specific backsets, see page 6.

Lock Chassis:
Steel, zinc dichromate plated for corrosion resistance.

Latch Bolt:
Brass, chrome plated, ½" throw, deadlocking on keyed and exterior functions.

Exposed Trim:
Wrought brass, bronze or stainless steel. Levers are pressure cast zinc, plated to match finish symbols.

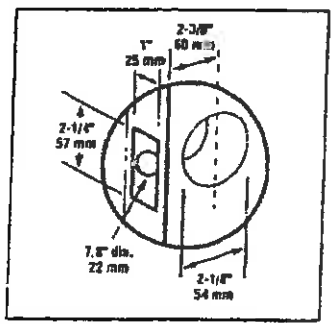
Strike:
T-strike 1⅛" x 2¾" (29 mm x 70 mm) x 1⅛" (29 mm) lip to center with box standard. Optional strikes, lip lengths and ANSI strike box available. See page 7.

Cylinder & Keys:
Commercial: 6-pin patented Everest C123 keyway standard with two nickel silver keys per lock.
Residential: 6-pin C keyway, keyed 5-pin.

Keying Options:
Interchangeable core and Primus® high security cylinders. Master keying, grand master keying, and construction keying.

Warranty:
Commercial: three-year limited.
Residential: Full mechanical lifetime.

Door Preparation



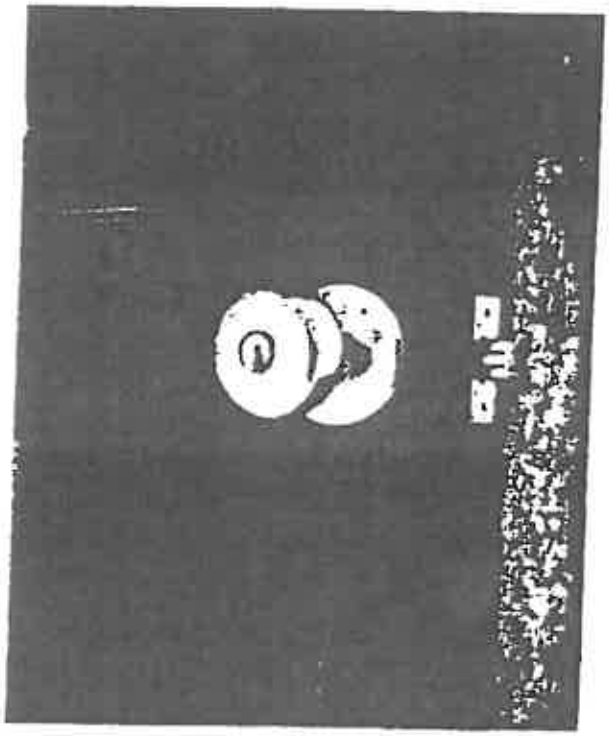
Certifications

ANSI
Meets or exceeds A156.2 Series 4000, Grade 2 strength and operational requirements.

Federal
Meets FF-H-106C.

California State Reference Code
(Formerly Title 19, California State Fire Marshal Standard)
All levers with returns comply; levers return to within ½" of door face.

UL / ULC:
All locks listed for A label single doors, 4' x 8'.
Letter F and UL symbol on latch front indicate listing.
UL437 Listed locking cylinder optional: specify Primus 20-500 Series cylinder.



Designs & Finishes

609

GEORGIAN

Symbol: GEO
Material: Wrought brass
Finishes: 605, 606, 609, 610, 625, 626

605

LEVON

Symbol: LEV
Material: Pressure cast zinc lever; wrought brass or bronze rose
Finishes: 605, 612, 613, 626

613

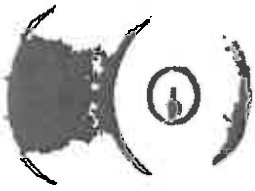
ORBIT

Symbol: ORB
Material: Wrought brass or bronze
Finishes: 605, 606, 609, 610, 611, 612, 613, 616, 625, 626

605

PLYMOUTH

Symbol: PLY
Material: Wrought brass, bronze, or stainless steel
Finishes: 605, 606, 609, 610, 611, 612, 613, 616, 625, 626, 629, 630



626

TULIP

Symbol: TUL
Material: Wrought brass
Finishes: 605, 606, 609, 610, 625, 626

Note: Levon available as inside trim only on deadlatch functions. Specify complete trim application and door handing when ordering with deadlatch functions.

Finishes

605 Bright Brass
606 Satin Brass
609 Antique Brass
610 Bright Brass, Blackened
611 Bright Bronze
612 Satin Bronze
613 Oil Rubbed Bronze
616 Antique Bronze
625 Bright Chromium Plated
626 Satin Chromium Plated
629 Bright Stainless Steel
630 Satin Stainless Steel

Keyed functions available with full size interchangeable core option for Orbit design.

Functions

ANSI A156.2 Series 4000 Grade 2

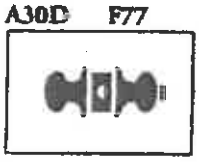
Non-Keyed Functions

SCHLAGE ANSI

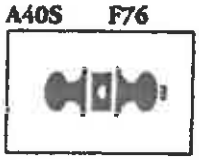
A10S F75 — **Passage Latch**
Both knobs always unlocked.

A25D — **Exit Lock**
Blank plate outside. Inside knob always unlocked. Specify door thickness, 1⅜" or 1¾".

A30D F77 — **Patio Lock**
Push-button locking. Turning inside knob or closing door releases button, preventing lock-out.

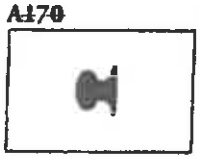


A40S F76 — **Bath/Bedroom Privacy Lock**
Push-button locking. Can be opened from outside with small screwdriver. Turning inside knob or closing door releases button.



A43D F79 — **Communicating Lock**
Turn-button in outer knob locks and unlocks knob and inside thumbturn.

A170 — **Single Dummy Trim**
Dummy trim for one side of door. Used for door pull or as matching inactive trim.

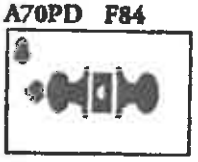


Keyed Functions

SCHLAGE ANSI

A53PD F109 — **Entrance Lock**
Turn/push-button locking: pushing and turning button locks outside knob requiring use of key until button is manually unlocked. Push-button locking: pushing button locks outside knob until unlocked by key or by turning inside knob.

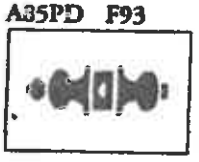
A70PD F84 — **Classroom Lock**
Outside knob locked and unlocked by key. Inside knob always unlocked.



A79PD — **Communicating Lock**
Locked or unlocked by key from outside. Blank plate inside.

A80PD F86 — **Storeroom Lock**
Outside knob fixed. Entrance by key only. Inside knob always unlocked.

A85PD F93 — **Hotel/Motel Lock**
Outside knob fixed. Entrance by key only. Push-button in inside knob activates visual occupancy indicator, allowing only emergency masterkey to operate. Rotation of inside spanner-button provides lock-out feature by keeping indicator thrown.



Keyed functions available with full size interchangeable core option for Orbit design.

Pemko Manufacturing Company
5535 Distribution Drive
Memphis, TN 38141
Phone: (800) 824-3018
Fax: (800) 243-3656
E-mail: pemkosales@pemko.com
www.pemko.com

SECTION 08710
DOOR HARDWARE
(CONTINUOUS GEARED DOOR HINGES)

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes: Continuous Geared Door Hinges.

Specifier Note: Revise paragraph below to suit project requirements. If a reader of this section could reasonably expect to find a product or component specified in this section, but it is actually specified elsewhere, then the related section number(s) should be listed in the paragraph below. Add section numbers and titles per CSI *MasterFormat* and specifier's practice. In the absence of related sections, delete paragraph below.

B. Related Sections:

1. Division 6 Section(s): Wood Frames.
2. Division 8 Section(s): Steel Doors, Wood Doors, Sound Control Doors, Aluminum Frame Storefront Doors.
3. Division 10 Section(s): Compartments and Cubicles, Partitions.
4. Division 13 Section(s): Special Facilities, Integrated Construction, Special Structures, Special Purpose Rooms.

Specifier Note: Article below may be omitted when specifying manufacturer's proprietary products and recommended installation. Retain References Article when specifying products and installation by an industry reference standard. If retained, list standard(s) referenced in this section. Indicate issuing authority name, acronym, standard designation and title. Establish policy for indicating edition date of standard referenced. Conditions of the Contract or Division 1 References Section may establish the edition date of standards. This article does not require compliance with standard. It is a listing of all references used in this section.

1.02 REFERENCES

A. ASTM International:

1. ASTM E2074 Standard Test Method for Fire Tests of Door Assemblies, Including Positive Pressure Testing of Side-Hinged and Pivoted Swinging Door Assemblies.

B. American National Standards Institute/Builders Hardware Manufacturers Association (ANSI/BHMA):

1. ANSI/BHMA A156.18 Materials and Finishes.
2. ANSI/BHMA A156.26 Standards for Continuous Hinges.

C. American National Standards Institute/Steel Door Institute (ANSI/SDI):

1. ANSI A250.8/SDI-100 Recommended Specifications for Standard Steel Doors and Frames.

D. American National Standards Institute/Window and Door Manufacturers Association (ANSI/WDMA):

1. ANSI/WDMA I.S.1-A Architectural Wood Flush Doors.

E. Federal Government:

1. U.S. Architectural & Transportation Barriers Compliance Board. Americans with Disabilities Act (ADA), Accessibility Guidelines for Buildings and Facilities (ADAAG), 1992.
2. Federal Standard FED-STD-795-1988 (Revised 1989) Uniform Federal Accessibility Standards.

F. Underwriters Laboratories, Inc. (UL):

1. UL 10B Fire Tests of Door Assemblies.

2. UL 10C Fire Tests of D[illegible] Assemblies.
3. UL 752 Bullet Resistant Equipment.

G. International Code Council (ICC):
1. UBC 7-2 Fire Test of Door Assemblies (Positive Pressure).
2. International Building Code (IBC) Code 2000 (Positive Pressure).
3. ICC/ANSI A117.1 Accessible and Usable Buildings and Facilities.

H. British Standards (BS):
1. BS 476 Fire Tests on Building Materials and Structures.

I. National Fire Protection Association (NFPA):
1. NFPA 1 Fire Prevention Code.

Specifier Note: Article below should be restricted to statements describing design or performance requirements and functional (not dimensional) tolerances of a complete system. Limit descriptions to composite and operational properties required to link components of a system together and to interface with other systems.

1.03 SYSTEM DESCRIPTION

A. Design Requirements: Provide continuous geared door hinges which have been manufactured, fabricated and installed to meet the following design criteria:
1. Continuous geared configuration, designed to distribute loads uniformly.
2. Identical operation in each leaf, designed to reduce door opening effort.
3. UL labeled for 3 hour fire classification.
4. Durability tested to ANSI/BHMA A156.26 Grade 1, 2, 3.

Specifier Note: Article below includes submittal of relevant data to be furnished by Contractor before, during or after construction. Coordinate this article with Architect's and Contractor's duties and responsibilities in Conditions of the Contract and Division 1 Submittal Procedures Section.

1.04 SUBMITTALS

A. General: Submit listed submittals in accordance with Conditions of the Contract and Division 1 Submittal Procedures Section.

B. Product Data: Submit manufacturer's product data and installation instructions.

C. Shop Drawings: Provide drawings indicating required component locations, installation interface with adjacent materials, anchorage, fastening and similar information.

D. Samples: Submit one each of manufacturer's standard selection samples.

E. Quality Assurance/Control Submittals: Submit the following:
1. Test Reports: Upon request, submit [Fire] [And] [Durability] test reports from recognized testing laboratory.
2. Certificates: Submit manufacturer's certificate that products meet or exceed specified requirements.

F. Closeout Submittals: Submit the following:
1. Warranty documents specified herein.

Specifier Note: Article below should include statements of prerequisites, standards, limitations and criteria that establish an overall level of quality for products and workmanship for this section. Coordinate article below with Division 1 Quality Assurance Section.

1.05 QUALITY ASSURANCE

A. Installer Qualifications: Utilize an installer having demonstrated experience on projects of similar size and complexity.

Specifier Note: Paragraph below should list obligations for compliance with specific code requirements particular to this section and authority having jurisdiction. General statements to comply with a particular code are typically addressed in Conditions of the Contract and Division 1 Regulatory Requirements Section. Repetitive statements should be avoided.

B. Regulatory Requirements and Approvals: [Specify applicable requirements of regulatory agencies.].

1. [Code agency name].
    a. [Report or approval number].

C. Certifications: [Specify requirement for certifications.].

D. Field Samples: [Specify requirement for field samples.].

E. Mock-Ups: [Specify requirements for mock-up.].

1. Subject to acceptance by owner, mock-up may be retained as part of finish work.
2. If mock-up is not retained, remove and properly dispose of mock-up.

Specifier Note: Retain paragraph below if preinstallation meeting is required.

F. Preinstallation Meetings: [Specify requirements for meeting.].

Specifier Note: Article below should include specific protection and environmental conditions required during storage. Coordinate article below with Division 1 Product Requirements Section.

1.06 DELIVERY, STORAGE & HANDLING

A. General: Comply with Division 1 Product Requirement Section.

B. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.

C. Storage and Protection: Store materials protected from exposure to harmful environmental conditions and at temperature and humidity conditions recommended by the manufacturer.

Specifier Note: Coordinate article below with Conditions of the Contract and with Division 1 Closeout Submittals (Warranty) Section. Use this article to require special or extended warranty or bond covering the work of this section.

1.07 WARRANTY

A. Project Warranty: Refer to Conditions of the Contract for project warranty provisions.

B. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under contract documents.

Specifier Note: Coordinate subparagraph below with manufacturer's warranty requirements.

1. Warranty Period: Warranty for life of door opening, beginning with date of substantial completion.

PART 2 PRODUCTS

Specifier Note: Retain article below for proprietary method specification. Add product attributes, performance characteristics, material standards and descriptions as applicable. Use of such phrases as "or equal" or "or approved equal" or similar phrases may cause ambiguity in specifications. Such phrases require verification (procedural, legal and regulatory) and assignment of responsibility for determining "or equal" products.

2.01 CONTINUOUS GEARED DOOR HINGES

Specifier Note: Paragraph below is an addition to CSI *SectionFormat* and a supplement to MANU-SPEC. Retain, edit or delete paragraph below to suit project requirements and specifier practice.

A. Manufacturer: Pemko Manufacturing Company.

1. Contact: PO Box 3780, 4226 Transport Street, Ventura, CA 93003; Telephone: (800) 283-9988, (805) 642-2600; Fax: (805) 642-4109; E-mail: pemkosales@pemko.com; website: www.pemko.com.

B. Proprietary Products/Systems: Continuous Geared Door Hinges, including the following:

1. Continuous Geared PemkoHinges:
    a. Material: Extruded tempered aluminum.
    b. Material Standard: 6063-T6 alloy.
    c. Configuration: Three interlocking extrusions in pinless assembly, installed to full height of door frame.
    d. Finish (ANSI/BHMA A156.18): [Clear anodized] [Dark anodized] [Gold anodized].
    e. Type: [Full mortise] [Full surface] [Half surface] [Full mortise residential: 1 3/4 inches (45 mm)] [Full

mortise residential[3/8 inches (35 mm)] [Special full mortise][le throw full mortise].

f. Length: [79 inches (2007 mm)] [83 inches (2108 mm)] [85 inches (2159 mm)] [95 inches (2413 mm)] [120 inches (3048 mm)].

g. Hinge Options: [Safety] [Short leaf flush] [Short leaf inset] [Standard] [Safety short leaf inset] [Center pivot].

h. Electrical Modifications: [Specify electrical modifications.].

i. Strength: [Standard Duty: 14 bearings each leaf for 83 inch (2108 mm) hinge, minimum door weight 280 lb (127 kg)] [Heavy Duty: 27 bearings each leaf for 83 inch (2108 mm) hinge, minimum door weight 540 lb (245 kg)].

j. Mortise Fasteners: TEK, #12 × 3/4 inch, FHUC, Phillips head screws.

k. Fire Label Certification: Comply with ASTM E2074, NFPA 1, UBC 7-2, BS 476, UL 10B, UL 10C, [90 minutes for wood doors] [3 hours for hollow metal doors].

l. Testing Standard: Tested according to ANSI/BHMA A156.26.

Specifier Note: Edit Article below to suit project requirements. If substitutions are permitted, edit text below. Add text to refer to Division 1 Project Requirements (Product Substitutions Procedures) Section.

2.02 PRODUCT SUBSTITUTIONS

A. Substitutions: No substitutions permitted.

PART 3 EXECUTION

Specifier Note: Article below is an addition to the CSI *SectionFormat* and a supplement to MANU-SPEC. Revise article below to suit project requirements and specifier's practice.

3.01 MANUFACTURER'S INSTRUCTIONS

A. Comply with the instructions and recommendations of the continuous geared door hinge manufacturer.

Specifier Note: Specify actions to physically determine that conditions are acceptable to receive primary products of the section.

3.02 EXAMINATION

A. Site Verification of Conditions:

1. Verify that site conditions are acceptable for installation of continuous geared door hinges.
   a. Examine doors and frames for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction and other conditions affecting performance.
   b. Ensure frame is square and plumb before installation.
   c. Examine roughing-in for electrical wiring connections.
2. Do not proceed with installation of continuous geared door hinges until unacceptable conditions are corrected.

Specifier Note: Specify actions required to physically prepare the surface, area or site or to incorporate the primary products of the section.

3.03 PREPARATION

A. Wood Door Preparation: Comply with ANSI/WDMA I.S.1-A.

B. Steel Door and Frame Preparation: Drill doors and frames for hardware per manufacturer's installation instructions. Comply with ANSI A250.8/SDI-100.

Specifier Note: Coordinate article below with manufacturer's recommended installation requirements.

3.04 INSTALLATION

A. Mounting Location: Comply with the following requirements, unless otherwise indicated:

1. Steel Doors and Frames:
   a. Comply with ANSI A250.8/SDI-100.
   b. Ensure frames are properly sized, plumb and square.

c. [Specify standard or specific requirements.].

2. Wood Doors:

a. Comply with ANSI/WDMA I.S.1-A.

b. Ensure doors are properly sized, plumb and square.

c. [Specify standard or specific requirements.].

B. Adjust and reinforce attachment substrates as necessary for proper installation and operation.

C. Space fasteners and anchors according to manufacturer's product instructions.

Specifier Note: Specify the final actions required to prepare installed equipment or other completed work to properly function or perform.

3.05 ADJUSTING

A. Perform adjustments required to ensure that continuous geared door hinges function in compliance with manufacturer's performance criteria prior to acceptance by Owner.

1. Adjust door control devices to compensate for final operation of HVAC system and to comply with accessibility requirements.

Specifier Note: Specify the final actions required to clean installed equipment or other completed work to properly function or perform. Coordinate article below with Division 1 Execution Requirements (Cleaning) Section.

3.06 CLEANING

A. Remove any protective films and clean components as necessary following manufacturer's recommended procedures.

Specifier Note: Specify provisions for protecting work after installation but prior to acceptance by Owner. Coordinate article below with Division 1 Execution Requirements Section.

3.07 PROTECTION

A. Protect installed work from damage due to subsequent construction activity on the site.

END OF SECTION

PEMKO

ASSA ABLOY

PEMKOHINGE™ CONTINUOUS GEARED HINGES:
HALF SURFACE SAFETY HINGES:
STANDARD

TITLE:
PREPARED FOR:
PREPARED BY:
DATE:
COMMENTS:

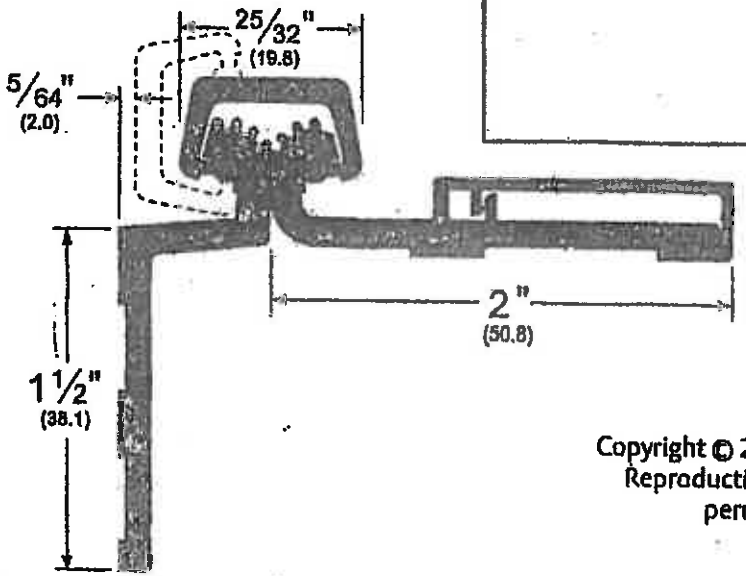
_HS_SF BHMA

AVAILABLE FINISHES: BL, C, D, PW, SN

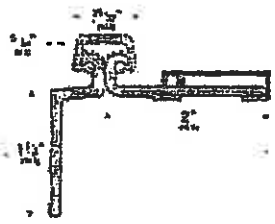
WIDTH: 2" (50.8 mm)
(between frame leaf and door leaf edge)

CAP WIDTH: 25/32" (19.8 mm)

HEIGHT: 1-1/2" (38.1 mm)
(frame edge side - leaf)



BL (Black Anodized) - special request only
C (Clear Anodized)
D (Dark Bronze Anodized)
PW (Painted White) - special request only
SN (Satin Nickel Anodized)



Enlarge Image

_HS_SF

Pemko's standard duty anodized aluminum Half Surface Safety continuous geared hinges are designed mainly for retrofit work in child care and nursing facilities and are applied to the exposed surface of the frame rabbet. Also available in heavy duty models.

- Designed for use with hollow metal frames, where the inset conforms to S.D.I specifications for aligning doors and frames.
- Allows for adjustments in order to properly align the edge of the door to the frame.
- BL (Black Anodized) and PW (Painted White) are special finishes available upon request.
- Fasteners - Frame Portion - All fasteners are #12-24 x 7/16" FHUC, Type C, threadforming.
- Standard model: 16 fasteners required for each leaf.
- Wood screws available on request (specify on order).
- Fasteners - Door Portion - a. Thru-bolt - 1/4-20 x 1-5/8", - Standard Duty Hinges - 4 required. - b. Shoulder Bolt - 1/4-20 x 1" PCH. - Standard Duty Hinges - 4 required. - c. Pan Head Self Drilling #12 x 3/4". - Standard Duty Hinges - 6 required.
- Standard duty hinge. 6" between bearing centers.
- Standard duty hinges conform to Grade 3-150 and Grade 3-300 cycle requirements per BHMA standard ANSI/BHMA A156.26-2006.
- Aluminum continuous hinge for use on swinging type fire doors of the hollow metal, tin-clad, sheet metal and steel covered composite type rated up to 3 hours, wood covered composite type rated up to and including 1-1/2 hours. Also wood core rated up to and including 20 minutes without hose stream.
- PemkoHinge products are guaranteed for the life of the opening against defects in material or workmanship with the exception of AL, RS, standard duty and Grade 3 hinges, which carry a 10 year warranty.
- Weight bearing (per BHMA standard ANSI/BHMA A156.26-2006) for standard models: 83" and 85" = 14 bearings, door weight = 280 lbs.; 95" = 16 bearings, door weight = 320 lbs.; 120" = 20 bearings, door weight = 400 lbs.
- Width: 2" (50.8 mm) (between frame leaf and door leaf edge).
- Cap Width: 25/32" (19.8 mm).
- Height: 1-1/2" (38.1 mm) (frame edge side - leaf).

BHMA

Ratings Explained | View Finishes

☐	CHSSF	C - Clear Anodized Aluminum
☐	DHSSF	D - Dark Bronze Anodized Aluminum
☐	GHSSF	G - Gold Anodized Aluminum, (Special Order Finish)
☐	BLHSSF	BL - Black Anodized Aluminum, (Special Order Finish)
☐	PWHSSF	PW - Painted White Aluminum, (Special Order Finish)
☐	SNHSSF	SN - Satin Nickel Anodized Aluminum, (Special Order Finish)

ATTACHMENT 7

Window Scope of Work Including Measurements And Specifications

Weatherford Armory Window Measurements
And
Replacement Scope of Work

- **Window measurements are listed as approximate Width X Height; Contractor to field verify.**
- **All window bars shall be removed and properly disposed.**
- **All removed windows shall be properly disposed.**
- **Window lintels and any remaining metal with lead-based paint shall be wet scraped and sealed with a DEQ approved encapsulant (See Attachment 3).**
- **Interior and Exterior window sills shall be HEPA vacuumed and wet washed to remove remaining lead dust. Once loose paint and lead dust is removed, window sills shall be sealed with a DEQ approved encapsulant (See Attachment 3).**
- **Attached is a Weatherford Armory Floor Plan with designated window numbers that correspond with the numbers on this Scope of Work.**
- **Specifications for replacement windows are attached.**

1. 3'2" X 9'3" - Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit.

2. 3'2" X 9'3" - Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit.

3. 3'2" X 6'3" - Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit.

4. 3'2" X 9'3" - Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit.

5. 3'2" X 9'3" - Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit.

6. 3'2" X 9'3" - Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit.

7. 3'2" X 9'3" - Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit.

8. 3'2" X 9'3" - Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit.

9. 3'2" X 9'3" - Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit.

10. 3'2" X 9'3" - Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit.

11. 3'2" X 6'3" - Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit.

12. 3'2" X 6'3" - Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit.

13. 3'2" X 9'3" - Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit.

14. 3'2" X 9'3" - Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit.

15. 3'2" X 9'3" - Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit.

16. 3'2" X 9'3" - Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit.

17. 3'2" X 7'9" - Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit.

18. 3'2" X 7'9" - Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit.

19. 3'2" X 6'3" - Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit. A window sized opening will need to be cut into interior wall to access window.

20. 3'2" X 6'3" - Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit. A window sized opening will need to be cut into interior wall to access window.

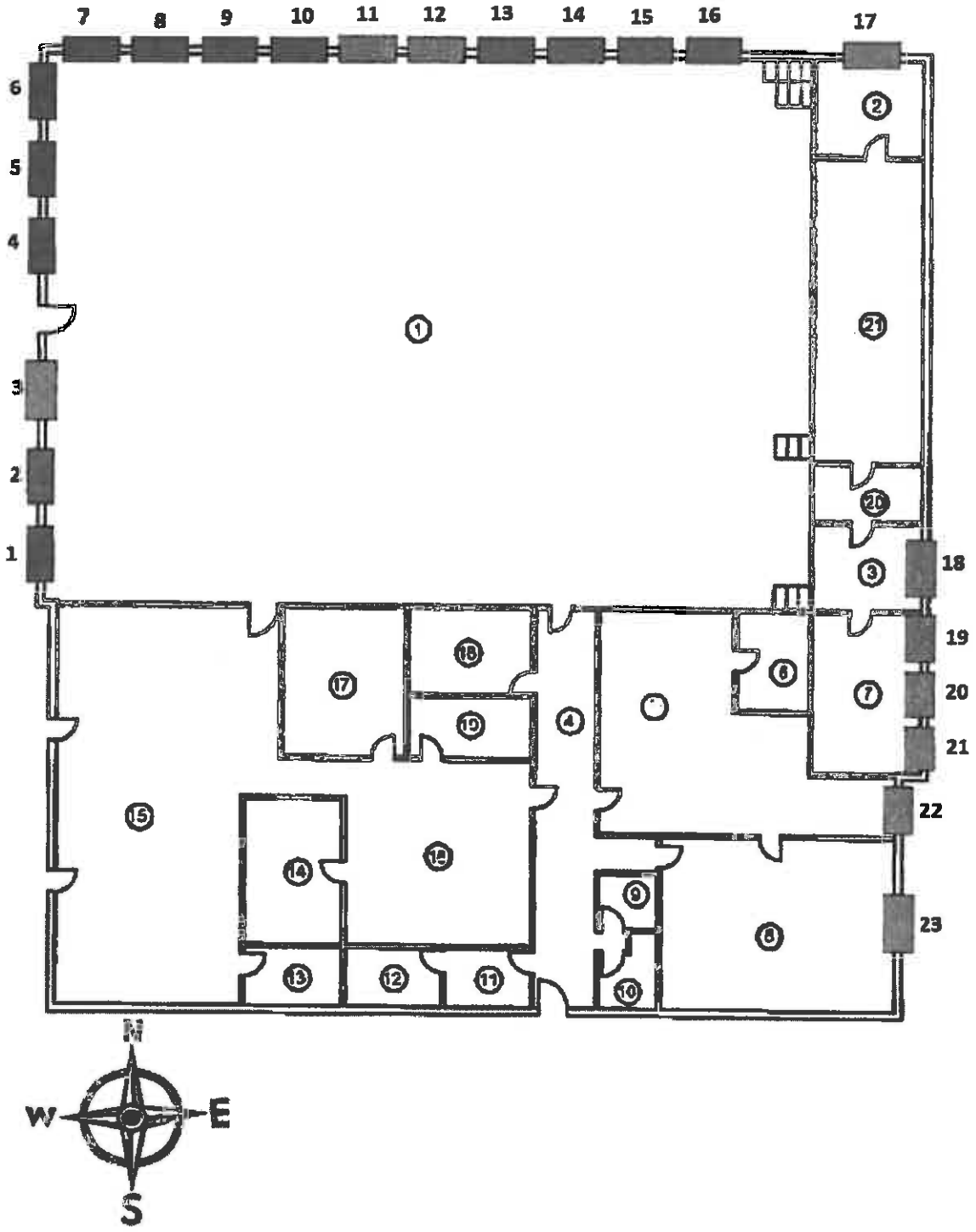
21. 3'2" X 6'3" - Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit. A window sized opening will need to be cut into interior wall to access window.

22. 3'2" X 7'9" - Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit.

23. 3'2" X 7'9" - Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit. A window sized opening will need to be cut into interior wall and cabinets will need to be removed to access window.

Weatherford Armory

Approximate Locations of Windows to be Replaced



SECTION 08520 – ALUMINUM WINDOWS

PART 1 – GENERAL

1.1 SECTION REQUIRMENTS

A. Submit Product Data and Shop Drawings.
B. Product Substitution: Substitutions include products differing from those required by this specification.
   1. Submit two (2) copies of each request for product substitution. Identify product to be replaced and provide complete documentation showing compliance of proposed substitution with applicable requirements. Include a full comparison with the specified product, and a list of changes to other Work required to accommodate the substitution.
   2. Submit requests for product substitution in accordance with the time allotted to do so by the Scope of Work included within the Bid Solicitation.
   3. State of Oklahoma, Department of Environmental Quality will review the proposed substitution and notify bidder of its acceptance or rejection within the time allotted to do so by the Scope of Work included within the Bid Solicitation.
C. Structural Performance: Provide systems, including anchorage, capable of withstanding loads indicated for project location.
   1. Main Frame-Member Deflection: Limited to 1/175 of clear span for spans up to 13 feet 6 inches and to 1/240 of clear span plus ¼ inch for spans greater than 13 feet 6 inches or an amount that restricts edge deflection of individual glazing lites to ¾ inch, whichever is less.
   2. Structural-Testing: Systems tested according to ASTM E 330 at 150 percent of inward and outward wind-load design pressures do not evidence material failures, structural distress, deflection failures, or permanent deformation of main framing members exceeding 0.2 percent of clear span.
D. Air Infiltration: Limited to 0.06 cfm/sq. ft. (0.3 L/s per sq. m) of system surface area when tested according to ASTM E 283 at a static-air-pressure difference of 6.24 ibf./sq. ft.
E. Water Penetration: Systems do not evidence water leakage when tested according to ASTM E 331 at minimum differential pressure of 20 percent of inward acting wind load design pressure but not less than 10 ibf./sq/ ft.
F. Condensation Resistance Factor (CRF): The unit(s) shall be tested in accordance with AAMA 1502 and shall have a condensation resistance factor of no less than 48.
G. Average U-Value: Not more than 0.69 btu./sq. ft. x h x degree F when tested according to AAMA 1503.
H. Sound Transmission: Provide aluminum-framed systems with fixed glazing and framing areas having minimum STC 32 according to ATM E 413 and an OTIC 26 according to ASTM E 1332, as determined by testing according to ASTM E 90.
I. Installer Qualifications: Installer must be a third party professional window installation company that is certified and recommended by the window manufacturer of the windows being installed.
   a) Installer must have no less than five (5) years of installation experience.
   b) Installer must have experience with the removal of steel casement windows.
J. Warranty Requirements: Submit written warranties from window manufacturer for the following:
   1. Windows: Warrant against malfunctions due to defects in thermal breaks, hardware, materials and workmanship for a period of (10) ten years.
   2. Glazing: Glass shall be warranted as follows:
      a) Insulating glass units to remain sealed for (10) ten years,
      b) Laminated glass units to remain laminated for (5) five years,
      c) Polycarbonate to remain clear and ultraviolet light stabilized for (5) five years,
      d) Insulating plastic to not have more than (6) six percent decrease in light transmission and be ultraviolet light stabilized for (10) years.
   3. Finish: Warrant against chipping, peeling, cracking, and blistering for (10) ten years.
   4. Spandrel Panels: Warrant against malfunctions due to defect in finish, materials and workmanship for a period of (5) years.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that are considered acceptable and may be incorporated into the Work included, but not limited to, the following:
   1. Peerless
   2. Quaker
   3. Wojan
   4. Thermal Windows, Inc.

2.2 ALUMINUM WINDOWS

A. Single hung: Series 4000-4 Model 4140/4158 or approved equal.
   1. Thermal brake
   2. Screen cloth insect screens
   3. Color: Dark Bronze

B. Fixed: Series 4000-4 model 4170, or approved equal.
   1. Thermal brake
   2. Screen cloth insect screens
   3. Color: Dark Bronze

C. Glazing:
   1. All glass I.G. units shall be constructed to an overall minimum thickness of 1" with two lites of 3/16" glass specified. Exterior lite AFG 3/16" TI-AC 40 on #2 surface 5/8" Air Space / Interior lite 3/16" clear.
   2. All insulated glass units shall be tested, certified and carry the respective CBA level certification on the glass spacer.

2.3 SPANDREL PANELS

A. Spandrel Panel shall be Mapes 1" insulated panel of 5-ply, 2ld density polystyrene core.
   1. Finish: Polyester baked enamel on embossed aluminum, both sides.
   2. Color: Dark Bronze.

2.4 FINISH

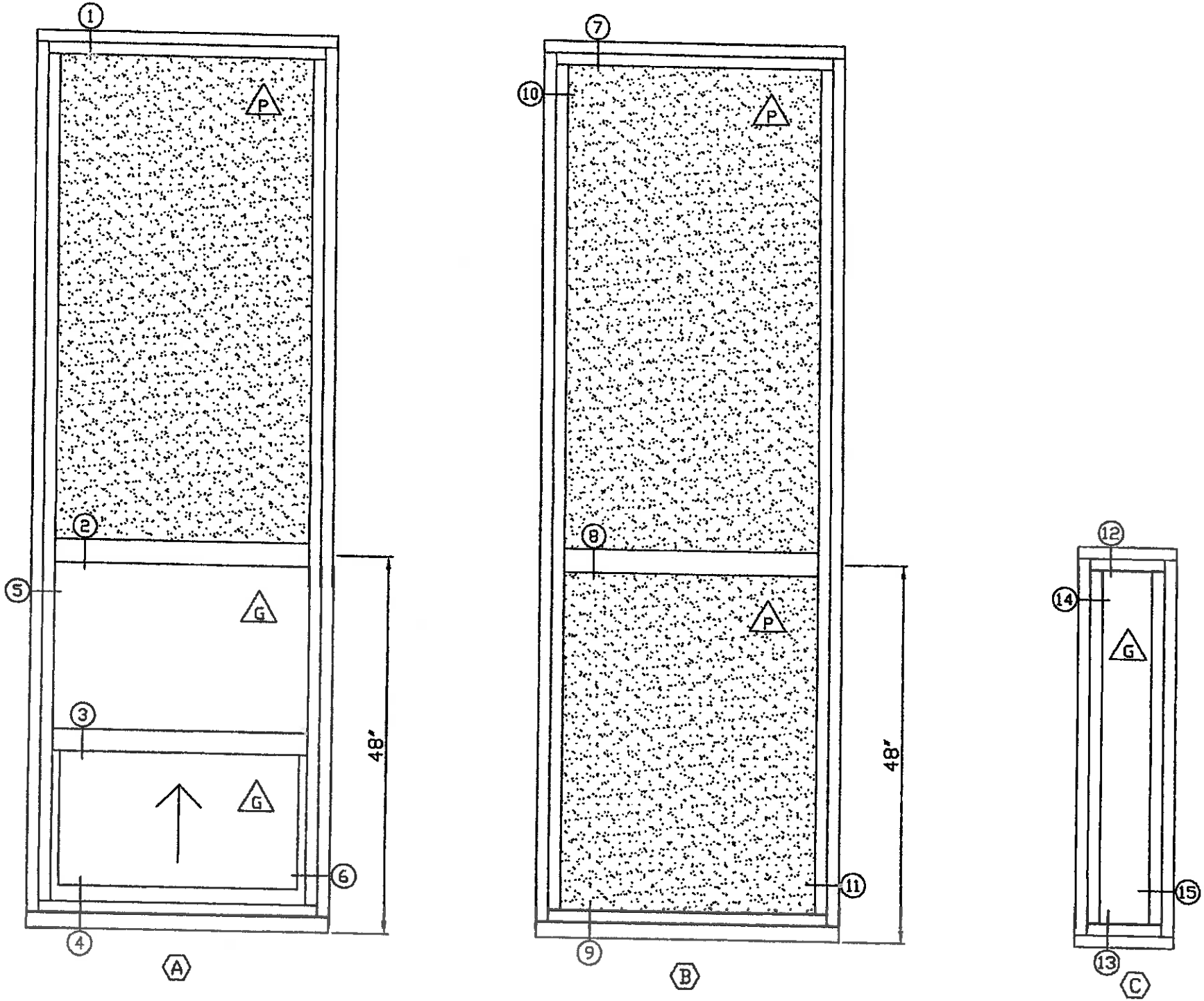
A. Organic coating tested and certified by window manufacturer to comply with the AAMA 2605. Application must be by the window manufacturer.

PART 3 – EXECUTION

3.1 INSTALLATION

A. Provide all hardware, operators, anchors, clips, limit devices, and other components necessary for a complete and weather tight installation per window manufacturer's specification and recommendations for installation.

B. Clean all surfaces with manufacturer approved cleaner. Remove any glazing or sealant compounds, dirt and other substances.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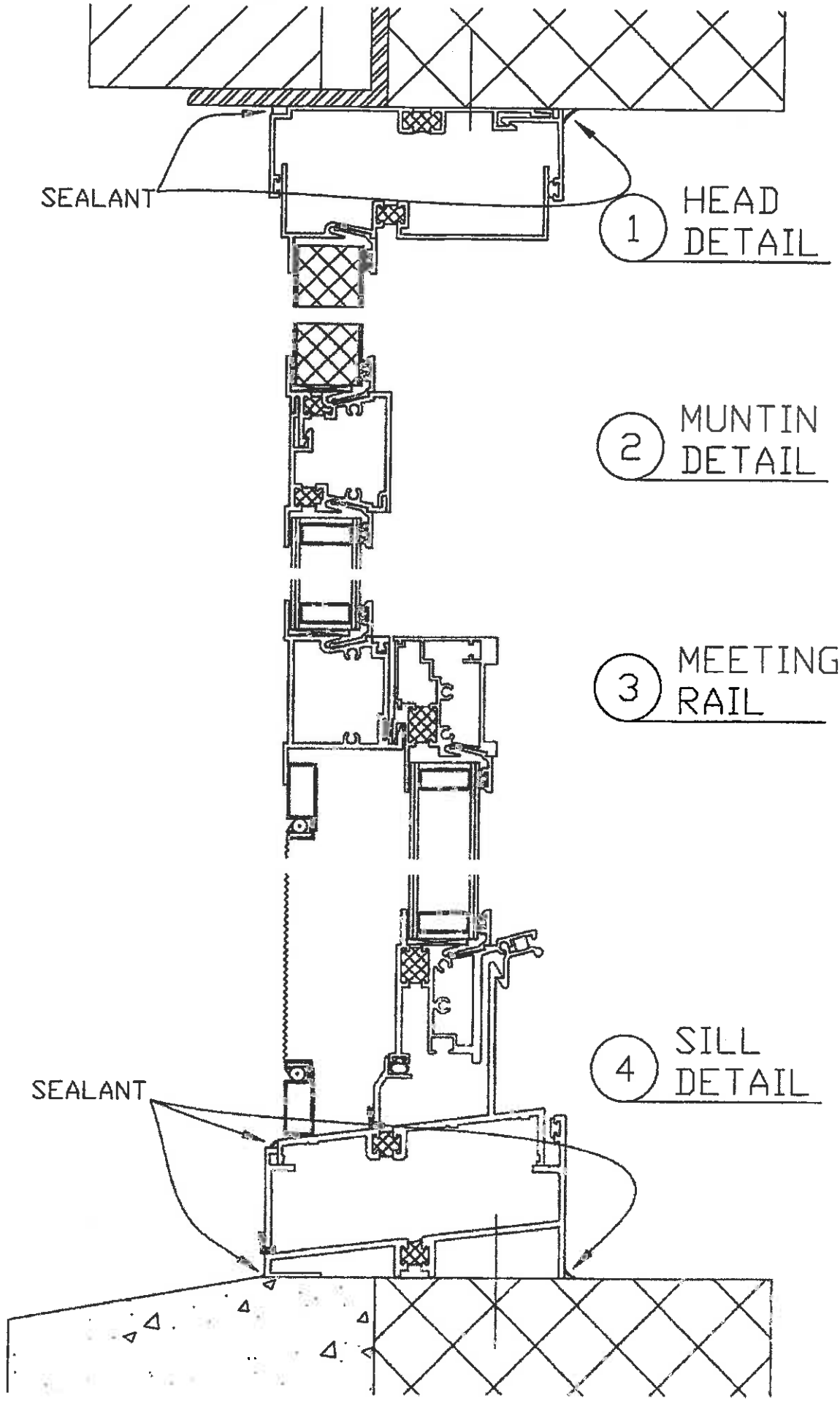
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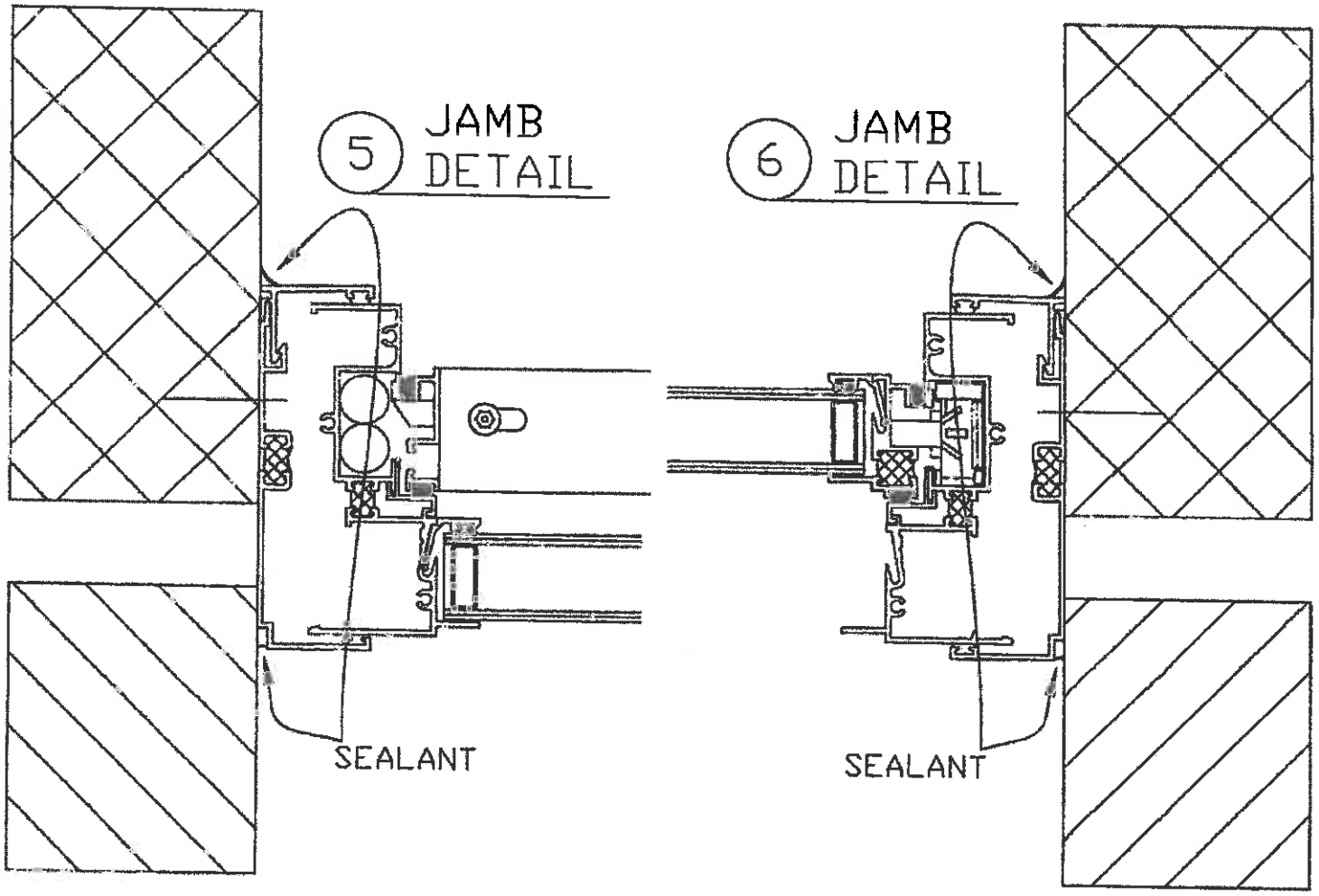
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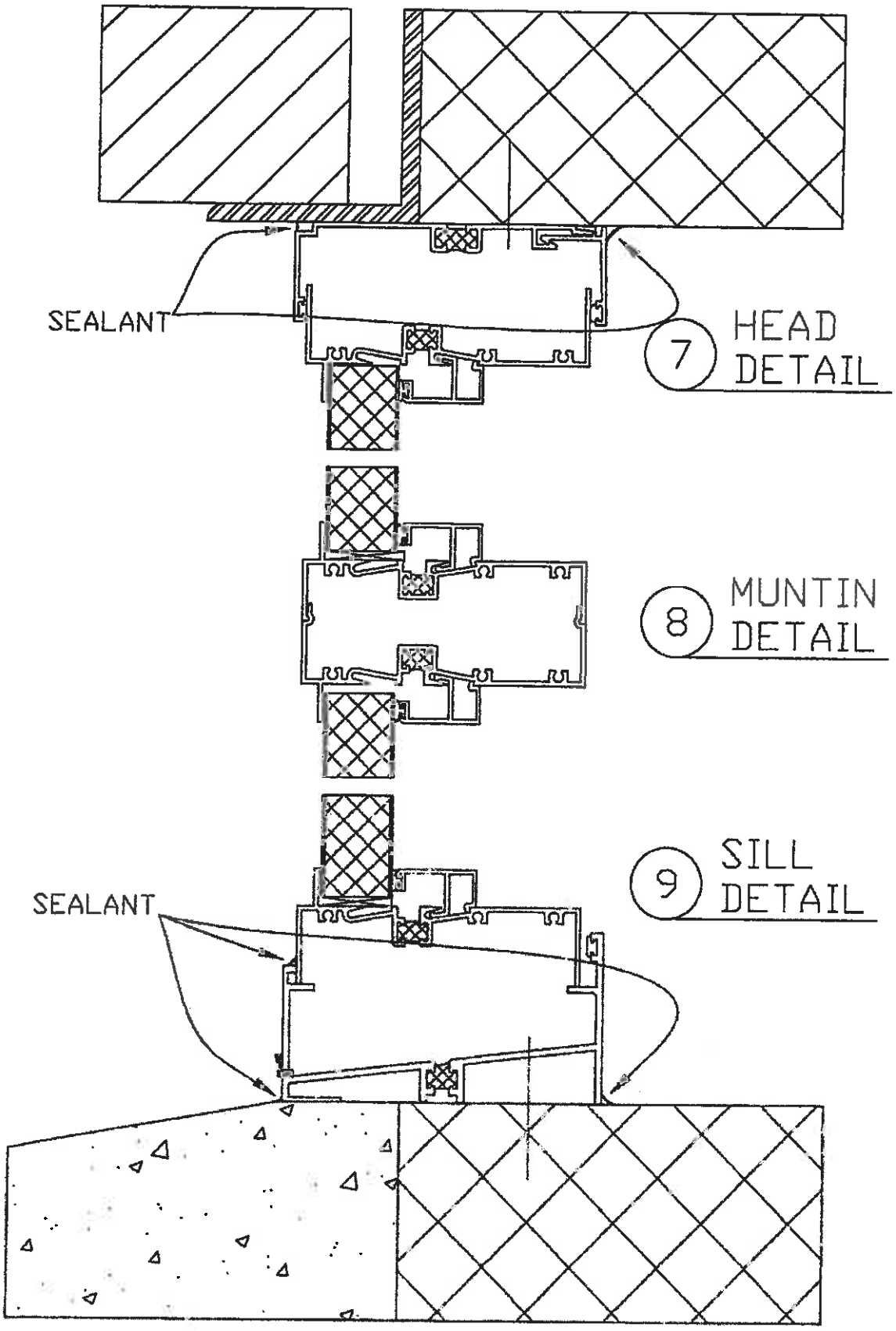
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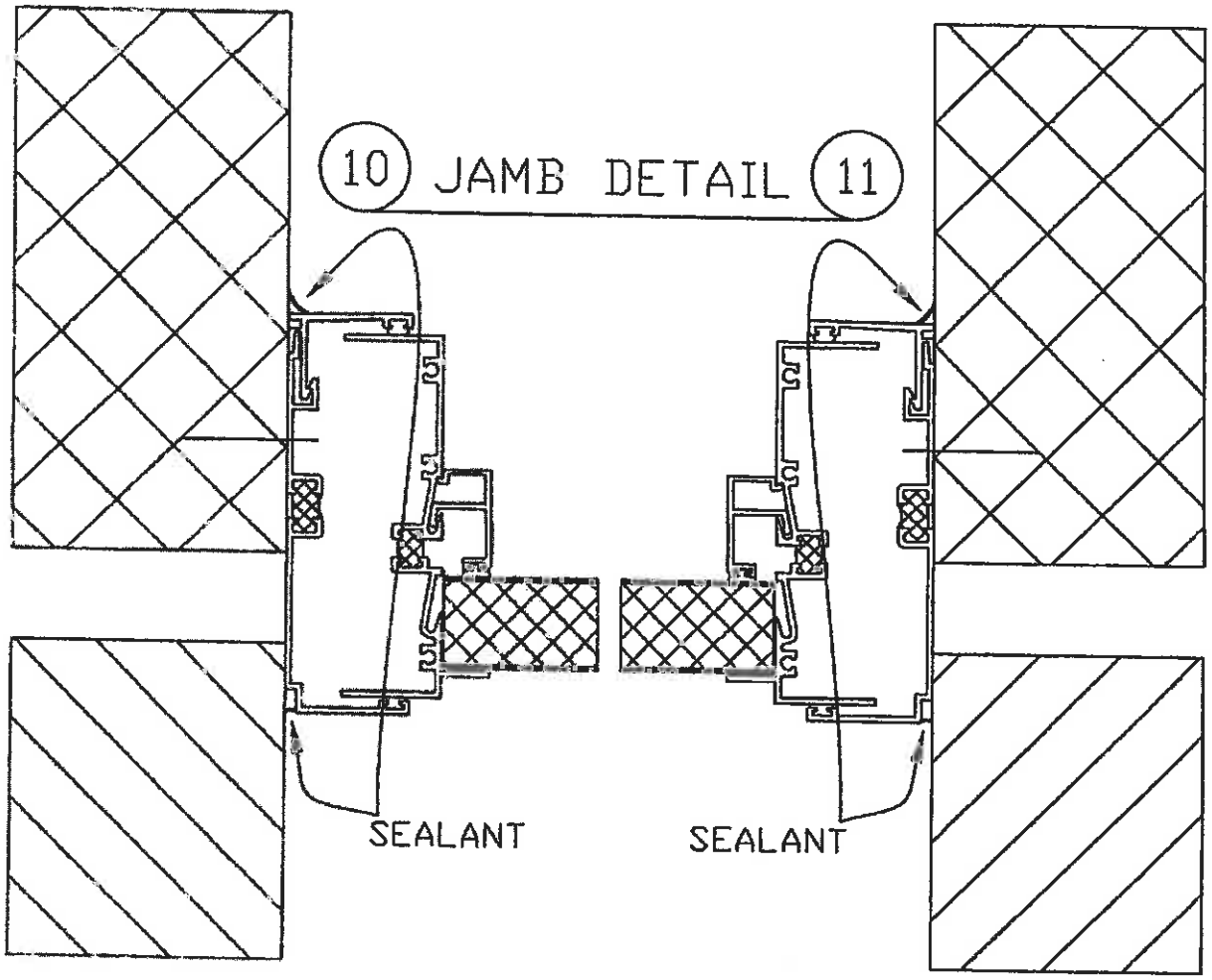
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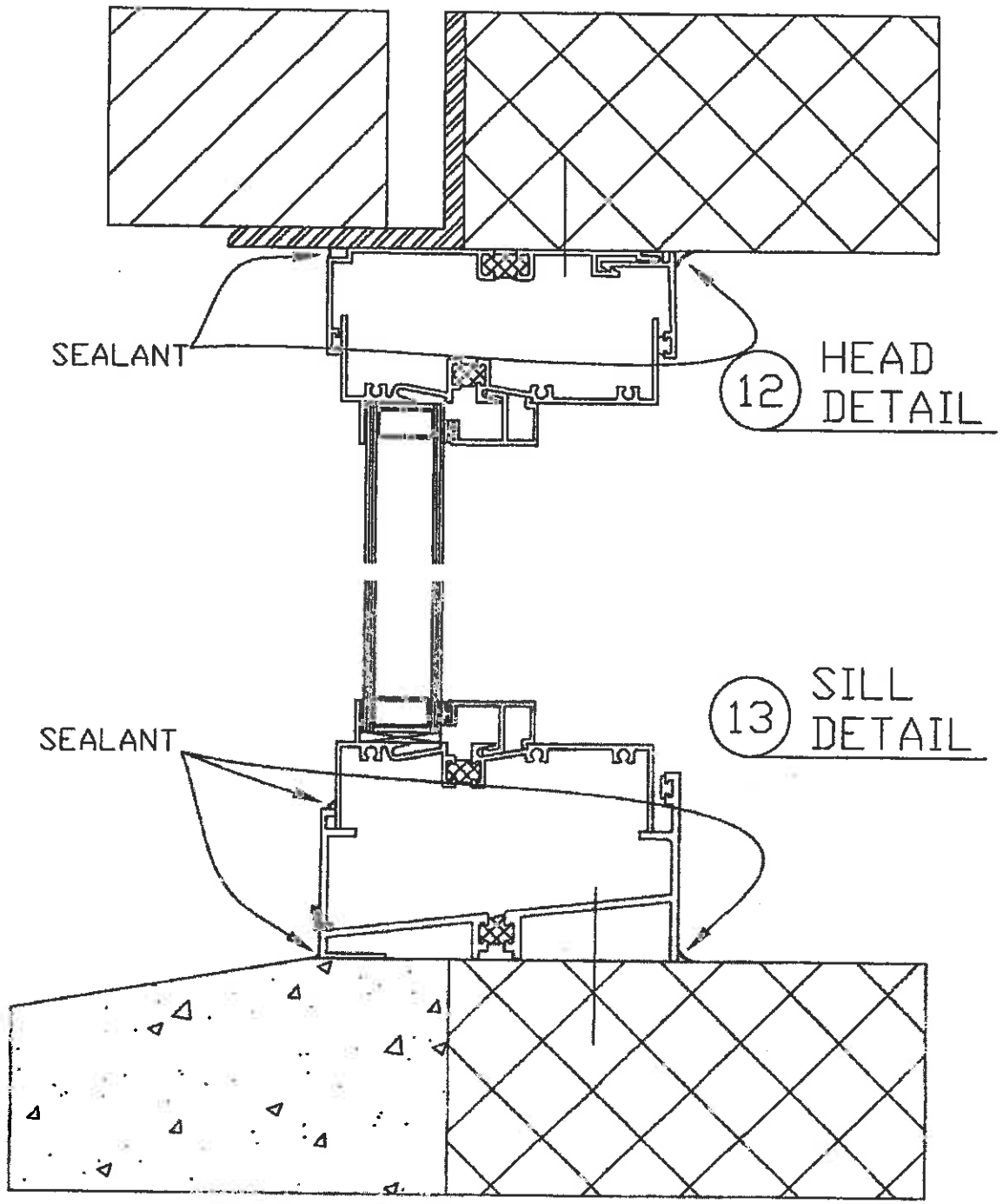
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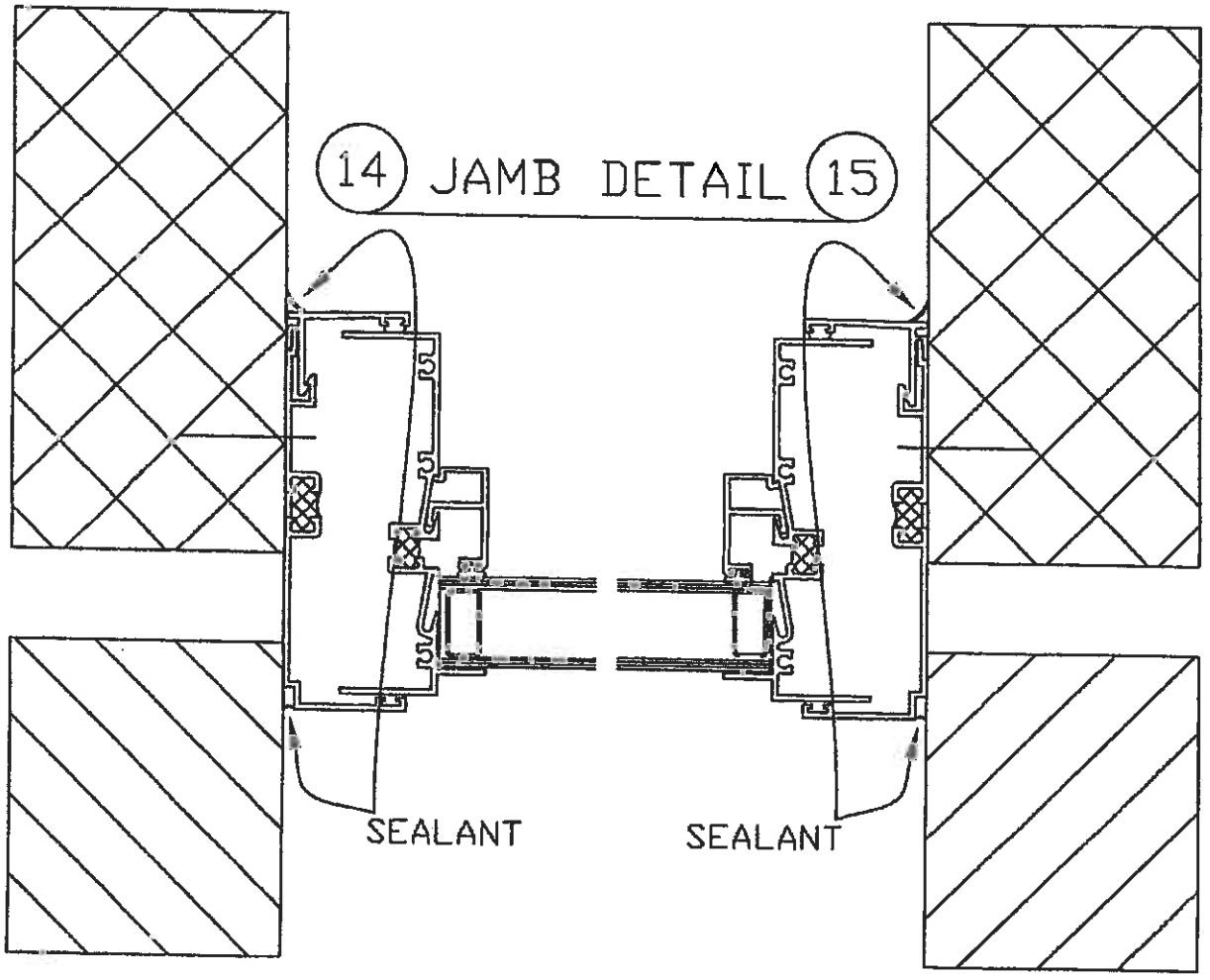
SEALANT
13 SILL DETAIL


14 JAMB DETAIL 15
SEALANT
SEALANT

ATTACHMENT 8

Lead-Based Paint Inspection and Settled Dust Sampling Report For Weatherford Armory

FINAL ABATEMENT REPORTS

FINAL REPORT

FOR

WEATHERFORD ARMORY

223 W. RAINEY AVE.

WEATHERFORD, OK

BY

ABATEMENT SYSTEMS, INC.
P.O. BOX 773
BROKEN ARROW, OK. 74013
(918) 251-2504 / (800) 256-2096
Abatement2@aol.com

WEATHERFORD ARMORY

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WASTE MANIFESTS

PHOTO DOCUMENTATION

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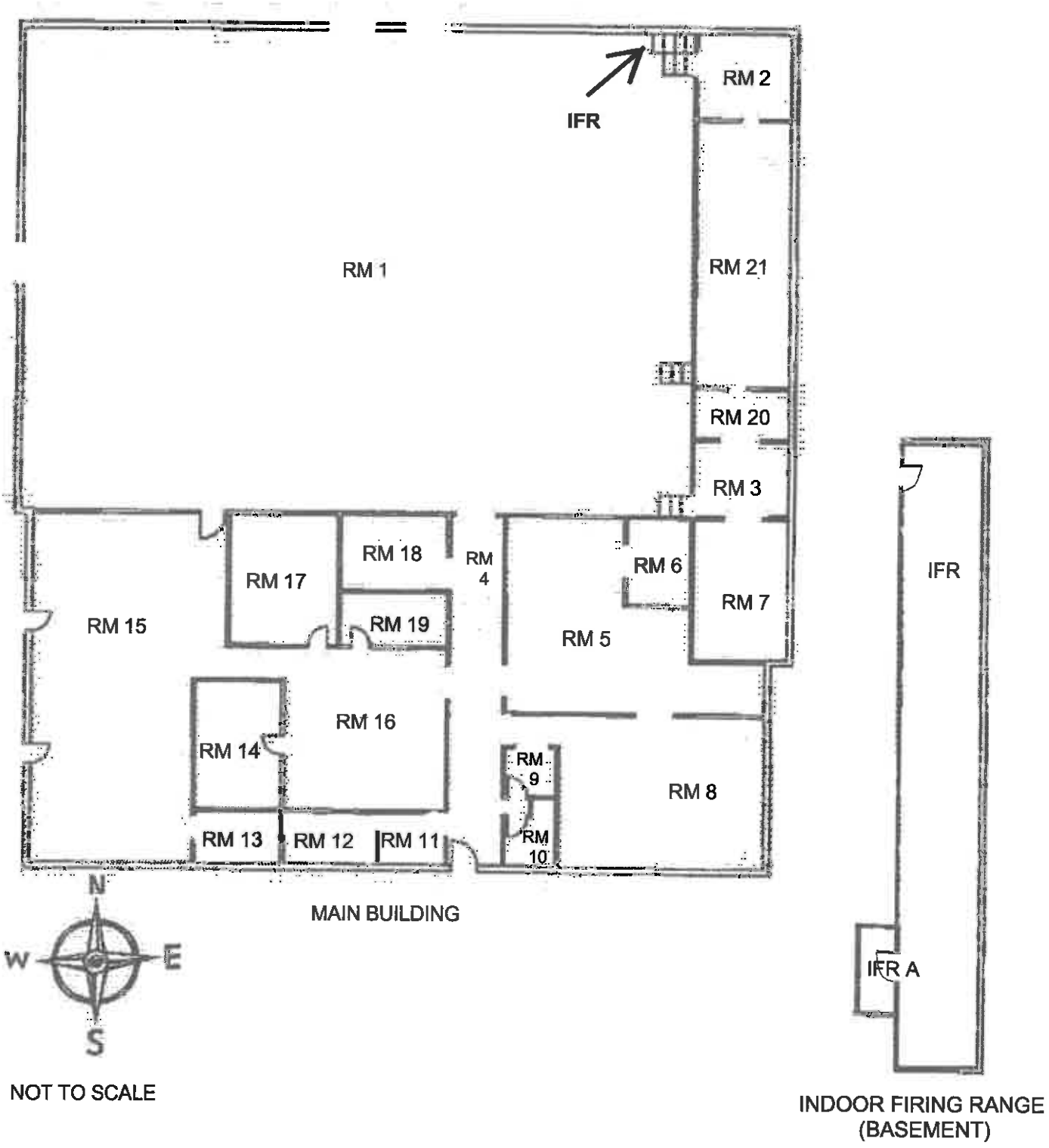
FLOOR PLAN



WEATHERFORD ARMORY

SUMMARY OF WORK

Asbestos abatement began upon arrival and preparation of abatement area. Non-friable asbestos window caulking/glazing was removed. Additional floor tile and mastic with non-friable asbestos was removed from two rooms not on initial drawings scheduled for removal (CO#1).

After preparing the work area(s) the Non-Friction and Non-Impact Surfaces were wet scraped, painted with an approved neutral colored primer and encapsulated with an approved elastometric encapsulant as specified per contract. All paint was removed from the drill floor hand rails and they were painted with an approved neutral colored primer. All interior and exterior window bars and wood window coverings were removed and, along with deteriorated paint, properly disposed.

As the areas became available the Friction and Impact Surfaces were abated as follows:

> All paint was visibly removed from the staircases(concrete steps) in the Room 1(Drill Floor). Then the steps were HEPA vacuumed, wet washed, and were sealed with an approved sealant.
>
> Windows were removed and replaced per contract. All interior and exterior window sills were HEPA vacuumed and wet washed after the windows were removed and replaced. Once the window sills were cleaned they were encapsulated with an approved lead-based paint encapsulant.
>
> Doors and door frames were removed/replaced per contract.

All lead-based paint removed from surfaces was deemed hazardous waste and was properly disposed along with the materials, HEPA filters, and other disposable items used.

After the Indoor Firing Range (IFR) was prepped, the walls, floor, ceiling, vent fan, and other structures were HEPA vacuumed and wet washed. Construction grout was applied in the IFR impact area and an approved two part epoxy mixture. Once the IFR was remediated to 200 ug/sf the floor, ceiling, and walls were sealed with approved sealant.

In the remaining building, surfaces above the floor(s) were cleaned to avoid recontamination of the floors. The floors were then HEPA vacuumed and wet washed.

Both DEQ and Marshall Environmental were notified for their clearance inspections.

WEATHERFORD ARMORY

SAMPLE RESULTS

Sample results to be furnished by others.

WEATHERFORD ARMORY

WASTE MANIFESTS

The removed asbestos window caulking/glazing(non-friable) and the removed floor tile and mastic(non-friable) are both non-regulated and were disposed properly as normal construction waste.

Hazardous lead waste has been stored securely awaiting disposal. Waste manifest(s) will be furnished when disposal accomplished.

WEATHERFORD ARMORY
PHOTO DOCUMENTATION

DOOR FRAME - STRIPPED OF
LBP TO BARE METAL

DOOR FRAME - STRIPPED OF
LBP TO BARE METAL

DOOR FRAME - STRIPPED OF LBP TO BARE METAL

DOOR FRAME - STRIPPED OF LBP TO BARE METAL

VAULT DOOR AND FRAME -
STRIPPED TO BARE METAL

VAULT DOOR AND FRAME -
STRIPPED TO BARE METAL

WINDOW SILL - STRIPPED OF LOOSE AND PEELING PAINT

DRILL FLOOR CLEANING

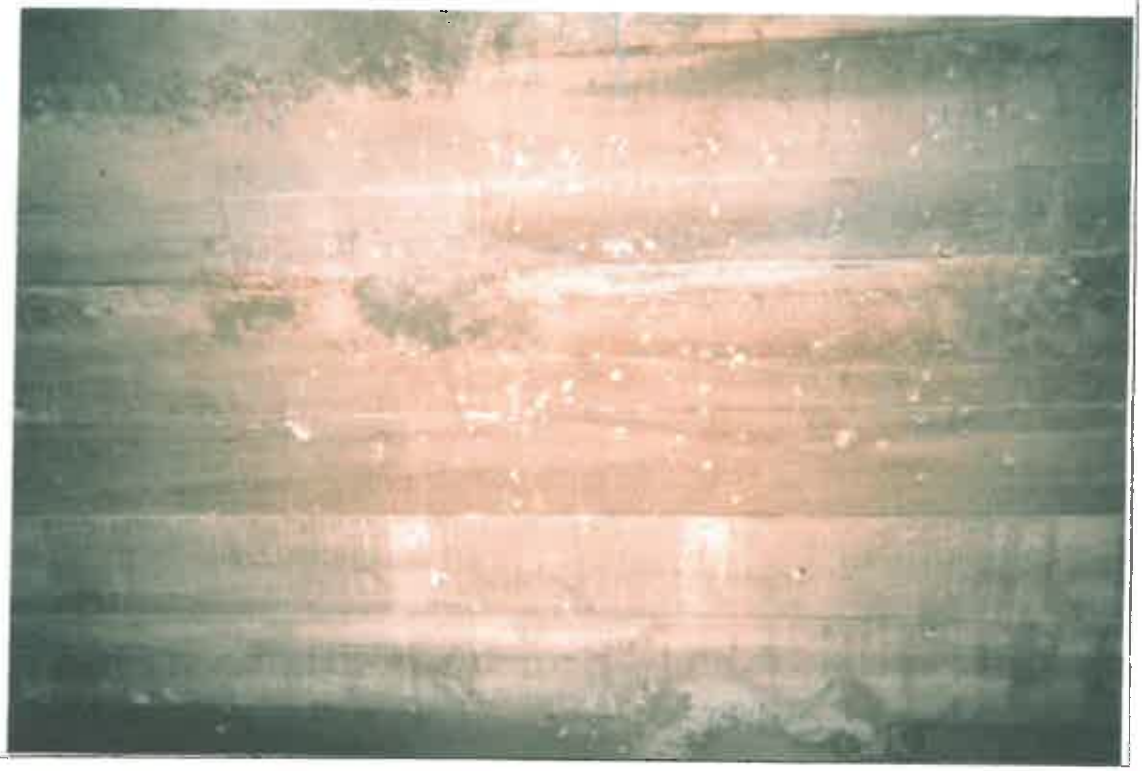
WEATHERFORD ARMORY
PHOTO DOCUMENTATION

IFR CLEANING

IFR CLEANING

IFR CLEANING

BULLET HOLES - IFR



BUILDIONG FLOOR CLEANING

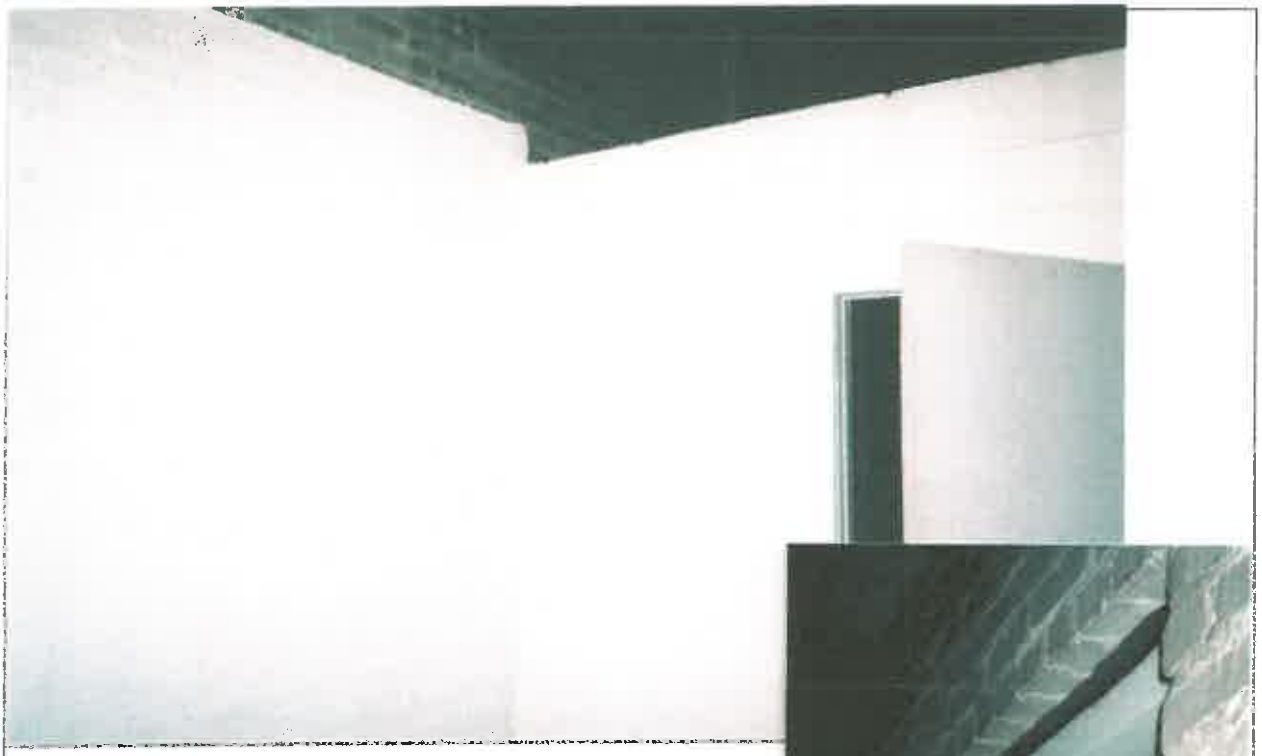
SEALED WALL AFTER LOOSE AND PEELING

SEALED FRAMES, NEW DOORS
AND WINDOWS

SEALED WINDOW LINTELS AND
SILLS

SEALED WINDOW LINTELS AND SILLS

SEALED WINDOW SILL



SEALED WALL

SEALED FRAME

SEALED FRAME

SEALED FRAME

HAND RAILS AND STEPS -
BEFORE ABATEMENT

HANDRAILS AND STEPS
AFTER SEALING

CONFIRMATION SAMPLING

WEATHERFORD ARMORY

223 W RAINEY AVENUE
WEATHERFORD, OK 73096

MAY 19, 2014 — *LEAD-CONFIRMATION SAMPLING*

CERTIFIED INDUSTRIAL HYGIENE SERVICES PROVIDED FOR:

Oklahoma Department of Environmental Quality
Land Protection Division
Care Of: Dustin Davidson, Environmental Programs Specialist
P.O. Box 1677
Oklahoma City, OK 73102
Phone: 405.702.5115
Email: dustin.davidson@deq.ok.gov

CERTIFIED INDUSTRIAL HYGIENE SERVICES PROVIDED BY:

Marshall Environmental Management, Incorporated
Attention: Jamie Marshall, Senior Industrial Hygiene Associate
1601 SW 89th Street, Suite A-100
Oklahoma City, OK 73159
Phone: 405.616.0401
Email: marshenv@swbell.net

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APPENDIX 11

WEATHERFORD ARMORY
LEAD-CONFIRMATION SAMPLING

CERTIFICATION

This is to certify that, Marshall Environmental Management, Incorporated (MEM) was contracted by the State of Oklahoma Construction and Properties Division, on behalf of the Oklahoma Department of Environmental Quality (ODEQ) Land Protection Division (LPD), to conduct Lead-Confirmation Sampling at the Weatherford Armory (223 West Rainey Avenue – Weatherford, Oklahoma). The confirmation sampling was performed by Lead-Based Paint (LBP) Inspector/Risk Assessors licensed by the ODEQ and under the direction of Dr. Charles L. Marshall Certified Industrial Hygienist (CIH) and President of MEM. The analytical data resulting from these sampling events is believed to accurately, reflect the concentrations of lead in surface dust at the time sampling was accomplished.

OWNER INFORMATION

State of Oklahoma

CERTIFIED LEAD-BASED PAINT INSPECTOR/RISK ASSESSOR

May 19, 2014

Jamie Marshall, M.S., Senior Industrial Hygiene Associate — ***Report Date***
ODEQ Certification Lead-Based Paint Inspector/Risk Assessor — *OKRASR13418*

CERTIFIED LEAD-BASED PAINT INSPECTOR/RISK ASSESSOR

May 19, 2014

Rachel Woods, B.S., Industrial Hygiene Associate — ***Report Date***
ODEQ Certification Lead-Based Paint Inspector/Risk Assessor — *OKRASR13701*

CERTIFIED LEAD-BASED PAINT FIRM

Marshall Environmental Management, Incorporated
ODEQ Lead-Based Paint Firm Certification: OKFIRM11160
1601 SW 89th Street, Suite A-100 | Oklahoma City, OK 73159
Phone: 405.616.0401 | Email: marshenv@swbell.net

ACCREDITED LABORATORY

Quantem Laboratories | AIHA ID: 101352

EXECUTIVE SUMMARY

As part of the ODEQ LPD Site Cleanup Assistance Program and Armory Cleanup Program and for the purpose of verifying that adequate abatement (i.e. removal) measures occurred, MEM representatives performed the Lead-Confirmation Sampling at the Weatherford Armory from November 6, 2013 through April 4, 2014. According to the Environmental Protection Agency (EPA)[1] and with regard to common floor surfaces, concentrations of lead in dust following remediation activities and prior to the application of a sealant, which are less than or equal to 40-micrograms per square foot ($\leq$40-$\mu g/ft^2$) are acceptable. With regard to windowsills, the EPA states that concentrations of lead in dust post-abatement/pre-sealant that are $\leq$250-ug/ft^2 are acceptable. And, according to the Departments of the Army and the Air Force National Guard Bureau[2], with regard to any horizontal surface within an indoor-firing-range (IFR), concentrations of lead in dust post abatement/pre sealant that are $\leq$200-$\mu g/ft^2$ are acceptable (40-ug/ft^2 in the case of child exposure). Following the application of an acrylic sealant to the walls, floors and ceiling of the IFR and IFR side room, the ODEQ adheres to the clearance level of 40-$\mu g/ft^2$ in the case of child exposure.

SAMPLING METHODOLOGY

The sample collection process was carried out in accordance with the regulations proposed by the EPA in 40 Code of Federal Regulations (CFR) part 745. Samples of settled dust were collected by selecting a surface area and then by placing a template of a known dimension firmly against the surface to be sampled. Next, the area within the template was wiped in a particular pattern utilizing a specific wipe. The wipe was then placed in an approved container; the container was labeled and the samples/sampling locations were recorded on the chain of custody. Lastly, samples were submitted, to an accredited laboratory, for analysis. The sampling locations and corresponding laboratory analyses are illustrated on the area diagram included in the appendix to this report.

ANALYTICAL SUMMARIES

On November 6, 2013 following lead-abatement activities (performed by Abatement Systems), 48-samples were collected (by an MEM representative) from various floor, wall and ceiling surfaces within the IFR and IFR side room. Of the 48-surface samples that were collected, 6-sample analyses exceeded the aforementioned Departments of the Army and the Air Force National Guard clearance level of 200-$\mu g/ft^2$. The following tables summarize the laboratory data resulting from each sampling event, and the ***bolded data*** represents lead concentrations that exceeded the appropriate clearance level.

TABLE I: 11-06-13 ANALYTICAL SUMMARY

SAMPLE ID	SAMPLE DESCRIPTION	ANALYTICAL RESULT	CLEARANCE LEVEL
1	IFR	**205-µg/ft.²**	200-µg/ft.²
2	IFR	180-µg/ft.²	200-µg/ft.²
3	IFR	102-µg/ft.²	200-µg/ft.²
4	IFR	164-µg/ft.²	200-µg/ft.²
5	IFR	93.7-µg/ft.²	200-µg/ft.²
6	IFR	**957-µg/ft.²**	200-µg/ft.²
7	IFR SIDE ROOM	59.5-µg/ft.²	200-µg/ft.²
8	IFR SIDE ROOM	**322-µg/ft.²**	200-µg/ft.²

[1] *Requirements for Lead-based Paint Activities in Target Housing and Child-occupied Facilities* (40 Code of Federal Regulations [CFR] Part 745)
[2] *Guidelines and Procedures for Rehabilitation and Conversion of Indoor Firing Ranges - http://www.ngbpdc.ngb.army.mil/pubs/420/ngpam420_15.pdf*

SAMPLE ID	SAMPLE DESCRIPTION	ANALYTICAL RESULT	CLEARANCE LEVEL
9	IFR SIDE ROOM	**213-µg/ft.²**	200-µg/ft.²
10	IFR	130-µg/ft.²	200-µg/ft.²
11	IFR	50.2-µg/ft.²	200-µg/ft.²
12	IFR	**364-µg/ft.²**	200-µg/ft.²
13	IFR	47.3-µg/ft.²	200-µg/ft.²
14	IFR	78.3-µg/ft.²	200-µg/ft.²
15	IFR	10.7-µg/ft.²	200-µg/ft.²
16	IFR	<9.00-µg/ft.²	200-µg/ft.²
17	IFR	<9.00-µg/ft.²	200-µg/ft.²
18	IFR	11.9-µg/ft.²	200-µg/ft.²
19	IFR	<9.00-µg/ft.²	200-µg/ft.²
20	IFR	<9.00-µg/ft.²	200-µg/ft.²
21	IFR	13.3-µg/ft.²	200-µg/ft.²
22	IFR	**204-µg/ft.²**	200-µg/ft.²
23	IFR	15.7-µg/ft.²	200-µg/ft.²
24	IFR	28.1-µg/ft.²	200-µg/ft.²
25	IFR	<9.00-µg/ft.²	200-µg/ft.²
26	IFR	34.4-µg/ft.²	200-µg/ft.²
27	IFR	12.3-µg/ft.²	200-µg/ft.²
28	IFR	<9.00-µg/ft.²	200-µg/ft.²
29	IFR	<9.00-µg/ft.²	200-µg/ft.²
30	IFR	<9.00-µg/ft.²	200-µg/ft.²
31	IFR	<9.00-µg/ft.²	200-µg/ft.²
32	IFR	<9.00-µg/ft.²	200-µg/ft.²
33	IFR	<9.00-µg/ft.²	200-µg/ft.²
34	IFR SIDE ROOM	12.5-µg/ft.²	200-µg/ft.²
35	IFR SIDE ROOM	16.9-µg/ft.²	200-µg/ft.²
36	IFR SIDE ROOM	36.7-µg/ft.²	200-µg/ft.²
37	IFR SIDE ROOM	<9.00-µg/ft.²	200-µg/ft.²
38	IFR SIDE ROOM	<9.00-µg/ft.²	200-µg/ft.²
39	IFR SIDE ROOM	<9.00-µg/ft.²	200-µg/ft.²
40	IFR SIDE ROOM	<9.00-µg/ft.²	200-µg/ft.²
41	IFR SIDE ROOM	<9.00-µg/ft.²	200-µg/ft.²
42	IFR SIDE ROOM	<9.00-µg/ft.²	200-µg/ft.²
43	IFR SIDE ROOM	13.3-µg/ft.²	200-µg/ft.²
44	IFR SIDE ROOM	<9.00-µg/ft.²	200-µg/ft.²
45	IFR SIDE ROOM	<9.00-µg/ft.²	200-µg/ft.²
46	IFR SIDE ROOM	<9.00-µg/ft.²	200-µg/ft.²
47	IFR SIDE ROOM	<9.00-µg/ft.²	200-µg/ft.²
48	IFR SIDE ROOM	<9.00-µg/ft.²	200-µg/ft.²

On February 20, 2013, supplemental lead-confirmation samples were collected within the IFR and IFR side room (by an MEM representative) following additional abatement activities that included the application of a two-part concrete epoxy on the back and side walls within the IFR. In addition to this, samples were collected from various surfaces in rooms 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 10A, 11, 12, 13, 14, 15, 16, 18, 20 and 21(outside the IFR). Of the 4-samples that were collected within the IFR and side room, none of the sample analyses exceeded the respective clearance level. Of the 62-samples that were collected from surfaces outside of the IFR and IFR side room, 47-sample analyses exceeded the respective clearance level.

TABLE II: 02-20-14 ANALYTICAL SUMMARY

SAMPLE ID	SAMPLE DESCRIPTION	ANALYTICAL RESULT	CLEARANCE LEVEL
1	IFR	61.6-µg/ft.^{2}	200-µg/ft.^{2}
2	IFR	51.2-µg/ft.^{2}	200-µg/ft.^{2}
3	IFR SIDE ROOM	62.6-µg/ft.^{2}	200-µg/ft.^{2}
4	IFR SIDE ROOM	35.3-µg/ft.^{2}	200-µg/ft.^{2}
5		**216-µg/ft.^{2}**	40-µg/ft.^{2}
6		**82.9-µg/ft.^{2}**	40-µg/ft.^{2}
7		**80.2-µg/ft.^{2}**	40-µg/ft.^{2}
8		**97.5-µg/ft.^{2}**	40-µg/ft.^{2}
9		**159-µg/ft.^{2}**	40-µg/ft.^{2}
10		**69.2-µg/ft.^{2}**	40-µg/ft.^{2}
11		**111-µg/ft.^{2}**	40-µg/ft.^{2}
12		**78.7-µg/ft.^{2}**	40-µg/ft.^{2}
13		**131-µg/ft.^{2}**	40-µg/ft.^{2}
14		**44.5-µg/ft.^{2}**	40-µg/ft.^{2}
15		**106-µg/ft.^{2}**	40-µg/ft.^{2}
16		**80.4-µg/ft.^{2}**	40-µg/ft.^{2}
17		**107-µg/ft.^{2}**	40-µg/ft.^{2}
18		**171-µg/ft.^{2}**	40-µg/ft.^{2}
19		**74.8-µg/ft.^{2}**	40-µg/ft.^{2}
20		**40.9-µg/ft.^{2}**	40-µg/ft.^{2}
21		**154-µg/ft.^{2}**	40-µg/ft.^{2}
22		**51.7-µg/ft.^{2}**	40-µg/ft.^{2}
23		**59.5-µg/ft.^{2}**	40-µg/ft.^{2}
24		**72.5-µg/ft.^{2}**	40-µg/ft.^{2}
25		**70.6-µg/ft.^{2}**	40-µg/ft.^{2}
26		39.0-µg/ft.^{2}	40-µg/ft.^{2}
27		**107-µg/ft.^{2}**	40-µg/ft.^{2}
28		**145-µg/ft.^{2}**	40-µg/ft.^{2}
29		**66.5-µg/ft.^{2}**	40-µg/ft.^{2}
30		**62.4-µg/ft.^{2}**	40-µg/ft.^{2}
31		**62.1-µg/ft.^{2}**	40-µg/ft.^{2}
32		**53.1-µg/ft.^{2}**	40-µg/ft.^{2}
33		27.2-µg/ft.^{2}	40-µg/ft.^{2}
34		22.8-µg/ft.^{2}	40-µg/ft.^{2}

SAMPLE ID	SAMPLE DESCRIPTION	ANALYTICAL RESULT	CLEARANCE LEVEL
35		**93.5-µg/ft.²**	40-µg/ft.²
36		**105-µg/ft.²**	40-µg/ft.²
37		26.2-µg/ft.²	40-µg/ft.²
38		32.1-µg/ft.²	40-µg/ft.²
39		37.9-µg/ft.²	40-µg/ft.²
40		28.4-µg/ft.²	40-µg/ft.²
41		36.6-µg/ft.²	40-µg/ft.²
42		**42.7-µg/ft.²**	40-µg/ft.²
43		38.0-µg/ft.²	40-µg/ft.²
44		21.5-µg/ft.²	40-µg/ft.²
45		37.7-µg/ft.²	40-µg/ft.²
46		**50.9-µg/ft.²**	40-µg/ft.²
47		**44.1-µg/ft.²**	40-µg/ft.²
48		**102-µg/ft.²**	40-µg/ft.²
49		**51.3-µg/ft.²**	40-µg/ft.²
50		**44.4-µg/ft.²**	40-µg/ft.²
51		**40.9-µg/ft.²**	40-µg/ft.²
52		**49.6-µg/ft.²**	40-µg/ft.²
53		**43.8-µg/ft.²**	40-µg/ft.²
54		**51.3-µg/ft.²**	40-µg/ft.²
55		**94.9-µg/ft.²**	40-µg/ft.²
56		**208-µg/ft.²**	40-µg/ft.²
57		**394-µg/ft.²**	40-µg/ft.²
58		**58.2-µg/ft.²**	40-µg/ft.²
59		**74.9-µg/ft.²**	40-µg/ft.²
60		24.0-µg/ft.²	40-µg/ft.²
61		13.8-µg/ft.²	40-µg/ft.²
62		14.6-µg/ft.²	40-µg/ft.²
63		11.4-µg/ft.²	40-µg/ft.²
64		**175-µg/ft.²**	40-µg/ft.²
65		**48.5-µg/ft.²**	40-µg/ft.²
66		**154-µg/ft.²**	40-µg/ft.²

On March 12, 2014, following supplemental abatement efforts 46-samples were collected (by an MEM representative) from floor surfaces within rooms 1, 2, 3, 4, 5, 6, 7, 11, 12, 13, 15, 16, 18, 20 and 21 (outside of the IFR). Of the 46-samples that were collected, 2-samples analyses exceeded the EPA clearance level of 40-µg/ft^2.

TABLE III: 03-12-14 ANALYTICAL SUMMARY

SAMPLE ID	SAMPLE DESCRIPTION	ANALYTICAL RESULT	CLEARANCE LEVEL
1		<9.00-µg/ft.^{2}	40-µg/ft.^{2}
2		17.0-µg/ft.^{2}	40-µg/ft.^{2}
3		<9.00-µg/ft.^{2}	40-µg/ft.^{2}
4		<9.00-µg/ft.^{2}	40-µg/ft.^{2}
5		15.5-µg/ft.^{2}	40-µg/ft.^{2}
6		<9.00-µg/ft.^{2}	40-µg/ft.^{2}
7		19.0-µg/ft.^{2}	40-µg/ft.^{2}
8		<9.00-µg/ft.^{2}	40-µg/ft.^{2}
9		<9.00-µg/ft.^{2}	40-µg/ft.^{2}
10		<9.00-µg/ft.^{2}	40-µg/ft.^{2}
11		9.92-µg/ft.^{2}	40-µg/ft.^{2}
12		<9.00-µg/ft.^{2}	40-µg/ft.^{2}
13		**55.7-µg/ft.^{2}**	40-µg/ft.^{2}
14		13.6-µg/ft.^{2}	40-µg/ft.^{2}
15		<9.00-µg/ft.^{2}	40-µg/ft.^{2}
16		**56.6-µg/ft.^{2}**	40-µg/ft.^{2}
17		15.5-µg/ft.^{2}	40-µg/ft.^{2}
18		20.1-µg/ft.^{2}	40-µg/ft.^{2}
19		<9.00-µg/ft.^{2}	40-µg/ft.^{2}
20		<9.00-µg/ft.^{2}	40-µg/ft.^{2}
21		10.6-µg/ft.^{2}	40-µg/ft.^{2}
22		<9.00-µg/ft.^{2}	40-µg/ft.^{2}
23		<9.00-µg/ft.^{2}	40-µg/ft.^{2}
24		<9.00-µg/ft.^{2}	40-µg/ft.^{2}
25		10.4-µg/ft.^{2}	40-µg/ft.^{2}
26		<9.00-µg/ft.^{2}	40-µg/ft.^{2}
27		<9.00-µg/ft.^{2}	40-µg/ft.^{2}
28		12.5-µg/ft.^{2}	40-µg/ft.^{2}
29		<9.00-µg/ft.^{2}	40-µg/ft.^{2}
30		<9.00-µg/ft.^{2}	40-µg/ft.^{2}
31		<9.00-µg/ft.^{2}	40-µg/ft.^{2}
32		<9.00-µg/ft.^{2}	40-µg/ft.^{2}
33		<9.00-µg/ft.^{2}	40-µg/ft.^{2}
34		<9.00-µg/ft.^{2}	40-µg/ft.^{2}
35		13.4-µg/ft.^{2}	40-µg/ft.^{2}
36		<9.00-µg/ft.^{2}	40-µg/ft.^{2}
37		<9.00-µg/ft.^{2}	40-µg/ft.^{2}
38		<9.00-µg/ft.^{2}	40-µg/ft.^{2}

SAMPLE ID	SAMPLE DESCRIPTION	ANALYTICAL RESULT	CLEARANCE LEVEL
39		<9.00-µg/ft.²	40-µg/ft.²
40		16.3-µg/ft.²	40-µg/ft.²
41		19.0-µg/ft.²	40-µg/ft.²
42		<9.00-µg/ft.²	40-µg/ft.²
43		<9.00-µg/ft.²	40-µg/ft.²
44		<9.00-µg/ft.²	40-µg/ft.²
45		<9.00-µg/ft.²	40-µg/ft.²
46		18.2-µg/ft.²	40-µg/ft.²

Following supplemental abatement activities, 2-surface samples were collected (by an MEM representative) in rooms 3 and 20 (outside the IFR and IFR side room) on March 20, 2014. One-sample analyses exceeded the EPA clearance l level of 40-µg/ft^2.

TABLE IV: 03-20-14 ANALYTICAL SUMMARY

SAMPLE ID	SAMPLE DESCRIPTION	ANALYTICAL RESULT	CLEARANCE LEVEL
1		**49.3-µg/ft.²**	40-µg/ft.²
2		11.7-µg/ft.²	40-µg/ft.²

On April 4, 2014, additional samples were collected (by an MEM representative) from various surfaces within the IFR following supplemental abatement activities that included the application of an acrylic sealant that was sprayed on all walls, floors and ceilings of the IFR and IFR side room. Additional samples were also collected from floor surfaces in room 17 and 20 (outside the IFR and IFR side room). Of the 48-samples that were collected within the IFR and IFR side room, none of the sample analyses exceeded the Army and Air Force National Guard clearance level of 40-µg/ft^2 in the case of child exposure. Of the 4-samples that were collected from floor surfaces outside the IFR, none of the sample analyses exceeded the EPA clearance level of ≤40-µg/ft^2.

TABLE V: 04-04-14 ANALYTICAL SUMMARY

SAMPLE ID	SAMPLE DESCRIPTION	ANALYTICAL RESULT	CLEARANCE LEVEL
1	IFR	<9.00-µg/ft.²	40-µg/ft.²
2	IFR	11.2-µg/ft.²	40-µg/ft.²
3	IFR	<9.00-µg/ft.²	40-µg/ft.²
4	IFR	<9.00-µg/ft.²	40-µg/ft.²
5	IFR	20.4-µg/ft.²	40-µg/ft.²
6	IFR	<9.00-µg/ft.²	40-µg/ft.²
7	IFR	<9.00-µg/ft.²	40-µg/ft.²
8	IFR	<9.00-µg/ft.²	40-µg/ft.²
9	IFR	<9.00-µg/ft.²	40-µg/ft.²
10	IFR	<9.00-µg/ft.²	40-µg/ft.²
11	IFR	<9.00-µg/ft.²	40-µg/ft.²
12	IFR	<9.00-µg/ft.²	40-µg/ft.²
13	IFR	<9.00-µg/ft.²	40-µg/ft.²
14	IFR	<9.00-µg/ft.²	40-µg/ft.²

SAMPLE ID	SAMPLE DESCRIPTION	ANALYTICAL RESULT	CLEARANCE LEVEL
15	IFR	<9.00-µg/ft.²	40-µg/ft.²
16	IFR	<9.00-µg/ft.²	40-µg/ft.²
17	IFR	<9.00-µg/ft.²	40-µg/ft.²
18	IFR	<9.00-µg/ft.²	40-µg/ft.²
19	IFR	<9.00-µg/ft.²	40-µg/ft.²
20	IFR	<9.00-µg/ft.²	40-µg/ft.²
21	IFR	<9.00-µg/ft.²	40-µg/ft.²
22	IFR	<9.00-µg/ft.²	40-µg/ft.²
23	IFR	<9.00-µg/ft.²	40-µg/ft.²
24	IFR	<9.00-µg/ft.²	40-µg/ft.²
25	IFR	<9.00-µg/ft.²	40-µg/ft.²
26	IFR	<9.00-µg/ft.²	40-µg/ft.²
27	IFR	<9.00-µg/ft.²	40-µg/ft.²
28	IFR	<9.00-µg/ft.²	40-µg/ft.²
29	IFR	<9.00-µg/ft.²	40-µg/ft.²
30	IFR	<9.00-µg/ft.²	40-µg/ft.²
31	IFR SIDE ROOM	<9.00-µg/ft.²	40-µg/ft.²
32	IFR SIDE ROOM	<9.00-µg/ft.²	40-µg/ft.²
33	IFR SIDE ROOM	<9.00-µg/ft.²	40-µg/ft.²
34	IFR SIDE ROOM	<9.00-µg/ft.²	40-µg/ft.²
35	IFR SIDE ROOM	<9.00-µg/ft.²	40-µg/ft.²
36	IFR SIDE ROOM	<9.00-µg/ft.²	40-µg/ft.²
37	IFR SIDE ROOM	<9.00-µg/ft.²	40-µg/ft.²
38	IFR SIDE ROOM	<9.00-µg/ft.²	40-µg/ft.²
39	IFR SIDE ROOM	<9.00-µg/ft.²	40-µg/ft.²
40	IFR SIDE ROOM	<9.00-µg/ft.²	40-µg/ft.²
41	IFR SIDE ROOM	<9.00-µg/ft.²	40-µg/ft.²
42	IFR SIDE ROOM	<9.00-µg/ft.²	40-µg/ft.²
43	IFR SIDE ROOM	<9.00-µg/ft.²	40-µg/ft.²
44	IFR SIDE ROOM	<9.00-µg/ft.²	40-µg/ft.²
45	IFR SIDE ROOM	<9.00-µg/ft.²	40-µg/ft.²
46	IFR SIDE ROOM	<9.00-µg/ft.²	40-µg/ft.²
47	IFR SIDE ROOM	<9.00-µg/ft.²	40-µg/ft.²
48	IFR SIDE ROOM	<9.00-µg/ft.²	40-µg/ft.²
49		10.4-µg/ft.²	40-µg/ft.²
50		<9.00-µg/ft.²	40-µg/ft.²
51		11.5-µg/ft.²	40-µg/ft.²
52		<9.00-µg/ft.²	40-µg/ft.²

APPENDIX

CHAIN OF CUSTODY FORMS & ANALYTICAL DATA

AREA DIAGRAMS

CERTIFICATES/LICENSURE

LEAD CHAIN OF CUSTODY

QUANTEM LABORATORIES
www.QuanTEM.com
2033 Heritage Park Drive, Oklahoma City, OK 73120-7502
(800) 822-1650 • (405) 755-7272 • Fax: (405) 755-2058

LEGAL DOCUMENT - PLEASE PRINT LEGIBLY

For Lab Use Only	
Lab No.	238903
	Accept / Reject

Report Results (☑ one box)	
	QuanTEM Website
	Other D. Davidson

Contact Information		Project Information	
Company: Marshall Environmental	Phone: (405) 361-8138	Project Name: Weatherford Armory	
Contact: Jamie Marshall	Cell Phone:	Project Location:	
Account #:	E-mail:	Project ID: 0298-LBP-110613	

Sampled By:	Name: Jamie Marshall	Date: 11/06/2013

RELINQUISHED BY	DATE & TIME	VIA	RECEIVED BY	DATE & TIME
[signature]	11/6/13 1730	Hand/DropBox	S. Roftwick	11/7/13 8:00

REQUESTED SERVICES (Please ☑ the Appropriate Boxes)

No.	Sample ID (10 Characters Max)	Sample Description	Volume (Liters)	Volume Area (Length x Width)	Sample Matrix (see matrix code box)	Analysis: Pb	Analysis:	Analysis:	Units (☑ ONE box only): PPM	Wt %	mg / l	µg / ft²	µg / m³	mg / cm²
1	1	IFR Floor North	N/A	144in2	C	X						X		
2	2	IFR Floor North												
3	3	IFR Floor North												
4	4	IFR Floor South												
5	5	IFR Floor South												
6	6	IFR Floor South												
7	7	Side Room Floor												
8	8	Side Room Floor												
9	9	Side Room Floor												
10	10	IFR South Wall												
11	11	IFR South Wall												
12	12	IFR South Wall	✓	↓	↓	↓						↓		

Sample Matrix Codes	
A	Soil
B	Paint Chips
C	Surface / Dust Wipes
D	Bulk Miscellaneous
E	Air Cassette

TURNAROUND TIME	
	Same Day
X	24 - Hour
	3 - Day
	5 - Day

SATURDAY SAMPLE DELIVERY - CALL TO SCHEDULE • Use this address for Saturday Delivery only: 4220 N. Santa Fe Ave., Oklahoma City, OK 73105-8517 • Mark Package "Hold for Saturday Pickup"

QUANTEM LABORATORIES
www.QuanTEM.com

LEAD CHAIN OF CUSTODY

2033 Heritage Park Drive, Oklahoma City, OK 73120-7502
(800) 822-1650 • (405) 755-7272 • Fax: (405) 755-2058

LEGAL DOCUMENT - PLEASE PRINT LEGIBLY

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Lab No. 228703	
(Accept)	Reject

Project Information

Company: Marshall Environmental | Project Name: Weatherford Armory | Project Location:

REQUESTED SERVICES (Please ☑ the Appropriate Boxes)

No.	Sample ID (10 Characters Max)	Sample Description	Volume (Liters)	Volume Area (Length x Width)	Sample Matrix (see matrix code box)	Analysis			Units (☑ ONE box only)					
						Pb			PPM	Wt %	mg / l	µg /ft²	µg / m³	mg / cm²
13	13	IFR South Ceiling	N/A	144in²	C	X						X		
14	14	IFR South Ceiling												
15	15	IFR South Ceiling												
16	16	IFR North Ceiling												
17	17	IFR North Ceiling												
18	18	IFR North Ceiling												
19	19	IFR North Wall												
20	20	IFR North Wall												
21	21	IFR North Wall												
22	22	IFR SE Wall												
23	23	IFR SE Wall												
24	24	IFR SE Wall												
25	25	IFR NE Wall												
26	26	IFR NE Wall												
27	27	IFR NE Wall												
28	28	IFR SW Wall												
29	29	IFR SW Wall												
30	30	IFR SW Wall												

Sample Matrix Codes	
A	Soil
B	Paint Chips
C	Surface / Dust Wipes
D	Bulk Miscellaneous
E	Air Cassette

SATURDAY SAMPLE DELIVERY - CALL TO SCHEDULE • Use this address for Saturday Delivery only: 4220 N. Santa Fe Ave., Oklahoma City, OK 73105-8517 • Mark Package "Hold for Saturday Pickup"

QUANTEM LABORATORIES

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LEAD CHAIN OF CUSTODY

2033 Heritage Park Drive, Oklahoma City, OK 73120-7502
(800) 822-1650 • (405) 755-7272 • Fax: (405) 755-2058

LEGAL DOCUMENT - PLEASE PRINT LEGIBLY

For Lab Use Only	
Lab No.	328903
(Accept)	Reject

Project Information

Company: Marshall Environmental | Project Name: Weatherford Armory | Project Location:

REQUESTED SERVICES (Please ☑ the Appropriate Boxes)

No.	Sample ID (10 Characters Max)	Sample Description	Volume (Liters)	Volume Area (Length x Width)	Sample Matrix (see matrix code box)	Analysis			Units (☑ ONE box only)					
						Pb			PPM	Wt %	mg / l	µg /ft²	µg / m³	mg / cm²
13	31	IFR NW Wall	N/A	144 in²	C	X						X		
14	32	IFR NW Wall												
15	33	IFR NW Wall												
16	34	Side Room Ceiling												
17	35	Side Room Ceiling												
18	36	Side Room Ceiling												
19	37	Side Room E Wall												
20	38	Side Room E Wall												
21	39	Side Room E Wall												
22	40	Side Room N Wall												
23	41	Side Room N Wall												
24	42	Side Room N Wall												
25	43	Side Room W Wall												
26	44	Side Room W Wall												
27	45	Side Room W Wall												
28	46	Side Room S Wall												
29	47	Side Room S Wall												
30	48	Side Room S Wall												

Sample Matrix Codes	
A	Soil
B	Paint Chips
C	Surface / Dust Wipes
D	Bulk Miscellaneous
E	Air Cassette

SATURDAY SAMPLE DELIVERY - CALL TO SCHEDULE • Use this address for Saturday Delivery only: 4220 N. Santa Fe Ave., Oklahoma City, OK 73105-8517 • Mark Package "Hold for Saturday Pickup"

QUANTEM LABORATORIES

2033 Heritage Park Drive / Oklahoma City, OK 73120 / (405) 755-7272 / Fax (405) 755-2058

Environmental Chemistry Analysis Report

QuanTEM Set ID: 228903
Date Received: 11/07/13
Received By: Sherrie Leftwich
Date Sampled:
Time Sampled:
Analyst: CC
Date of Report: 11/8/2013

AIHA ID: 101352

Client: Marshall Environmental Management, Inc.
1601 SW 89th Street, Ste. A-100
Oklahoma City, OK 73159

Acct. No.: A331

Project: Weatherford Armory
Location: N/A
Project No.: 0298-LBP-110613

QuanTEM ID	Client ID	Matrix	Parameter	Results	Reporting Limits	Units	Date/Time Analyzed	Method
001	1	Wipe	Lead	205	9	ug/sq. Ft.	11/07/13 14:00	W NIOSH 9100
002	2	Wipe	Lead	180	9	ug/sq. Ft.	11/07/13 14:00	W NIOSH 9100
003	3	Wipe	Lead	102	9	ug/sq. Ft.	11/07/13 14:00	W NIOSH 9100
004	4	Wipe	Lead	164	9	ug/sq. Ft.	11/07/13 14:00	W NIOSH 9100
005	5	Wipe	Lead	93.7	9	ug/sq. Ft.	11/07/13 14:00	W NIOSH 9100
006	6	Wipe	Lead	957	9	ug/sq. Ft.	11/07/13 14:00	W NIOSH 9100
007	7	Wipe	Lead	59.5	9	ug/sq. Ft.	11/07/13 14:00	W NIOSH 9100
008	8	Wipe	Lead	322	9	ug/sq. Ft.	11/07/13 14:00	W NIOSH 9100
009	9	Wipe	Lead	213	9	ug/sq. Ft.	11/07/13 14:00	W NIOSH 9100
010	10	Wipe	Lead	130	9	ug/sq. Ft.	11/07/13 14:00	W NIOSH 9100
011	11	Wipe	Lead	50.2	9	ug/sq. Ft.	11/07/13 14:00	W NIOSH 9100
012	12	Wipe	Lead	364	9	ug/sq. Ft.	11/07/13 14:00	W NIOSH 9100
013	13	Wipe	Lead	47.3	9	ug/sq. Ft.	11/07/13 14:00	W NIOSH 9100
014	14	Wipe	Lead	78.3	9	ug/sq. Ft.	11/07/13 14:00	W NIOSH 9100
015	15	Wipe	Lead	10.7	9	ug/sq. Ft.	11/07/13 14:00	W NIOSH 9100
016	16	Wipe	Lead	<9.00	9	ug/sq. Ft.	11/07/13 14:00	W NIOSH 9100
017	17	Wipe	Lead	<9.00	9	ug/sq. Ft.	11/07/13 14:00	W NIOSH 9100

Note: Sample results have not been corrected for blank values.

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Unless otherwise noted, upon receipt the condition of the sample was acceptable for analysis.

Wipe materials must meet ASTM E1792 criteria. Method detection limits and resultant reporting limits may not be valid for non-ASTM E1792 wipe material.

EPA Method 7000B (1) = EPA 600/R-93/200 Preparation Modified. EPA 7000B Analysis Modified

EPA Method 7082 (2) = EPA 600/R-93/200 Preparation Modified. EPA 7082 Analysis Modified

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Environmental Chemistry Analysis Report

QuanTEM Set ID: 228903
Date Received: 11/07/13
Received By: Sherrie Leftwich
Date Sampled:
Time Sampled:
Analyst: CC
Date of Report: 11/8/2013

AIHA ID: 101352

Client: Marshall Environmental Management, Inc.
1601 SW 89th Street, Ste. A-100
Oklahoma City, OK 73159

Acct. No.: A331

Project: Weatherford Armory
Location: N/A
Project No.: 0298-LBP-110613

QuanTEM ID	Client ID	Matrix	Parameter	Results	Reporting Limits	Units	Date/Time Analyzed	Method
018	18	Wipe	Lead	11.9	9	ug/sq. Ft.	11/07/13 14:00	W NIOSH 9100
019	19	Wipe	Lead	<9.00	9	ug/sq. Ft.	11/07/13 14:00	W NIOSH 9100
020	20	Wipe	Lead	<9.00	9	ug/sq. Ft.	11/07/13 14:00	W NIOSH 9100
021	21	Wipe	Lead	13.3	9	ug/sq. Ft.	11/07/13 14:00	W NIOSH 9100
022	22	Wipe	Lead	204	9	ug/sq. Ft.	11/07/13 14:00	W NIOSH 9100
023	23	Wipe	Lead	15.7	9	ug/sq. Ft.	11/07/13 14:00	W NIOSH 9100
024	24	Wipe	Lead	28.1	9	ug/sq. Ft.	11/07/13 14:00	W NIOSH 9100
025	25	Wipe	Lead	<9.00	9	ug/sq. Ft.	11/07/13 14:00	W NIOSH 9100
026	26	Wipe	Lead	34.4	9	ug/sq. Ft.	11/07/13 14:00	W NIOSH 9100
027	27	Wipe	Lead	12.3	9	ug/sq. Ft.	11/07/13 14:00	W NIOSH 9100
028	28	Wipe	Lead	<9.00	9	ug/sq. Ft.	11/07/13 14:00	W NIOSH 9100
029	29	Wipe	Lead	<9.00	9	ug/sq. Ft.	11/07/13 14:00	W NIOSH 9100
030	30	Wipe	Lead	<9.00	9	ug/sq. Ft.	11/07/13 14:00	W NIOSH 9100
031	31	Wipe	Lead	<9.00	9	ug/sq. Ft.	11/07/13 14:00	W NIOSH 9100
032	32	Wipe	Lead	<9.00	9	ug/sq. Ft.	11/07/13 14:00	W NIOSH 9100
033	33	Wipe	Lead	<9.00	9	ug/sq. Ft.	11/07/13 14:00	W NIOSH 9100
034	34	Wipe	Lead	12.5	9	ug/sq. Ft.	11/07/13 14:00	W NIOSH 9100

Note: Sample results have not been corrected for blank values.

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EPA Method 7000B (1) = EPA 600/R-93/200 Preparation Modified. EPA 7000B Analysis Modified
EPA Method 7082 (2) = EPA 600/R-93/200 Preparation Modified. EPA 7082 Analysis Modified

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Environmental Chemistry Analysis Report

QuanTEM Set ID: 228903
Date Received: 11/07/13
Received By: Sherrie Leftwich
Date Sampled:
Time Sampled:
Analyst: CC
Date of Report: 11/8/2013

AIHA ID: 101352

Client: Marshall Environmental Management, Inc.
1601 SW 89th Street, Ste. A-100
Oklahoma City, OK 73159

Acct. No.: A331

Project: Weatherford Armory
Location: N/A
Project No.: 0298-LBP-110613

QuanTEM ID	Client ID	Matrix	Parameter	Results	Reporting Limits	Units	Date/Time Analyzed	Method
035	35	Wipe	Lead	16.9	9	ug/sq. Ft.	11/07/13 14:00	W NIOSH 9100
036	36	Wipe	Lead	36.7	9	ug/sq. Ft.	11/07/13 14:00	W NIOSH 9100
037	37	Wipe	Lead	<9.00	9	ug/sq. Ft.	11/07/13 14:00	W NIOSH 9100
038	38	Wipe	Lead	<9.00	9	ug/sq. Ft.	11/07/13 14:00	W NIOSH 9100
039	39	Wipe	Lead	<9.00	9	ug/sq. Ft.	11/07/13 14:00	W NIOSH 9100
040	40	Wipe	Lead	<9.00	9	ug/sq. Ft.	11/07/13 14:00	W NIOSH 9100
041	41	Wipe	Lead	<9.00	9	ug/sq. Ft.	11/07/13 14:00	W NIOSH 9100
042	42	Wipe	Lead	<9.00	9	ug/sq. Ft.	11/07/13 14:00	W NIOSH 9100
043	43	Wipe	Lead	18.3	9	ug/sq. Ft.	11/07/13 14:00	W NIOSH 9100
044	44	Wipe	Lead	<9.00	9	ug/sq. Ft.	11/07/13 14:00	W NIOSH 9100
045	45	Wipe	Lead	<9.00	9	ug/sq. Ft.	11/07/13 14:00	W NIOSH 9100
046	46	Wipe	Lead	<9.00	9	ug/sq. Ft.	11/07/13 14:00	W NIOSH 9100
047	47	Wipe	Lead	<9.00	9	ug/sq. Ft.	11/07/13 14:00	W NIOSH 9100
048	48	Wipe	Lead	<9.00	9	ug/sq. Ft.	11/07/13 14:00	W NIOSH 9100

Note: Sample results have not been corrected for blank values.

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EPA Method 7082 (2) = EPA 600/R-93/200 Preparation Modified. EPA 7082 Analysis Modified

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Environmental Chemistry Analysis Report

QuanTEM Set ID:	228903
Date Received:	11/07/13
Received By:	Sherrie Leftwich
Date Sampled:	
Time Sampled:	
Analyst:	CC
Date of Report:	11/8/2013

AIHA ID: 101352

Client:	Marshall Environmental Management, Inc. 1601 SW 89th Street, Ste. A-100 Oklahoma City, OK 73159
Acct. No.:	A331
Project:	Weatherford Armory
Location:	N/A
Project No.:	0298-LBP-110613

QuanTEM ID	Client ID	Matrix	Parameter	Results	Reporting Limits	Units	Date/Time Analyzed	Method

Authorized Signature: _____

Benton Miller, Analyst

Note: Sample results have not been corrected for blank values.

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EPA Method 7082 (2) = EPA 600/R-93/200 Preparation Modified. EPA 7082 Analysis Modified

Supplemental Report
QAQC Results

QA ID: 11514
Test: Lead
Date: 11/7/2013
Matrix: Wipe
Lab Number: 228903
Approved By: Jeff Mlekush
Date Approved: 11/7/2013

Notes:

Blank Data:

Type of Blank	Blank Value
FCB	0
Matrix Blank	0

Standards Data:

Standard	Low Limit	Obtained	High Limit
CCV	4.5	5.1	5.5
FCV	4.5	5.2	5.5
ICV	0.9	1.05	1.1
RLVS	0.144	0.18	0.216

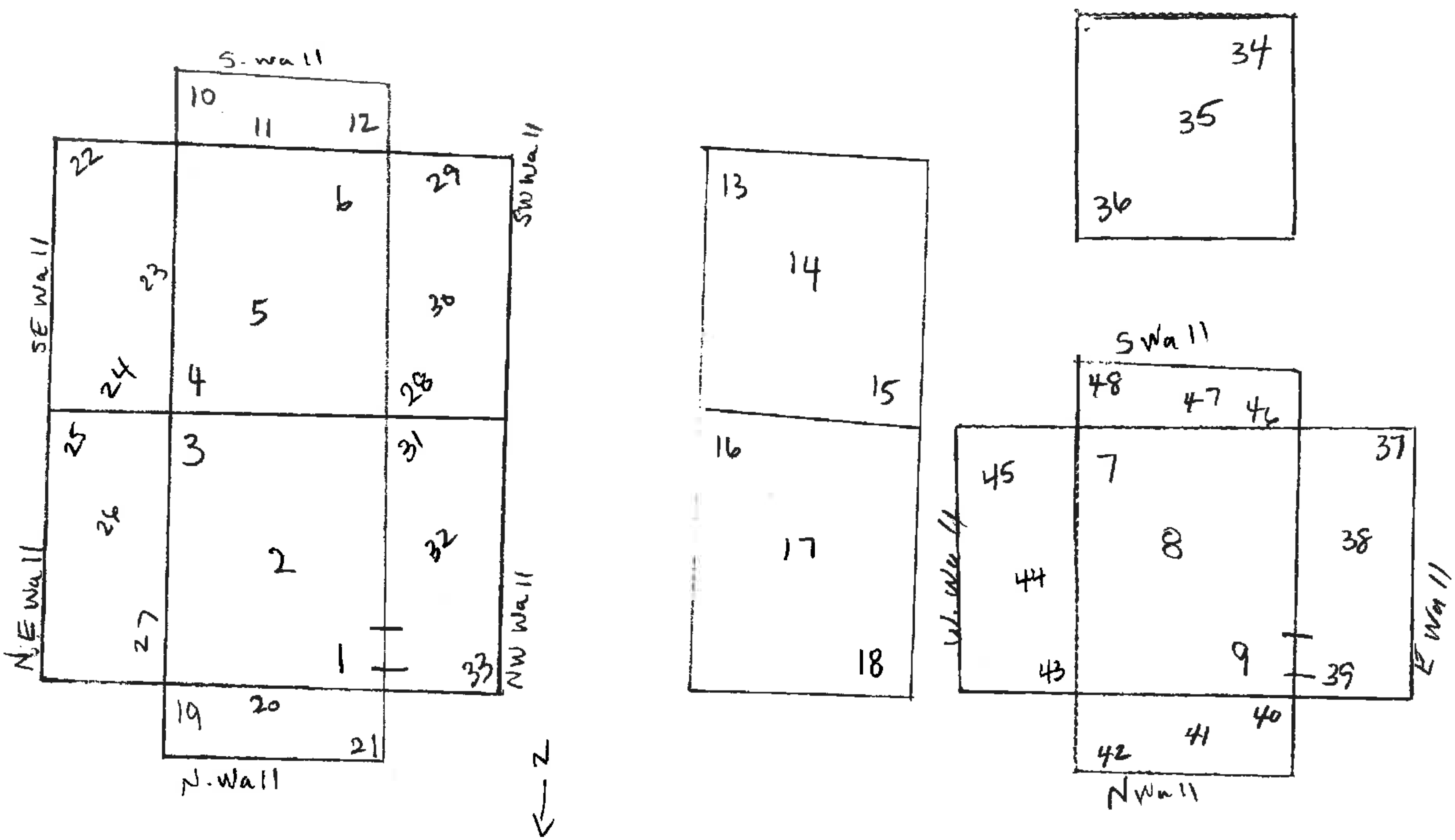
Duplicate Data:

Recovery Data:

Sample Number	Result	Spike Level	Result + Spike	% Recovery	Dup. Result + Spike	% Dup. Recovery	% Spike RPD
MS-W2	0.000	5.030	5.431	108.0	5.142	102.2	5.5

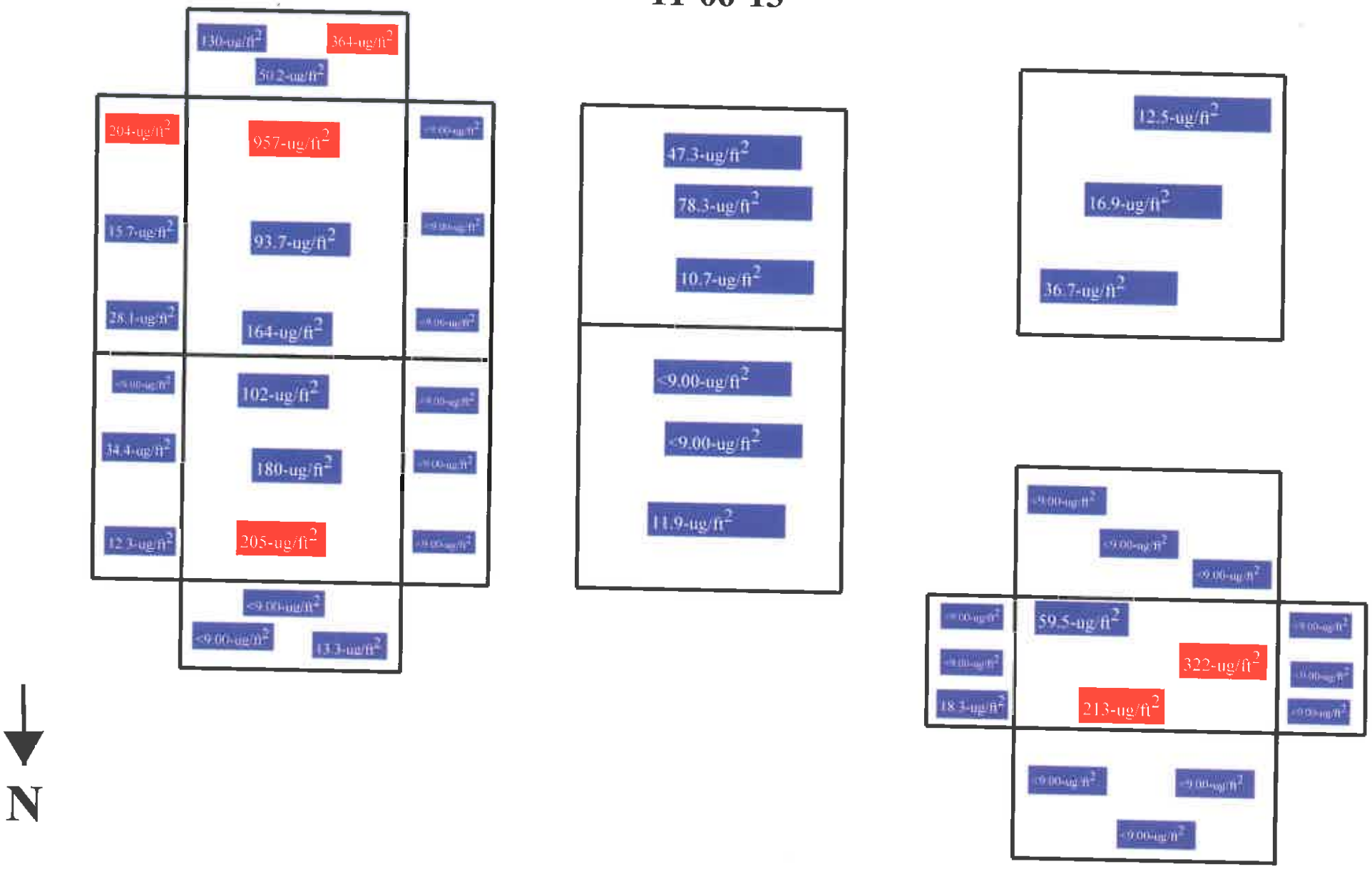
Authorized Signature: Jeff Mlekush, Laboratory Manager

Q#228103



0298-LBP-110613

Firing Range Ceiling
11-06-13



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Lab No. 232191
Accept Reject

Report Results (☑ one box)
- ☐ QuanTEM Website
- ☐ Other _____

Contact Information		Project Information	
Company: Marshall ENV	Phone:	Project Name: Wetherford Armory	
Contact:	Cell Phone:	Project Location:	
Account #:	E-mail:	Project ID:	

Sampled By: Name: Date:

RELINQUISHED BY	DATE & TIME	VIA	RECEIVED BY	DATE & TIME
	2/20/14 1800			2/20/14 18:00

REQUESTED SERVICES (Please ☑ the Appropriate Boxes)

No.	Sample ID (10 Characters Max)	Sample Description	Volume (Liters)	Volume Area (Length x Width)	Sample Matrix (see matrix code box)	Analysis: Pb	Units (☑ ONE box only): PPM	Wt %	mg / l	µg /ft²	µg / m³	mg / cm²
1	1	1FR Floor		1 Sq ft	C							
2	2	↓										
3	3	Side Room Floor										
4	4	↓										
5	5	West Drill Floor										
6	6	↓										
7	7											
8	8	East Drill Floor										
9	9	↓										
10	10	↓										
11	11	Rm 2										
12	12	↓										

Sample Matrix Codes	
A	Soil
B	Paint Chips
C	Surface / Dust Wipes
D	Bulk Miscellaneous
E	Air Cassette

TURNAROUND TIME	
☐	Same Day
☒	24 - Hour
☐	3 - Day
☐	5 - Day

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Lab No.	
Accept	Reject

Report Results (☑ one box)	
	QuanTEM Website
	Other

Contact Information		Project Information	
Company:	Phone:	Project Name:	
Contact:	Cell Phone:	Project Location:	
Account #:	E-mail:	Project ID:	

Sampled By:	Name:	Date:

RELINQUISHED BY	DATE & TIME	VIA	RECEIVED BY	DATE & TIME

REQUESTED SERVICES (Please ☑ the Appropriate Boxes)

No.	Sample ID - (10 Characters Max)	Sample Description	Volume (Liters)	Volume Area (Length x Width)	Sample Matrix (see matrix code box)	Analysis: Pb			Units (☑ ONE box only): PPM	Wt %	mg / l	µg /ft²	µg / m³	mg / cm²
1	13	Rm 2												
2	14	Rm 21												
3	15	↓												
4	16													
5	17	Rm 20												
6	18	↓												
7	19													
8	20	Rm 3												
9	21	↓												
10	22													
11	23	Rm 7												
12	24	↓												

Sample Matrix Codes	
A	Soil
B	Paint Chips
C	Surface / Dust Wipes
D	Bulk Miscellaneous
E	Air Cassette

TURNAROUND TIME	
	Same Day
	24 - Hour
	3 - Day
	5 - Day

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(800) 822-1650 • (405) 755-7272 • Fax: (405) 755-2058

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Lab No.	232191
Accept	Reject

Report Results (☑ one box)	
	QuanTEM Website
	Other _____

Contact Information		Project Information	
Company:	Phone:	Project Name:	
Contact:	Cell Phone:	Project Location:	
Account #:	E-mail:	Project ID:	

Sampled By:	Name:	Date:

RELINQUISHED BY	DATE & TIME	VIA	RECEIVED BY	DATE & TIME

REQUESTED SERVICES (Please ☑ the Appropriate Boxes)

No.	Sample ID (10 Characters Max)	Sample Description	Volume (Liters)	Volume Area (Length x Width)	Sample Matrix (see matrix code box)	Analysis: Pb	Units (☑ ONE box only): PPM	Wt %	mg / l	µg /ft²	µg / m³	mg / cm²
1	25	Rm 7										
2	26	Rm 4										
3	27	↓										
4	28	↓										
5	29	Rm 5										
6	30	↓										
7	31	↓										
8	32	Rm 6										
9	33	↓										
10	34	↓										
11	35	Rm 9										
12	36	↓										

Sample Matrix Codes	
A	Soil
B	Paint Chips
C	Surface / Dust Wipes
D	Bulk Miscellaneous
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TURNAROUND TIME	
	Same Day
	24 - Hour
	3 - Day
	5 - Day

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Lab No.	232191
Accept	Reject

Report Results (☑ one box)	
	QuanTEM Website
	Other _____

Contact Information		Project Information	
Company:	Phone:	Project Name:	
Contact:	Cell Phone:	Project Location:	
Account #:	E-mail:	Project ID:	
Sampled By:	Name:	Date:	

RELINQUISHED BY	DATE & TIME	VIA	RECEIVED BY	DATE & TIME

REQUESTED SERVICES (Please ☑ the Appropriate Boxes)

No.	Sample ID (10 Characters Max)	Sample Description	Volume (Liters)	Volume Area (Length x Width)	Sample Matrix (see matrix code box)	Analysis: Pb	Units (☑ ONE box only): PPM	Wt %	mg / l	µg /ft²	µg / m³	mg / cm²
1	37	Rm 8										
2	38	Rm 9										
3	39	↓										
4	40	↓										
5	41	Rm 10										
6	42	↓										
7	43	Rm 10A										
8	44	↓										
9	45	↓										
10	46	Rm 18										
11	47	↓										
12	48	↓										

Sample Matrix Codes	
A	Soil
B	Paint Chips
C	Surface / Dust Wipes
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TURNAROUND TIME	
	Same Day
	24 - Hour
	3 - Day
	5 - Day

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Lab No.	232191
Accept / Reject	Accept

Report Results (☑ one box)	
☐	QuanTEM Website
☐	Other _____

Contact Information		Project Information	
Company:	Phone:	Project Name:	
Contact:	Cell Phone:	Project Location:	
Account #:	E-mail:	Project ID:	

Sampled By: Name: Date:

RELINQUISHED BY	DATE & TIME	VIA	RECEIVED BY	DATE & TIME

REQUESTED SERVICES (Please ☑ the Appropriate Boxes)

No.	Sample ID (10 Characters Max)	Sample Description	Volume (Liters)	Volume Area (Length x Width)	Sample Matrix (see matrix code box)	Analysis: Pb	Units (☑ ONE box only): PPM	Wt %	mg / l	µg / ft²	µg / m³	mg / cm²
1	49	Rm 10										
2	50	↓										
3	51											
4	52	Rm 11										
5	53	↓										
6	54											
7	55	Rm 12										
8	56	↓										
9	57											
10	58	Rm ~~15~~ 13										
11	59	↓										
12	60											

Sample Matrix Codes	
A	Soil
B	Paint Chips
C	Surface / Dust Wipes
D	Bulk Miscellaneous
E	Air Cassette

TURNAROUND TIME	
☐	Same Day
☐	24 - Hour
☐	3 - Day
☐	5 - Day

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LEAD CHAIN OF CUSTODY

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LEGAL DOCUMENT - PLEASE PRINT LEGIBLY

For Lab Use Only	
Lab No.	
Accept	Reject

Report Results (☑ one box)	
	QuanTEM Website
	Other

Contact Information		Project Information	
Company:	Phone:	Project Name:	
Contact:	Cell Phone:	Project Location:	
Account #:	E-mail:	Project ID:	

Sampled By: Name: Date:

RELINQUISHED BY	DATE & TIME	VIA	RECEIVED BY	DATE & TIME

REQUESTED SERVICES (Please ☑ the Appropriate Boxes)

No.	Sample ID (10 Characters Max)	Sample Description	Volume (Liters)	Volume Area (Length x Width)	Sample Matrix (see matrix code box)	Analysis: Pb	Units (☑ ONE box only): PPM	Wt %	mg / l	µg /ft²	µg / m³	mg / cm²
1	61	Rm 14										
2	62	↓										
3	63											
4	64	Rm 15										
5	65	↓										
6	66											
7												
8												
9												
10												
11												
12												

Sample Matrix Codes	
A	Soil
B	Paint Chips
C	Surface / Dust Wipes
D	Bulk Miscellaneous
E	Air Cassette

TURNAROUND TIME	
	Same Day
	24 - Hour
	3 - Day
	5 - Day

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2033 Heritage Park Drive / Oklahoma City, OK 73120 / (405) 755-7272 / Fax (405) 755-2058

Environmental Chemistry Analysis Report

QuanTEM Set ID: 232191
Date Received: 02/21/14
Received By: Sherrie Leftwich
Date Sampled:
Time Sampled:
Analyst: CC
Date of Report: 2/21/2014

AIHA ID: 101352

Client: Marshall Environmental Management, Inc.
1601 SW 89th Street, Ste. A-100
Oklahoma City, OK 73159

Acct. No.: A331

Project: Weatherford Armory
Location: N/A
Project No.: N/A

QuanTEM ID	Client ID	Matrix	Parameter	Results	Reporting Limits	Units	Date/Time Analyzed	Method
001	1	Wipe	Lead	61.6	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
002	2	Wipe	Lead	51.2	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
003	3	Wipe	Lead	62.6	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
004	4	Wipe	Lead	35.3	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
005	5	Wipe	Lead	216	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
006	6	Wipe	Lead	82.9	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
007	7	Wipe	Lead	80.2	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
008	8	Wipe	Lead	97.5	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
009	9	Wipe	Lead	159	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
010	10	Wipe	Lead	69.2	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
011	11	Wipe	Lead	111	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
012	12	Wipe	Lead	78.7	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
013	13	Wipe	Lead	131	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
014	14	Wipe	Lead	44.5	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
015	15	Wipe	Lead	106	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
016	16	Wipe	Lead	80.4	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
017	17	Wipe	Lead	107	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100

Note: Sample results have not been corrected for blank values.

Unless otherwise noted, upon receipt the condition of the sample was acceptable for analysis.

Wipe materials must meet ASTM E1792 criteria. Method detection limits and resultant reporting limits may not be valid for non-ASTM E1792 wipe material.

EPA Method 7000B (1) = EPA 600/R-93/200 Preparation Modified, EPA 7000B Analysis Modified
EPA Method 7082 (2) = EPA 600/R-93/200 Preparation Modified, EPA 7082 Analysis Modified

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Environmental Chemistry Analysis Report

QuanTEM Set ID: 232191
Date Received: 02/21/14
Received By: Sherrie Leftwich
Date Sampled:
Time Sampled:
Analyst: CC
Date of Report: 2/21/2014

AIHA ID: 101352

Client: Marshall Environmental Management, Inc.
1601 SW 89th Street, Ste. A-100
Oklahoma City, OK 73159

Acct. No.: A331

Project: Weatherford Armory
Location: N/A
Project No.: N/A

QuanTEM ID	Client ID	Matrix	Parameter	Results	Reporting Limits	Units	Date/Time Analyzed	Method
018	18	Wipe	Lead	171	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
019	19	Wipe	Lead	74.8	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
020	20	Wipe	Lead	40.9	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
021	21	Wipe	Lead	154	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
022	22	Wipe	Lead	51.7	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
023	23	Wipe	Lead	59.5	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
024	24	Wipe	Lead	72.5	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
025	25	Wipe	Lead	70.6	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
026	26	Wipe	Lead	39.0	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
027	27	Wipe	Lead	107	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
028	28	Wipe	Lead	145	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
029	29	Wipe	Lead	66.5	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
030	30	Wipe	Lead	62.4	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
031	31	Wipe	Lead	62.1	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
032	32	Wipe	Lead	53.1	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
033	33	Wipe	Lead	27.2	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
034	34	Wipe	Lead	22.8	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100

Note: Sample results have not been corrected for blank values.

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Wipe materials must meet ASTM E1792 criteria. Method detection limits and resultant reporting limits may not be valid for non-ASTM E1792 wipe material.

EPA Method 7000B (1) = EPA 600/R-93/200 Preparation Modified. EPA 7000B Analysis Modified
EPA Method 7082 (2) = EPA 600/R-93/200 Preparation Modified. EPA 7082 Analysis Modified

QUANTEM® LABORATORIES

2033 Heritage Park Drive / Oklahoma City, OK 73120 / (405) 755-7272 / Fax (405) 755-2058

Environmental Chemistry Analysis Report

QuanTEM Set ID: 232191
Date Received: 02/21/14
Received By: Sherrie Leftwich
Date Sampled:
Time Sampled:
Analyst: CC
Date of Report: 2/21/2014

AIHA ID: 101352

Client: Marshall Environmental Management, Inc.
1601 SW 89th Street, Ste. A-100
Oklahoma City, OK 73159

Acct. No.: A331

Project: Weatherford Armory
Location: N/A
Project No.: N/A

QuanTEM ID	Client ID	Matrix	Parameter	Results	Reporting Limits	Units	Date/Time Analyzed	Method
035	35	Wipe	Lead	93.5	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
036	36	Wipe	Lead	105	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
037	37	Wipe	Lead	20.2	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
038	38	Wipe	Lead	32.1	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
039	39	Wipe	Lead	37.9	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
040	40	Wipe	Lead	28.4	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
041	41	Wipe	Lead	36.6	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
042	42	Wipe	Lead	42.7	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
043	43	Wipe	Lead	38.0	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
044	44	Wipe	Lead	21.5	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
045	45	Wipe	Lead	37.7	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
046	46	Wipe	Lead	50.9	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
047	47	Wipe	Lead	44.1	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
048	48	Wipe	Lead	102	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
049	49	Wipe	Lead	51.3	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
050	50	Wipe	Lead	44.4	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
051	51	Wipe	Lead	40.9	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100

Note: Sample results have not been corrected for blank values.

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Wipe materials must meet ASTM E1792 criteria. Method detection limits and resultant reporting limits may not be valid for non-ASTM E1792 wipe material.

EPA Method 7000B (1) = EPA 600/R-93/200 Preparation Modified. EPA 7000B Analysis Modified

EPA Method 7082 (2) = EPA 600/R-93/200 Preparation Modified. EPA 7082 Analysis Modified

2033 Heritage Park Drive / Oklahoma City, OK 73120 / (405) 755-7272 / Fax (405) 755-2058

Environmental Chemistry Analysis Report

QuanTEM Set ID: 232191
Date Received: 02/21/14
Received By: Sherrie Leftwich
Date Sampled:
Time Sampled:
Analyst: CC
Date of Report: 2/21/2014

AIHA ID: 101352

Client: Marshall Environmental Management, Inc.
1601 SW 89th Street, Ste. A-100
Oklahoma City, OK 73159

Acct. No.: A331

Project: Weatherford Armory
Location: N/A
Project No.: N/A

QuanTEM ID	Client ID	Matrix	Parameter	Results	Reporting Limits	Units	Date/Time Analyzed	Method
052	52	Wipe	Lead	49.6	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
053	53	Wipe	Lead	43.8	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
054	54	Wipe	Lead	51.3	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
055	55	Wipe	Lead	94.9	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
056	56	Wipe	Lead	208	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
057	57	Wipe	Lead	394	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
058	58	Wipe	Lead	58.2	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
059	59	Wipe	Lead	74.9	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
060	60	Wipe	Lead	24.0	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
061	61	Wipe	Lead	13.8	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
062	62	Wipe	Lead	14.6	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
063	63	Wipe	Lead	11.4	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
064	64	Wipe	Lead	175	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
065	65	Wipe	Lead	48.5	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100
066	66	Wipe	Lead	154	9	ug/sq. Ft.	02/21/14 14:45	W NIOSH 9100

Note: Sample results have not been corrected for blank values.

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EPA Method 7000B (1) = EPA 600/R-93/200 Preparation Modified. EPA 7000B Analysis Modified

EPA Method 7082 (2) = EPA 600/R-93/200 Preparation Modified. EPA 7082 Analysis Modified

2033 Heritage Park Drive / Oklahoma City, OK 73120 / (405) 755-7272 / Fax (405) 755-2058

Environmental Chemistry Analysis Report

QuanTEM Set ID: 232191
Date Received: 02/21/14
Received By: Sherrie Leftwich
Date Sampled:
Time Sampled:
Analyst: CC
Date of Report: 2/21/2014

AIHA ID: 101352

Client: Marshall Environmental Management, Inc.
1601 SW 89th Street, Ste. A-100
Oklahoma City, OK 73159

Acct. No.: A331

Project: Weatherford Armory
Location: N/A
Project No.: N/A

QuanTEM ID	Client ID	Matrix	Parameter	Results	Reporting Limits	Units	Date/Time Analyzed	Method

Authorized Signature: _____
Benton Miller, Analyst

Note: Sample results have not been corrected for blank values.

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EPA Method 7000B (1) = EPA 600/R-93/200 Preparation Modified. EPA 7000B Analysis Modified
EPA Method 7082 (2) = EPA 600/R-93/200 Preparation Modified. EPA 7082 Analysis Modified

Supplemental Report
QAQC Results

QA ID: 11812
Test: Lead

Date: 2/21/2014
Matrix: Wipe

Lab Number: 232191
Approved By: Benton Miller
Date Approved: 2/21/2014

Notes:

Blank Data:

Type of Blank	Blank Value
FCB	0
Matrix Blank	0

Standards Data:

Standard	Low Limit	Obtained	High Limit
CCV	4.5	4.9	5.5
CCV	4.5	5.1	5.5
ICV	0.9	1.07	1.1
RLVS	0.144	0.171	0.216

Duplicate Data:

Recovery Data:

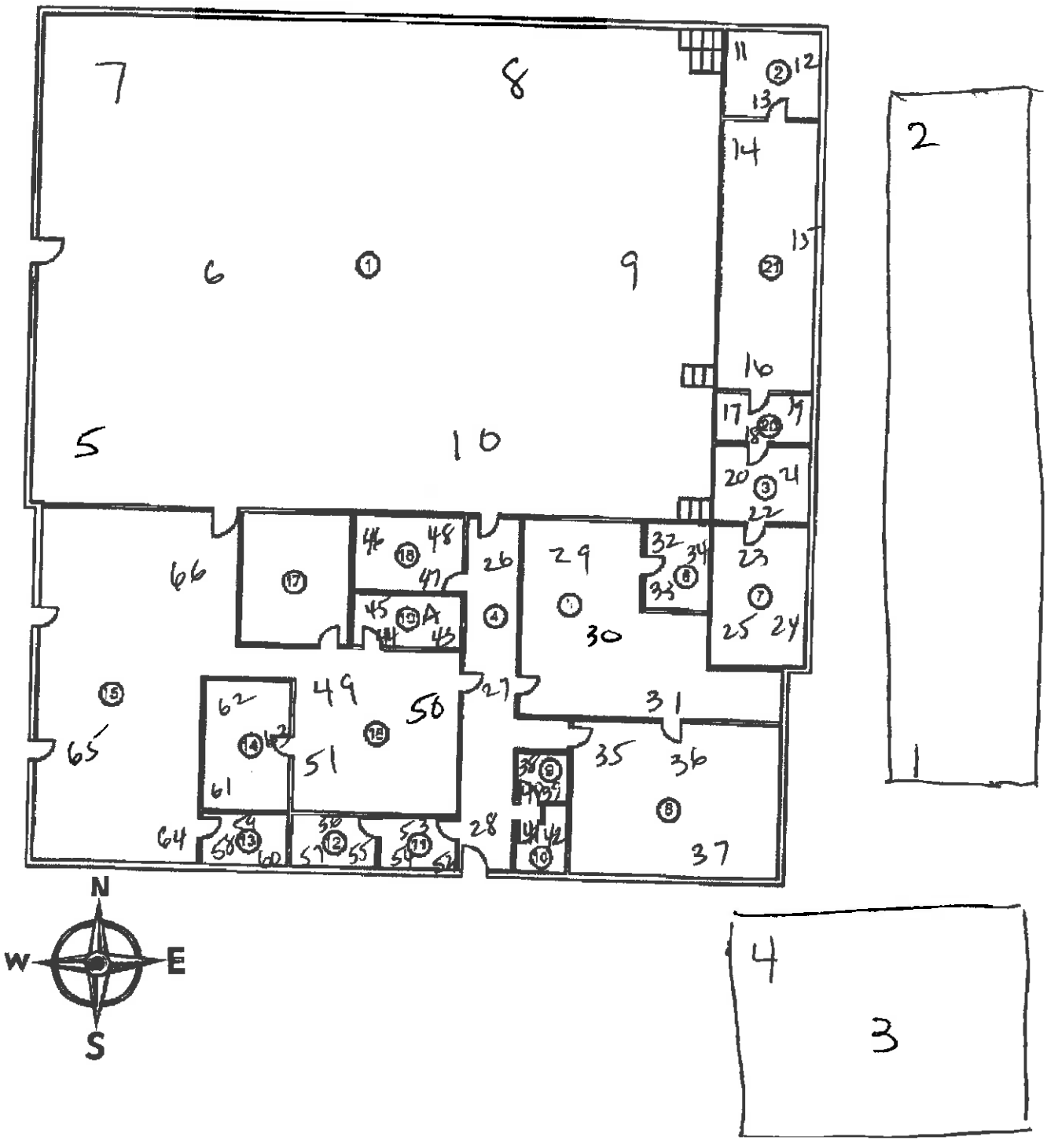
Sample Number	Result	Spike Level	Result + Spike	% Recovery	Dup. Result + Spike	% Dup. Recovery	% Spike RPD
MS-W2	0.000	5.010	5.144	102.7	5.177	103.3	0.6

Authorized Signature: _____

Benton Miller, Analyst

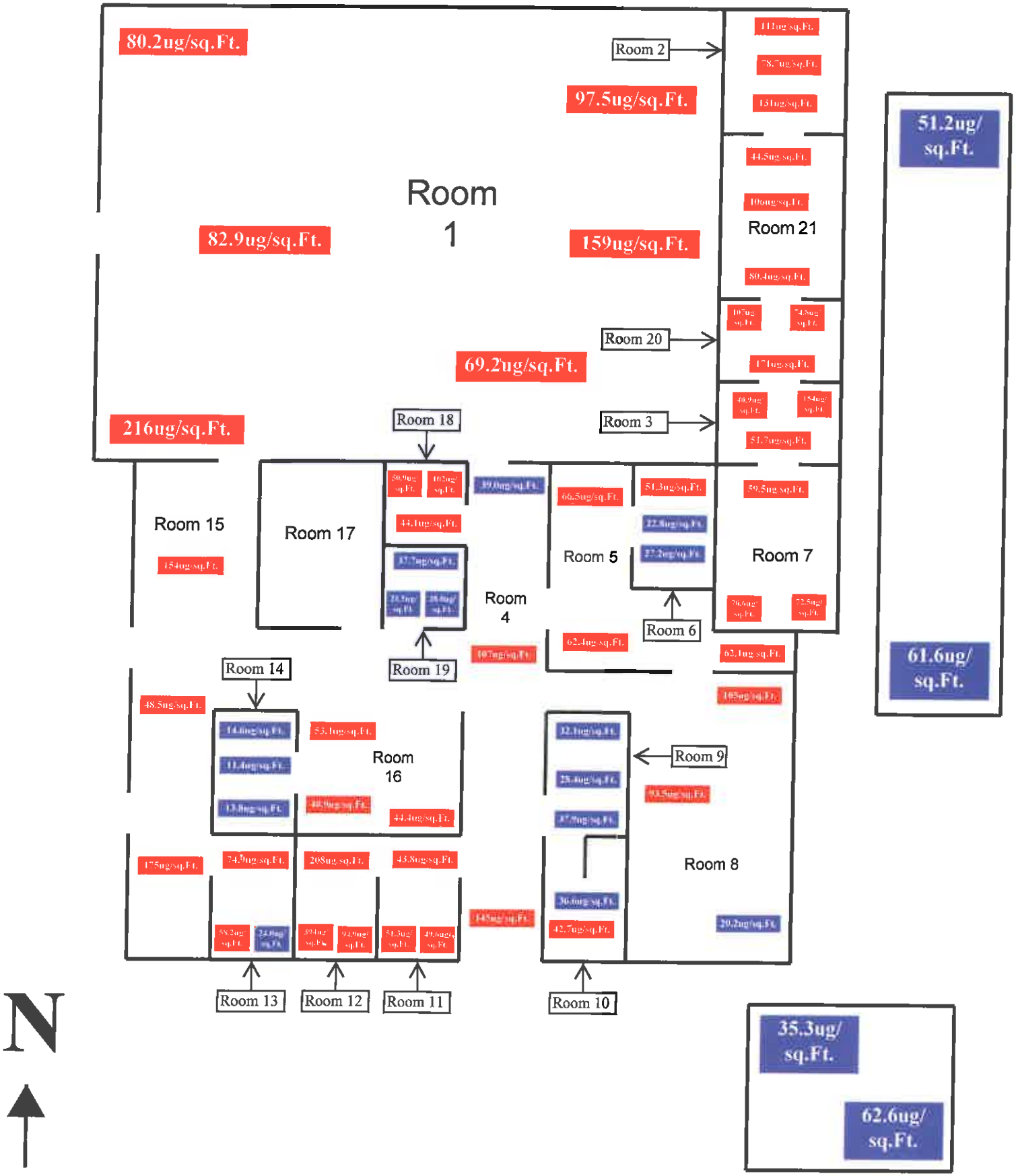
Q#232191

Weatherford Armory



Weatherford Armory

02-20-14



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LEAD CHAIN OF CUSTODY

2033 Heritage Park Drive, Oklahoma City, OK 73120-7502
(800) 822-1650 • (405) 755-7272 • Fax: (405) 755-2058

LEGAL DOCUMENT - PLEASE PRINT LEGIBLY

For Lab Use Only
Lab No. 232394
(Accept) Reject

Contact Information		Project Information	
Company: Marshall Environmental	Phone: 616-0401	Project Name:	Weatherford Armory (03-12-14)
Contact: Rachel Woods	Cell Phone: N/A	Project Location:	Weatherford, OK
Account #:	E-mail: marshenv@suddenlink.net	Project ID:	0298-LBP-110613

Report Results (☑ one box)
X QuanTEM Website
X Other email
dustin.davidson@deq.ok.gov

Sampled By: Name: Rachel Woods Date: 3/12/14

RELINQUISHED BY	DATE & TIME	VIA	RECEIVED BY	DATE & TIME
[signature]	3/12/14		[signature]	3/12/14 [illegible]

REQUESTED SERVICES (Please ☑ the Appropriate Boxes)

No.	Sample ID (10 Characters Max)	Sample Description	Volume (Liters)	Volume Area (Length x Width)	Sample Matrix (see matrix code box)	Analysis: Pb			Units: PPM	Wt %	mg / l	µg / ft²	µg / m³	mg / cm²
1	1	Room 1		1ft2	C	X						X		
2	2	↓		↓	↓	↓						↓		
3	3													
4	4													
5	5													
6	6	↓												
7	7	Room 2												
8	8													
9	9	↓												
10	10	Room 21												
11	11													
12	12	↓		↓	↓	↓						↓		

Sample Matrix Codes	
A	Soil
B	Paint Chips
C	Surface / Dust Wipes
D	Bulk Miscellaneous
E	Air Cassette

TURNAROUND TIME	
	Same Day
X	24 - Hour
	3 - Day
	5 - Day

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LEGAL DOCUMENT - PLEASE PRINT LEGIBLY

For Lab Use Only
Lab No. 232894
Accept Reject

Project Information

Company: Marshall Environmental | Project Name: Weatherford Armory (03-12-14) | Project Location: Weatherford, OK

REQUESTED SERVICES (Please ☑ the Appropriate Boxes)

No.	Sample ID (10 Characters Max)	Sample Description	Volume (Liters)	Volume Area (Length x Width)	Sample Matrix (see matrix code box)	Analysis: Pb	Units (☑ ONE box only): PPM	Wt %	mg / l	µg /ft²	µg / m³	mg / cm²
13	13	Room 20		1ft2	C	X				X		
14	14	↓		↓	↓	↓				↓		
15	15	↓										
16	16	Room 3										
17	17	↓										
18	18	Room 7										
19	19	↓										
20	20	↓										
21	21	Room 6										
22	22	Room 5										
23	23	↓										
24	24	↓										
25	25	Room 8										
26	26	↓										
27	27	Room 10										
28	28	Room 4										
29	29	↓										
30	30	Room 18				↓				↓		

Sample Matrix Codes

A	Soil
B	Paint Chips
C	Surface / Dust Wipes
D	Bulk Miscellaneous
E	Air Cassette

SATURDAY SAMPLE DELIVERY - CALL TO SCHEDULE • Use this address for Saturday Delivery only: 4220 N. Santa Fe Ave., Oklahoma City, OK 73105-8517 • Mark Package "Hold for Saturday Pickup"

QUANTEM LABORATORIES
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LEAD CHAIN OF CUSTODY

2033 Heritage Park Drive, Oklahoma City, OK 73120-7502
(800) 822-1650 • (405) 755-7272 • Fax: (405) 755-2058

LEGAL DOCUMENT - PLEASE PRINT LEGIBLY

For Lab Use Only
Lab No. 232894
Accept Reject

Project Information

Company: Marshall Environmental Project Name: Weatherford Armory (03-12-14) Project Location: Weatherford, OK

REQUESTED SERVICES (Please ☑ the Appropriate Boxes)

No.	Sample ID (10 Characters Max)	Sample Description	Volume (Liters)	Volume Area (Length x Width)	Sample Matrix (see matrix code box)	Analysis: Pb	Units (☑ ONE box only): PPM	Wt %	mg / l	µg / ft²	µg / m³	mg / cm²
13	31	Room 10		1 ft²	C	X				X		
14	32	↓		↓	↓	↓				↓		
15	33	Room 14		↓	↓	↓				↓		
16	34	↓		↓	↓	↓				↓		
17	35	↓		↓	↓	↓				↓		
18	36	Room 11		↓	↓	↓				↓		
19	37	↓		↓	↓	↓				↓		
20	38	↓		↓	↓	↓				↓		
21	39	Room 12		↓	↓	↓				↓		
22	40	↓		↓	↓	↓				↓		
23	41	↓		↓	↓	↓				↓		
24	42	Room 13		↓	↓	↓				↓		
25	43	↓		↓	↓	↓				↓		
26	44	↓		↓	↓	↓				↓		
27	45	Room 15		↓	↓	↓				↓		
28	46	↓		↓	↓	↓				↓		
29												
30												

Sample Matrix Codes

A	Soil
B	Paint Chips
C	Surface / Dust Wipes
D	Bulk Miscellaneous
E	Air Cassette

SATURDAY SAMPLE DELIVERY - CALL TO SCHEDULE • Use this address for Saturday Delivery only: 4220 N. Santa Fe Ave., Oklahoma City, OK 73105-8517 • Mark Package "Hold for Saturday Pickup"

2033 Heritage Park Drive / Oklahoma City, OK 73120 / (405) 755-7272 / Fax (405) 755-2058

Environmental Chemistry Analysis Report

QuanTEM Set ID: 232894
Date Received: 03/12/14
Received By: Sherrie Leftwich
Date Sampled:
Time Sampled:
Analyst: CC
Date of Report: 3/13/2014

AIHA ID: 101352

Client: Marshall Environmental Management, Inc.
1601 SW 89th Street, Ste. A-100
Oklahoma City, OK 73159

Acct. No.: A331

Project: Weatherford Armory (03-12-14)
Location: Weatherford, OK
Project No.: 0298-LBP-110613

QuanTEM ID	Client ID	Matrix	Parameter	Results	Reporting Limits	Units	Date/Time Analyzed	Method
001	1	Wipe	Lead	<9.00	9	ug/sq. Ft.	03/13/14 10:20	W NIOSH 9100
002	2	Wipe	Lead	17.0	9	ug/sq. Ft.	03/13/14 10:20	W NIOSH 9100
003	3	Wipe	Lead	<9.00	9	ug/sq. Ft.	03/13/14 10:20	W NIOSH 9100
004	4	Wipe	Lead	<9.00	9	ug/sq. Ft.	03/13/14 10:20	W NIOSH 9100
005	5	Wipe	Lead	15.5	9	ug/sq. Ft.	03/13/14 10:20	W NIOSH 9100
006	6	Wipe	Lead	<9.00	9	ug/sq. Ft.	03/13/14 10:20	W NIOSH 9100
007	7	Wipe	Lead	19.0	9	ug/sq. Ft.	03/13/14 10:20	W NIOSH 9100
008	8	Wipe	Lead	<9.00	9	ug/sq. Ft.	03/13/14 10:20	W NIOSH 9100
009	9	Wipe	Lead	<9.00	9	ug/sq. Ft.	03/13/14 10:20	W NIOSH 9100
010	10	Wipe	Lead	<9.00	9	ug/sq. Ft.	03/13/14 10:20	W NIOSH 9100
011	11	Wipe	Lead	9.92	9	ug/sq. Ft.	03/13/14 10:20	W NIOSH 9100
012	12	Wipe	Lead	<9.00	9	ug/sq. Ft.	03/13/14 10:20	W NIOSH 9100
013	13	Wipe	Lead	55.7	9	ug/sq. Ft.	03/13/14 10:20	W NIOSH 9100
014	14	Wipe	Lead	13.6	9	ug/sq. Ft.	03/13/14 10:20	W NIOSH 9100
015	15	Wipe	Lead	<9.00	9	ug/sq. Ft.	03/13/14 10:20	W NIOSH 9100
016	16	Wipe	Lead	56.6	9	ug/sq. Ft.	03/13/14 10:20	W NIOSH 9100
017	17	Wipe	Lead	16.5	9	ug/sq. Ft.	03/13/14 10:20	W NIOSH 9100

Note: Sample results have not been corrected for blank values.

Unless otherwise noted, upon receipt the condition of the sample was acceptable for analysis.

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EPA Method 7082 (2) = EPA 600/R-93/200 Preparation Modified. EPA 7082 Analysis Modified

2033 Heritage Park Drive / Oklahoma City, OK 73120 / (405) 755-7272 / Fax (405) 755-2058

Environmental Chemistry Analysis Report

QuanTEM Set ID: 232894
Date Received: 03/12/14
Received By: Sherrie Leftwich
Date Sampled:
Time Sampled:
Analyst: CC
Date of Report: 3/13/2014

AIHA ID: 101352

Client: Marshall Environmental Management, Inc.
1601 SW 89th Street, Ste. A-100
Oklahoma City, OK 73159

Acct. No.: A331

Project: Weatherford Armory (03-12-14)
Location: Weatherford, OK
Project No.: 0298-LBP-110613

QuanTEM ID	Client ID	Matrix	Parameter	Results	Reporting Limits	Units	Date/Time Analyzed	Method
018	18	Wipe	Lead	20.1	9	ug/sq. Ft.	03/13/14 10:20	W NIOSH 9100
019	19	Wipe	Lead	<9.00	9	ug/sq. Ft.	03/13/14 10:20	W NIOSH 9100
020	20	Wipe	Lead	<9.00	9	ug/sq. Ft.	03/13/14 10:20	W NIOSH 9100
021	21	Wipe	Lead	10.6	9	ug/sq. Ft.	03/13/14 10:20	W NIOSH 9100
022	22	Wipe	Lead	<9.00	9	ug/sq. Ft.	03/13/14 10:20	W NIOSH 9100
023	23	Wipe	Lead	<9.00	9	ug/sq. Ft.	03/13/14 10:20	W NIOSH 9100
024	24	Wipe	Lead	<9.00	9	ug/sq. Ft.	03/13/14 10:20	W NIOSH 9100
025	25	Wipe	Lead	10.4	9	ug/sq. Ft.	03/13/14 10:20	W NIOSH 9100
026	26	Wipe	Lead	<9.00	9	ug/sq. Ft.	03/13/14 10:20	W NIOSH 9100
027	27	Wipe	Lead	<9.00	9	ug/sq. Ft.	03/13/14 10:20	W NIOSH 9100
028	28	Wipe	Lead	12.5	9	ug/sq. Ft.	03/13/14 10:20	W NIOSH 9100
029	29	Wipe	Lead	<9.00	9	ug/sq. Ft.	03/13/14 10:20	W NIOSH 9100
030	30	Wipe	Lead	<9.00	9	ug/sq. Ft.	03/13/14 10:20	W NIOSH 9100
031	31	Wipe	Lead	<9.00	9	ug/sq. Ft.	03/13/14 10:20	W NIOSH 9100
032	32	Wipe	Lead	<9.00	9	ug/sq. Ft.	03/13/14 10:20	W NIOSH 9100
033	33	Wipe	Lead	<9.00	9	ug/sq. Ft.	03/13/14 10:20	W NIOSH 9100
034	34	Wipe	Lead	<9.00	9	ug/sq. Ft.	03/13/14 10:20	W NIOSH 9100

Note: Sample results have not been corrected for blank values.

Unless otherwise noted, upon receipt the condition of the sample was acceptable for analysis.

Wipe materials must meet ASTM E1792 criteria. Method detection limits and resultant reporting limits may not be valid for non-ASTM E1792 wipe material.

EPA Method 7000B (1) = EPA 600/R-93/200 Preparation Modified. EPA 7000B Analysis Modified
EPA Method 7082 (2) = EPA 600/R-93/200 Preparation Modified. EPA 7082 Analysis Modified

2033 Heritage Park Drive / Oklahoma City, OK 73120 / (405) 755-7272 / Fax (405) 755-2058

Environmental Chemistry Analysis Report

QuanTEM Set ID: 232894
Date Received: 03/12/14
Received By: Sherrie Leftwich
Date Sampled:
Time Sampled:
Analyst: CC
Date of Report: 3/13/2014

AIHA ID: 101352

Client: Marshall Environmental Management, Inc.
1601 SW 89th Street, Ste. A-100
Oklahoma City, OK 73159

Acct. No.: A331

Project: Weatherford Armory (03-12-14)
Location: Weatherford, OK
Project No.: 0298-LBP-110613

QuanTEM ID	Client ID	Matrix	Parameter	Results	Reporting Limits	Units	Date/Time Analyzed	Method
035	35	Wipe	Lead	15.4	9	ug/sq. Ft.	03/13/14 10:20	W NIOSH 9100
036	36	Wipe	Lead	<9.00	9	ug/sq. Ft.	03/13/14 10:20	W NIOSH 9100
037	37	Wipe	Lead	<9.00	9	ug/sq. Ft.	03/13/14 10:20	W NIOSH 9100
038	38	Wipe	Lead	<9.00	9	ug/sq. Ft.	03/13/14 10:20	W NIOSH 9100
039	39	Wipe	Lead	<9.00	9	ug/sq. Ft.	03/13/14 10:20	W NIOSH 9100
040	40	Wipe	Lead	16.3	9	ug/sq. Ft.	03/13/14 10:20	W NIOSH 9100
041	41	Wipe	Lead	19.0	9	ug/sq. Ft.	03/13/14 10:20	W NIOSH 9100
042	42	Wipe	Lead	<9.00	9	ug/sq. Ft.	03/13/14 10:20	W NIOSH 9100
043	43	Wipe	Lead	<9.00	9	ug/sq. Ft.	03/13/14 10:20	W NIOSH 9100
044	44	Wipe	Lead	<9.00	9	ug/sq. Ft.	03/13/14 10:20	W NIOSH 9100
045	45	Wipe	Lead	<9.00	9	ug/sq. Ft.	03/13/14 10:20	W NIOSH 9100
046	46	Wipe	Lead	18.2	9	ug/sq. Ft.	03/13/14 10:20	W NIOSH 9100

Authorized Signature: _____
Benton Miller, Analyst

Note: Sample results have not been corrected for blank values.

This report applies only to the standards or procedures indicated and to the specific samples tested. It is not indicative of the qualities of apparently identical or similar products or procedures, nor does it represent an ongoing assurance program unless so noted. These reports are for the exclusive use of the client and are not to be reproduced without specific written permission. QuanTEM is not responsible for user-supplied data used in calculations.

Unless otherwise noted, upon receipt the condition of the sample was acceptable for analysis.

Wipe materials must meet ASTM E1792 criteria. Method detection limits and resultant reporting limits may not be valid for non-ASTM E1792 wipe material.

EPA Method 7000B (1) = EPA 600/R-93/200 Preparation Modified. EPA 7000B Analysis Modified
EPA Method 7082 (2) = EPA 600/R-93/200 Preparation Modified. EPA 7082 Analysis Modified

Supplemental Report
QAQC Results

QA ID: 11855
Test: Lead

Date: 3/13/2014
Matrix: Wipe

Lab Number: 232894
Approved By: Benton Miller
Date Approved: 3/13/2014

Notes:

Blank Data:

Type of Blank	Blank Value
FCB	0
Matrix Blank	0

Standards Data:

Standard	Low Limit	Obtained	High Limit
CCV	4.5	5.3	5.5
FCV	4.5	5.3	5.5
ICV	0.9	1	1.1
RLVS	0.144	0.154	0.216

Duplicate Data:

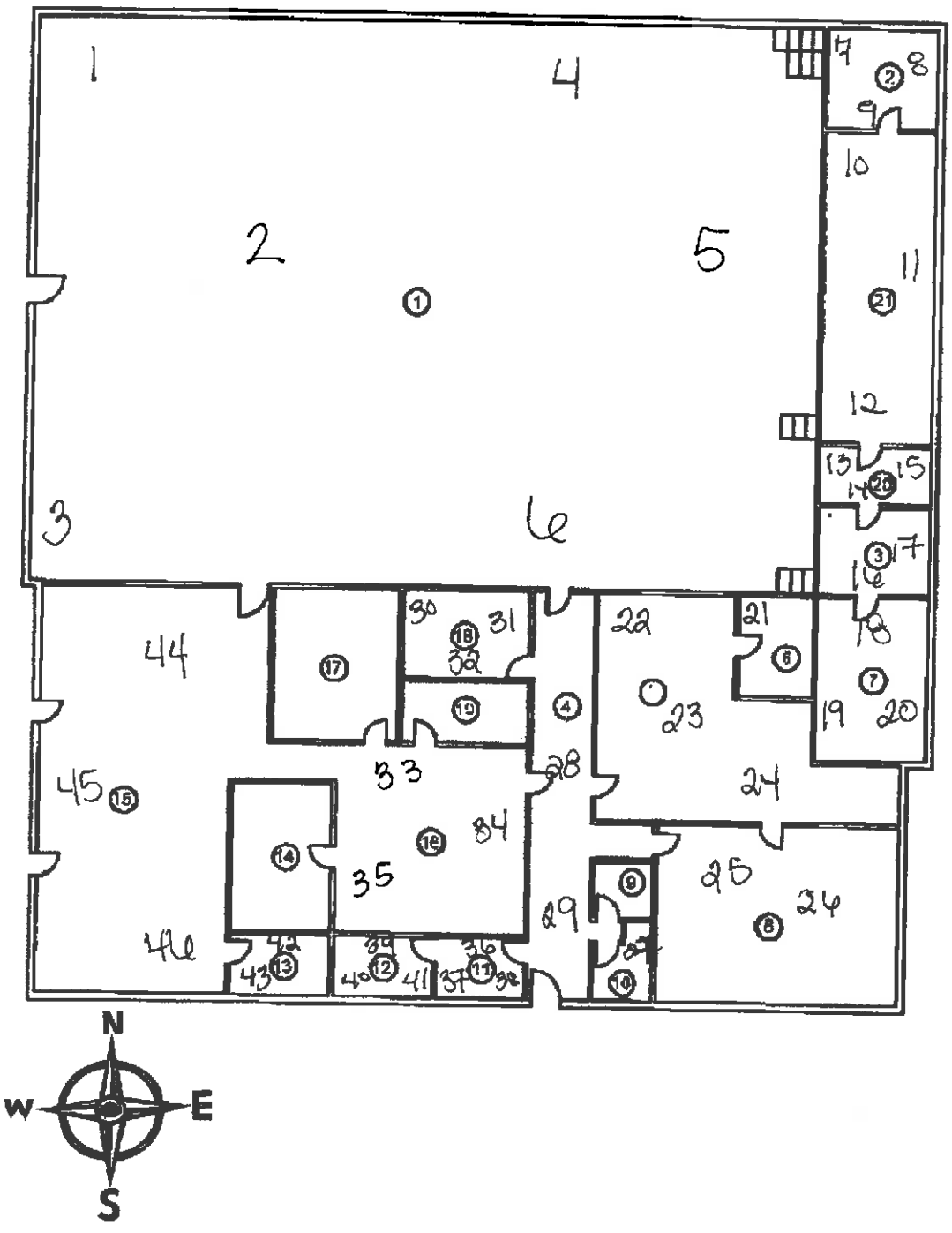
Recovery Data:

Sample Number	Result	Spike Level	Result + Spike	% Recovery	Dup. Result + Spike	% Dup. Recovery	% Spike RPD
MS-W3	0.000	5.010	5.499	109.8	5.700	113.8	3.6

Authorized Signature: _____

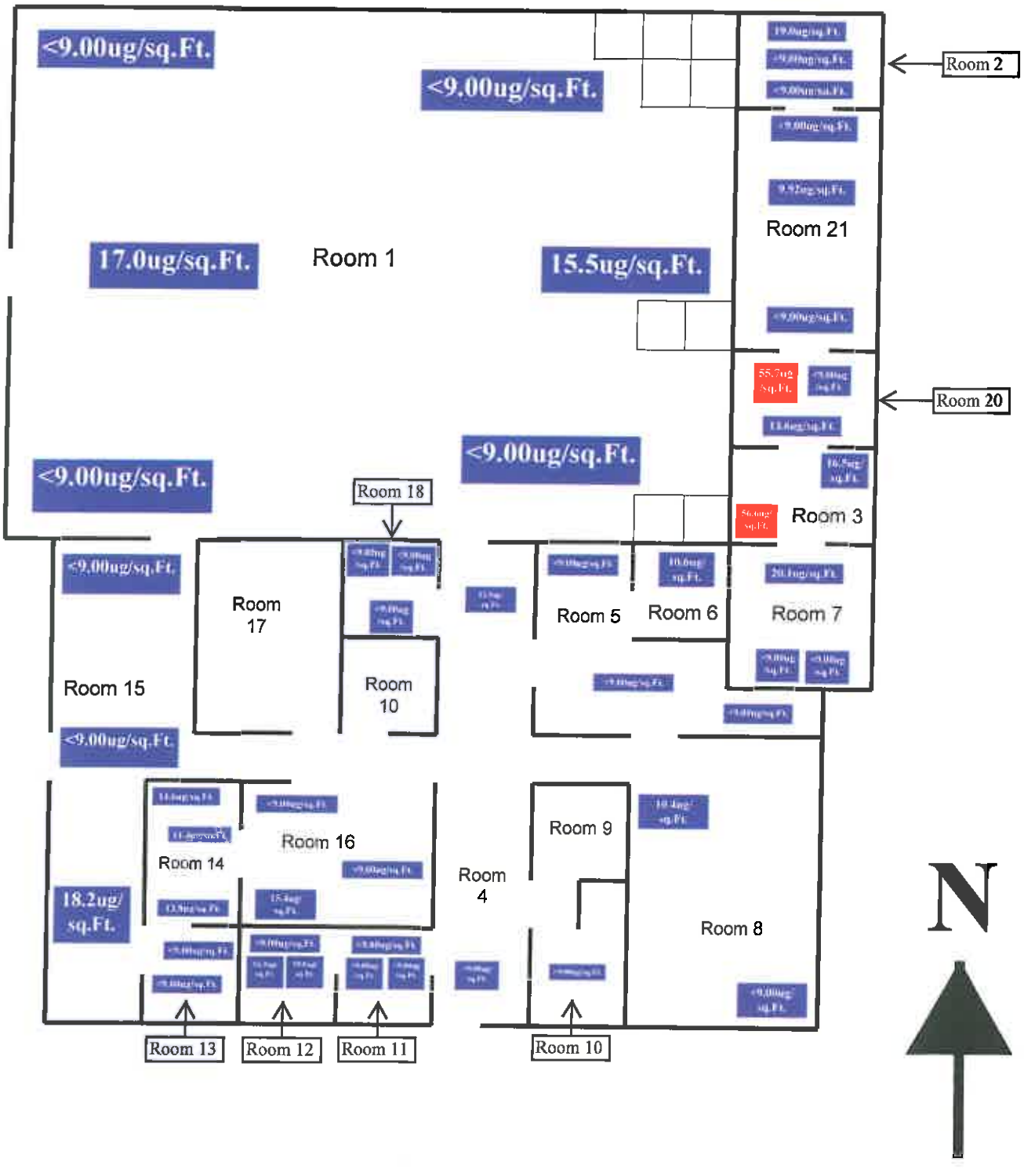
Benton Miller, Analyst

Weatherford Armory Q# 232894



Weatherford Armory

03-12-14



QUANTEM LABORATORIES

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LEAD CHAIN OF CUSTODY

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LEGAL DOCUMENT - PLEASE PRINT LEGIBLY

For Lab Use Only	
Lab No.	233196
	Accept / Reject

Contact Information		Project Information	
Company: Marshall Environmental	Phone: 616-0401	Project Name: Weatherford Primary (03-20-14)	
Contact: Rachel Woods	Cell Phone: 315-4305	Project Location: Weatherford, OK	
Account #:	E-mail: marshenv@sbcglobal.net	Project ID: 0298-LBP-110e13	

Report Results (☑ one box)
- ☐ QuanTEM Website
- ☒ Other austin.davidson@deq.ok.gov

Sampled By: Name: Rachel Woods Date: 3/20/14

RELINQUISHED BY	DATE & TIME	VIA	RECEIVED BY	DATE & TIME
[signature]	3/20/14		[signature]	3/20/14 3:00

REQUESTED SERVICES (Please ☑ the Appropriate Boxes)

No.	Sample ID (10 Characters Max)	Sample Description	Volume (Liters)	Volume Area (Length x Width)	Sample Matrix (see matrix code box)	Analysis: Pb	Units (☑ ONE box only): PPM	Wt %	mg / l	µg / ft²	µg / m³	mg / cm²
1	1	Room 20 - NW Floor		1ft²	C	X				X		
2	2	Room 5 - South Floor		1ft²	C	X				X		
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												

Sample Matrix Codes	
A	Soil
B	Paint Chips
C	Surface / Dust Wipes
D	Bulk Miscellaneous
E	Air Cassette

TURNAROUND TIME	
☐	Same Day
☒	24 - Hour
☐	3 - Day
☐	5 - Day

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Environmental Chemistry Analysis Report

QuanTEM Set ID: 233196
Date Received: 03/20/14
Received By: Sherrie Leftwich
Date Sampled:
Time Sampled:
Analyst: CC
Date of Report: 3/21/2014

AIHA ID: 101352

Client: Marshall Environmental Management, Inc.
1601 SW 89th Street, Ste. A-100
Oklahoma City, OK 73159

Acct. No.: A331

Project: Weatherford Armory (03-20-14)
Location: Weatherford, OK
Project No.: 0298-LBP-110613

QuanTEM ID	Client ID	Matrix	Parameter	Results	Reporting Limits	Units	Date/Time Analyzed	Method
001	1	Wipe	Lead	49.3	9	ug/sq. Ft.	03/21/14 10:30	W NIOSH 9100
002	2	Wipe	Lead	11.7	9	ug/sq. Ft.	03/21/14 10:30	W NIOSH 9100

Authorized Signature:

Carter Cox, Lab Tech

Note: Sample results have not been corrected for blank values.

This report applies only to the standards or procedures indicated and to the specific samples tested. It is not indicative of the qualities of apparently identical or similar products or procedures, nor does it represent an ongoing assurance program unless so noted. These reports are for the exclusive use of the client and are not to be reproduced without specific written permission. QuanTEM is not responsible for user-supplied data used in calculations.

Unless otherwise noted, upon receipt the condition of the sample was acceptable for analysis.

Wipe materials must meet ASTM E1792 criteria. Method detection limits and resultant reporting limits may not be valid for non-ASTM E1792 wipe material.

EPA Method 7000B (1) = EPA 600/R-93/200 Preparation Modified. EPA 7000B Analysis Modified

EPA Method 7082 (2) = EPA 600/R-93/200 Preparation Modified. EPA 7082 Analysis Modified

Supplemental Report
QAQC Results

QA ID: 11881
Test: Lead

Date: 3/21/2014
Matrix: Wipe

Lab Number: 233196
Approved By: Carter Cox
Date Approved: 3/21/2014

Notes:

Blank Data:

Type of Blank	Blank Value
FCB	0
Matrix Blank	0

Standards Data:

Standard	Low Limit	Obtained	High Limit
CCV	4.5	5.1	5.5
FCV	4.5	5.1	5.5
ICV	0.9	1.06	1.1
RLVS	0.144	0.2	0.216

Duplicate Data:

Recovery Data:

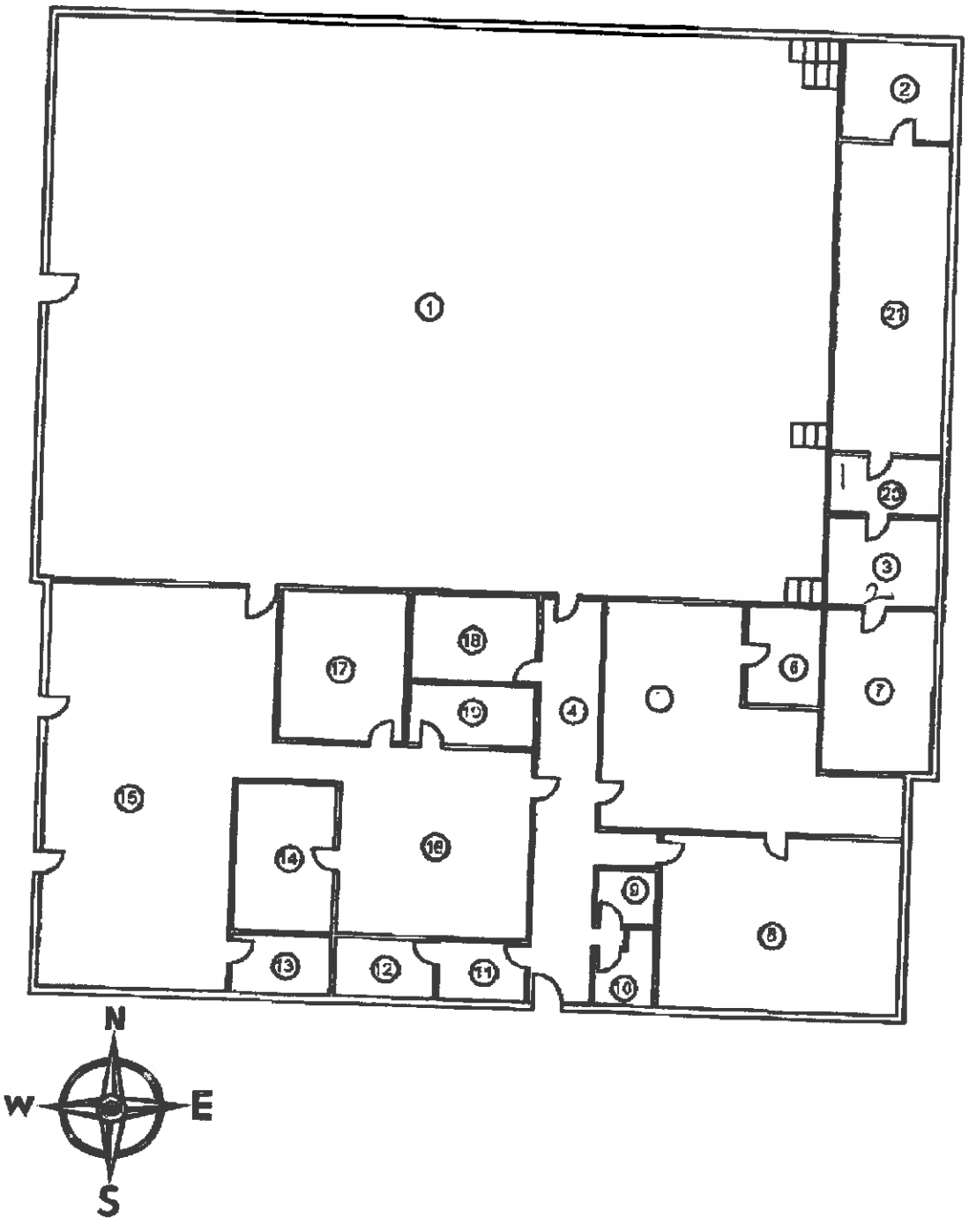
Sample Number	Result	Spike Level	Result + Spike	% Recovery	Dup. Result + Spike	% Dup. Recovery	% Spike RPD
MS-W2	0.000	5.020	5.055	100.7	4.912	97.9	2.9

Authorized Signature: Carter Cox

Carter Cox, Lab Tech

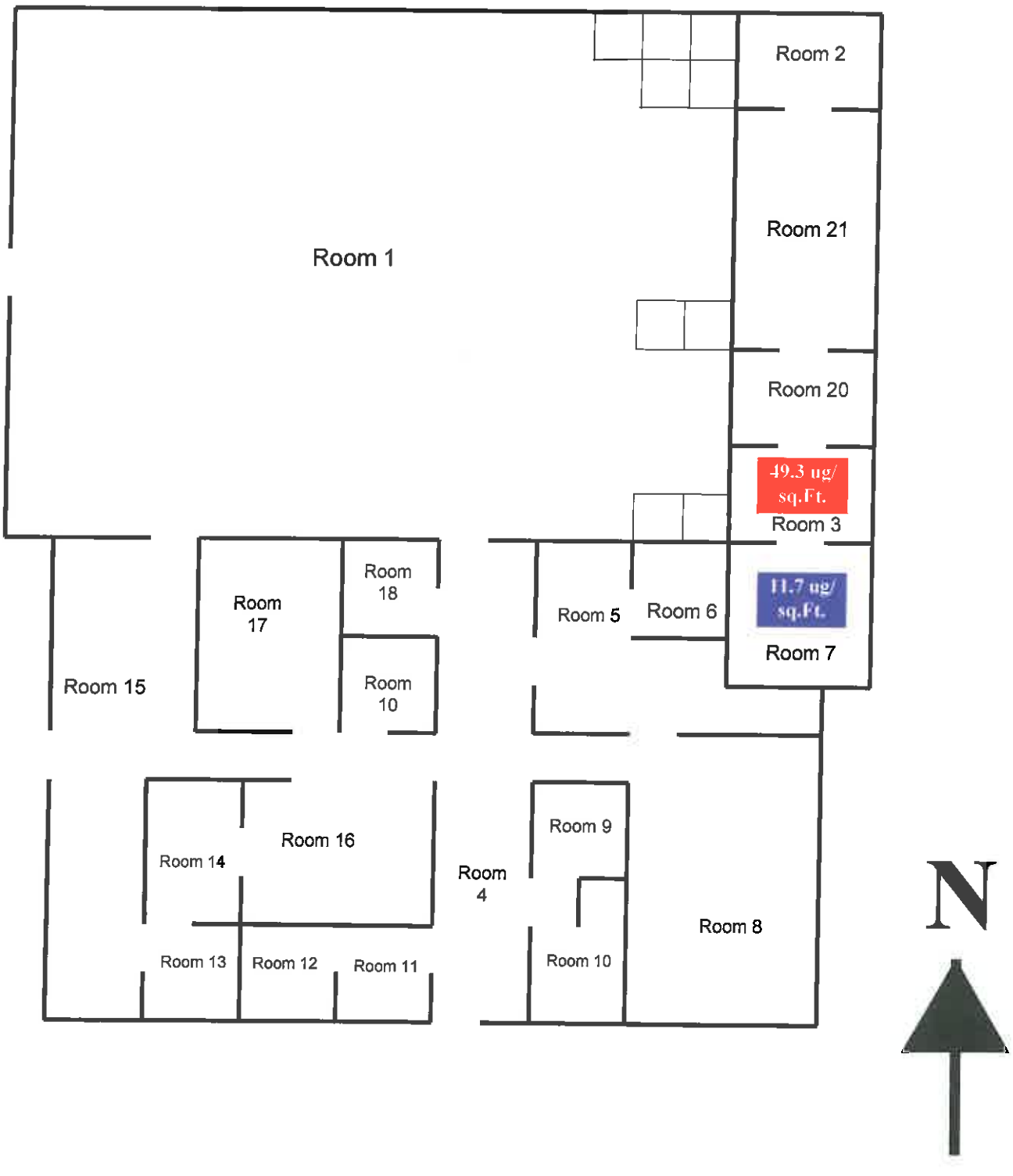
Weatherford Armory

233196



Weatherford Armory

03-20-14



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LEGAL DOCUMENT - PLEASE PRINT LEGIBLY

For Lab Use Only	
Lab No.	233824
	Accept / Reject

Contact Information		Project Information	
Company: Marshall Environmental	Phone: 405-616-0401	Project Name: Weatherford Armory (4-4-14)	
Contact: Rachel Wards	Cell Phone: 405-354-7305	Project Location: Weatherford, OK	
Account #:	E-mail: marshenvesw@aol.net	Project ID: 0298-LBP-110613	

Report Results (☑ one box): ☐ QuanTEM Website ☒ Other dustin.davidson@dep.ok.gov

Sampled By:	Name: Rachel Wards	Date: 4/4/14

RELINQUISHED BY	DATE & TIME	VIA	RECEIVED BY	DATE & TIME
	4/4/14 14:40			4/4/14 2:40

REQUESTED SERVICES (Please ☑ the Appropriate Boxes)

No.	Sample ID (10 Characters Max)	Sample Description	Volume (Liters)	Volume Area (Length x Width)	Sample Matrix (see matrix code box)	Analysis: Pb	Units (☑ ONE box only): PPM	Wt %	mg / l	µg /ft²	µg / m³	mg / cm²
1	1	IFR-N FLOOR		1ft2	C	X				X		
2	2	↓		↓	↓	↓				↓		
3	3											
4	4	IFR-S FLOOR										
5	5	↓										
6	6											
7	7	IFR-N WALL										
8	8	↓										
9	9											
10	10	IFR-NW E WALL										
11	11	↓										
12	12											

Sample Matrix Codes	
A	Soil
B	Paint Chips
C	Surface / Dust Wipes
D	Bulk Miscellaneous
E	Air Cassette

TURNAROUND TIME	
	Same Day
X	24 - Hour
	3 - Day
	5 - Day

SATURDAY SAMPLE DELIVERY - CALL TO SCHEDULE • Use this address for Saturday Delivery only: 4220 N. Santa Fe Ave., Oklahoma City, OK 73105-8517 • Mark Package "Hold for Saturday Pickup"

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LEGAL DOCUMENT - PLEASE PRINT LEGIBLY

For Lab Use Only	
Lab No. 233824	
Accept	Reject

Project Information

Company: Mem | Project Name: Weatherford Armory | Project Location: Weatherford, OK

REQUESTED SERVICES (Please ☑ the Appropriate Boxes)

No.	Sample ID (10 Characters Max)	Sample Description	Volume (Liters)	Volume Area (Length x Width)	Sample Matrix (see matrix code box)	Analysis: Pb	Units (☑ ONE box only): PPM	Wt %	mg / l	µg /ft²	µg / m³	mg / cm²
13	13	IFR- ~~SW Wall~~ SE wall		Hf2	C	X				X		
14	14	↓		↓	↓	↓				↓		
15	15	↓		↓	↓	↓				↓		
16	16	IFR SW wall		↓	↓	↓				↓		
17	17	↓		↓	↓	↓				↓		
18	18	↓		↓	↓	↓				↓		
19	19	IFR ~~SE Wall~~ SW wall		↓	↓	↓				↓		
20	20	↓		↓	↓	↓				↓		
21	21	↓		↓	↓	↓				↓		
22	22	IFR- ~~NE Wall~~ NW wall		↓	↓	↓				↓		
23	23	↓		↓	↓	↓				↓		
24	24	↓		↓	↓	↓				↓		
25	25	IFR- N. Ceiling		↓	↓	↓				↓		
26	26	↓		↓	↓	↓				↓		
27	27	↓		↓	↓	↓				↓		
28	28	IFR- S. Ceiling		↓	↓	↓				↓		
29	29	↓		↓	↓	↓				↓		
30	30	↓		↓	↓	↓				↓		

Sample Matrix Codes	
A	Soil
B	Paint Chips
C	Surface / Dust Wipes
D	Bulk Miscellaneous
E	Air Cassette

SATURDAY SAMPLE DELIVERY - CALL TO SCHEDULE • Use this address for Saturday Delivery only: 4220 N. Santa Fe Ave., Oklahoma City, OK 73105-8517 • Mark Package "Hold for Saturday Pickup"

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2033 Heritage Park Drive, Oklahoma City, OK 73120-7502
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LEGAL DOCUMENT – PLEASE PRINT LEGIBLY

For Lab Use Only	
Lab No.	233824
Accept	Reject

Project Information

Company: NEM | Project Name: Weatherford Armory | Project Location: Weatherford, OK

REQUESTED SERVICES (Please ☑ the Appropriate Boxes)

No.	Sample ID (10 Characters Max)	Sample Description	Volume (Liters)	Volume Area (Length x Width)	Sample Matrix (see matrix code box)	Analysis: Pb	Units (☑ ONE box only): PPM	Wt %	mg / l	µg / ft²	µg / m³	mg / cm²
13	31	Side Room Floor		1 ft 2	C	X				X		
14	32	↓		↓	↓	↓				↓		
15	33	↓		↓	↓	↓				↓		
16	34	Side Room N Wall		↓	↓	↓				↓		
17	35	↓		↓	↓	↓				↓		
18	36	↓		↓	↓	↓				↓		
19	37	Side Room E Wall		↓	↓	↓				↓		
20	38	↓		↓	↓	↓				↓		
21	39	↓		↓	↓	↓				↓		
22	40	Side Room S. Wall		↓	↓	↓				↓		
23	41	↓		↓	↓	↓				↓		
24	42	↓		↓	↓	↓				↓		
25	43	Side Room W. Wall		↓	↓	↓				↓		
26	44	↓		↓	↓	↓				↓		
27	45	↓		↓	↓	↓				↓		
28	46	Side Room Ceiling		↓	↓	↓				↓		
29	47	↓		↓	↓	↓				↓		
30	48	↓		↓	↓	↓				↓		

Sample Matrix Codes	
A	Soil
B	Paint Chips
C	Surface / Dust Wipes
D	Bulk Miscellaneous
E	Air Cassette

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LEGAL DOCUMENT - PLEASE PRINT LEGIBLY

For Lab Use Only
Lab No. 233824
(Accept) Reject

Project Information

Company: MEM | Project Name: Weatherford Armory | Project Location: Weatherford, OK

REQUESTED SERVICES (Please ☑ the Appropriate Boxes)

No.	Sample ID (10 Characters Max)	Sample Description	Volume (Liters)	Volume Area (Length x Width)	Sample Matrix (see matrix code box)	Analysis			Units (☑ ONE box only)					
						Pb			PPM	Wt %	mg / l	µg /ft²	µg / m³	mg / cm²
13	49	Room 20 Floor		1472	C	X						X		
14	50	Room 17 Floor		↓	↓	↓						↓		
15	51	↓												
16	52													
17														
18														
19														
20														
21														
22														
23														
24														
25														
26														
27														
28														
29														
30														

Sample Matrix Codes	
A	Soil
B	Paint Chips
C	Surface / Dust Wipes
D	Bulk Miscellaneous
E	Air Cassette

2033 Heritage Park Drive / Oklahoma City, OK 73120 / (405) 755-7272 / Fax (405) 755-2058

Environmental Chemistry Analysis Report

QuanTEM Set ID: 233824
Date Received: 04/04/14
Received By: Sherrie Leftwich
Date Sampled:
Time Sampled:
Analyst: BM
Date of Report: 4/7/2014

AIHA ID: 101352

Client: Marshall Environmental Management, Inc.
1601 SW 89th Street, Ste. A-100
Oklahoma City, OK 73159

Acct. No.: A331

Project: Weatherford Armory (4-4-14)
Location: Weatherford, OK
Project No.: 0298-LBP-110613

QuanTEM ID	Client ID	Matrix	Parameter	Results	Reporting Limits	Units	Date/Time Analyzed	Method
001	1	Wipe	Lead	<9.00	9	ug/sq. Ft.	04/07/14 10:00	W NIOSH 9100
002	2	Wipe	Lead	11.2	9	ug/sq. Ft.	04/07/14 10:00	W NIOSH 9100
003	3	Wipe	Lead	<9.00	9	ug/sq. Ft.	04/07/14 10:00	W NIOSH 9100
004	4	Wipe	Lead	<9.00	9	ug/sq. Ft.	04/07/14 10:00	W NIOSH 9100
005	5	Wipe	Lead	20.4	9	ug/sq. Ft.	04/07/14 10:00	W NIOSH 9100
006	6	Wipe	Lead	<9.00	9	ug/sq. Ft.	04/07/14 10:00	W NIOSH 9100
007	7	Wipe	Lead	<9.00	9	ug/sq. Ft.	04/07/14 10:00	W NIOSH 9100
008	8	Wipe	Lead	<9.00	9	ug/sq. Ft.	04/07/14 10:00	W NIOSH 9100
009	9	Wipe	Lead	<9.00	9	ug/sq. Ft.	04/07/14 10:00	W NIOSH 9100
010	10	Wipe	Lead	<9.00	9	ug/sq. Ft.	04/07/14 10:00	W NIOSH 9100
011	11	Wipe	Lead	<9.00	9	ug/sq. Ft.	04/07/14 10:00	W NIOSH 9100
012	12	Wipe	Lead	<9.00	9	ug/sq. Ft.	04/07/14 10:00	W NIOSH 9100
013	13	Wipe	Lead	<9.00	9	ug/sq. Ft.	04/07/14 10:00	W NIOSH 9100
014	14	Wipe	Lead	<9.00	9	ug/sq. Ft.	04/07/14 10:00	W NIOSH 9100
015	15	Wipe	Lead	<9.00	9	ug/sq. Ft.	04/07/14 10:00	W NIOSH 9100
016	16	Wipe	Lead	<9.00	9	ug/sq. Ft.	04/07/14 10:00	W NIOSH 9100
017	17	Wipe	Lead	<9.00	9	ug/sq. Ft.	04/07/14 10:00	W NIOSH 9100

Note: Sample results have not been corrected for blank values.

Unless otherwise noted, upon receipt the condition of the sample was acceptable for analysis.

Wipe materials must meet ASTM E1792 criteria. Method detection limits and resultant reporting limits may not be valid for non-ASTM E1792 wipe material.

EPA Method 7000B (1) = EPA 600/R-93/200 Preparation Modified. EPA 7000B Analysis Modified

EPA Method 7082 (2) = EPA 600/R-93/200 Preparation Modified. EPA 7082 Analysis Modified

2033 Heritage Park Drive / Oklahoma City, OK 73120 / (405) 755-7272 / Fax (405) 755-2058

Environmental Chemistry Analysis Report

QuanTEM Set ID: 233824
Date Received: 04/04/14
Received By: Sherrie Leftwich
Date Sampled:
Time Sampled:
Analyst: BM
Date of Report: 4/7/2014

AIHA ID: 101352

Client: Marshall Environmental Management, Inc.
1601 SW 89th Street, Ste. A-100
Oklahoma City, OK 73159

Acct. No.: A331

Project: Weatherford Armory (4-4-14)
Location: Weatherford, OK
Project No.: 0298-LBP-110613

QuanTEM ID	Client ID	Matrix	Parameter	Results	Reporting Limits	Units	Date/Time Analyzed	Method
018	18	Wipe	Lead	<9.00	9	ug/sq. Ft.	04/07/14 10:00	W NIOSH 9100
019	19	Wipe	Lead	<9.00	9	ug/sq. Ft.	04/07/14 10:00	W NIOSH 9100
020	20	Wipe	Lead	<9.00	9	ug/sq. Ft.	04/07/14 10:00	W NIOSH 9100
021	21	Wipe	Lead	<9.00	9	ug/sq. Ft.	04/07/14 10:00	W NIOSH 9100
022	22	Wipe	Lead	<9.00	9	ug/sq. Ft.	04/07/14 10:00	W NIOSH 9100
023	23	Wipe	Lead	<9.00	9	ug/sq. Ft.	04/07/14 10:00	W NIOSH 9100
024	24	Wipe	Lead	<9.00	9	ug/sq. Ft.	04/07/14 10:00	W NIOSH 9100
025	25	Wipe	Lead	<9.00	9	ug/sq. Ft.	04/07/14 10:00	W NIOSH 9100
026	26	Wipe	Lead	<9.00	9	ug/sq. Ft.	04/07/14 10:00	W NIOSH 9100
027	27	Wipe	Lead	<9.00	9	ug/sq. Ft.	04/07/14 10:00	W NIOSH 9100
028	28	Wipe	Lead	<9.00	9	ug/sq. Ft.	04/07/14 10:00	W NIOSH 9100
029	29	Wipe	Lead	<9.00	9	ug/sq. Ft.	04/07/14 10:00	W NIOSH 9100
030	30	Wipe	Lead	<9.00	9	ug/sq. Ft.	04/07/14 10:00	W NIOSH 9100
031	31	Wipe	Lead	<9.00	9	ug/sq. Ft.	04/07/14 10:00	W NIOSH 9100
032	32	Wipe	Lead	<9.00	9	ug/sq. Ft.	04/07/14 10:00	W NIOSH 9100
033	33	Wipe	Lead	<9.00	9	ug/sq. Ft.	04/07/14 10:00	W NIOSH 9100
034	34	Wipe	Lead	<9.00	9	ug/sq. Ft.	04/07/14 10:00	W NIOSH 9100

Note: Sample results have not been corrected for blank values.

Unless otherwise noted, upon receipt the condition of the sample was acceptable for analysis.

Wipe materials must meet ASTM E1792 criteria. Method detection limits and resultant reporting limits may not be valid for non-ASTM E1792 wipe material.

EPA Method 7000B (1) = EPA 600/R-93/200 Preparation Modified. EPA 7000B Analysis Modified
EPA Method 7082 (2) = EPA 600/R-93/200 Preparation Modified. EPA 7082 Analysis Modified

QUANTEM LABORATORIES

2033 Heritage Park Drive / Oklahoma City, OK 73120 / (405) 755-7272 / Fax (405) 755-2058

Environmental Chemistry Analysis Report

QuanTEM Set ID: 233824
Date Received: 04/04/14
Received By: Sherrie Leftwich
Date Sampled:
Time Sampled:
Analyst: BM
Date of Report: 4/7/2014

AIHA ID: 101352

Client: Marshall Environmental Management, Inc.
1601 SW 89th Street, Ste. A-100
Oklahoma City, OK 73159

Acct. No.: A331

Project: Weatherford Armory (4-4-14)
Location: Weatherford, OK
Project No.: 0298-LBP-110613

QuanTEM ID	Client ID	Matrix	Parameter	Results	Reporting Limits	Units	Date/Time Analyzed	Method
035	35	Wipe	Lead	<9.00	9	ug/sq. Ft.	04/07/14 10:00	W NIOSH 9100
036	36	Wipe	Lead	<9.00	9	ug/sq. Ft.	04/07/14 10:00	W NIOSH 9100
037	37	Wipe	Lead	<9.00	9	ug/sq. Ft.	04/07/14 10:00	W NIOSH 9100
038	38	Wipe	Lead	<9.00	9	ug/sq. Ft.	04/07/14 10:00	W NIOSH 9100
039	39	Wipe	Lead	<9.00	9	ug/sq. Ft.	04/07/14 10:00	W NIOSH 9100
040	40	Wipe	Lead	<9.00	9	ug/sq. Ft.	04/07/14 10:00	W NIOSH 9100
041	41	Wipe	Lead	<9.00	9	ug/sq. Ft.	04/07/14 10:00	W NIOSH 9100
042	42	Wipe	Lead	<9.00	9	ug/sq. Ft.	04/07/14 10:00	W NIOSH 9100
043	43	Wipe	Lead	<9.00	9	ug/sq. Ft.	04/07/14 10:00	W NIOSH 9100
044	44	Wipe	Lead	<9.00	9	ug/sq. Ft.	04/07/14 10:00	W NIOSH 9100
045	45	Wipe	Lead	<9.00	9	ug/sq. Ft.	04/07/14 10:00	W NIOSH 9100
046	46	Wipe	Lead	<9.00	9	ug/sq. Ft.	04/07/14 10:00	W NIOSH 9100
047	47	Wipe	Lead	<9.00	9	ug/sq. Ft.	04/07/14 10:00	W NIOSH 9100
048	48	Wipe	Lead	<9.00	9	ug/sq. Ft.	04/07/14 10:00	W NIOSH 9100
049	49	Wipe	Lead	10.4	9	ug/sq. Ft.	04/07/14 10:00	W NIOSH 9100
050	50	Wipe	Lead	<9.00	9	ug/sq. Ft.	04/07/14 10:00	W NIOSH 9100
051	51	Wipe	Lead	11.5	9	ug/sq. Ft.	04/07/14 10:00	W NIOSH 9100

Note: Sample results have not been corrected for blank values.

This report applies only to the standards or procedures indicated and to the specific samples tested. It is not indicative of the qualities of apparently identical or similar products or procedures, nor does it represent an ongoing assurance program unless so noted. These reports are for the exclusive use of the client and are not to be reproduced without specific written permission. QuanTEM is not responsible for user-supplied data used in calculations.

Unless otherwise noted, upon receipt the condition of the sample was acceptable for analysis.

Wipe materials must meet ASTM E1792 criteria. Method detection limits and resultant reporting limits may not be valid for non-ASTM E1792 wipe material.

EPA Method 7000B (1) = EPA 600/R-93/200 Preparation Modified. EPA 7000B Analysis Modified

EPA Method 7082 (2) = EPA 600/R-93/200 Preparation Modified. EPA 7082 Analysis Modified

QUANTEM® LABORATORIES

2033 Heritage Park Drive / Oklahoma City, OK 73120 / (405) 755-7272 / Fax (405) 755-2058

Environmental Chemistry Analysis Report

QuanTEM Set ID: 233824
Date Received: 04/04/14
Received By: Sherrie Leftwich
Date Sampled:
Time Sampled:
Analyst: BM
Date of Report: 4/7/2014

AIHA ID: 101352

Client: Marshall Environmental Management, Inc.
1601 SW 89th Street, Ste. A-100
Oklahoma City, OK 73159

Acct. No.: A331

Project: Weatherford Armory (4-4-14)
Location: Weatherford, OK
Project No.: 0298-LBP-110613

QuanTEM ID	Client ID	Matrix	Parameter	Results	Reporting Limits	Units	Date/Time Analyzed	Method
052	52	Wipe	Lead	<9.00	9	ug/sq. Ft.	04/07/14 10:00	W NIOSH 9100

Authorized Signature: _____
Benton Miller, Analyst

Note: Sample results have not been corrected for blank values.

This report applies only to the standards or procedures indicated and to the specific samples tested. It is not indicative of the qualities of apparently identical or similar products or procedures, nor does it represent an ongoing assurance program unless so noted. These reports are for the exclusive use of the client and are not to be reproduced without specific written permission. QuanTEM is not responsible for user-supplied data used in calculations.

Unless otherwise noted, upon receipt the condition of the sample was acceptable for analysis.

Wipe materials must meet ASTM E1792 criteria. Method detection limits and resultant reporting limits may not be valid for non-ASTM E1792 wipe material.

EPA Method 7000B (1) = EPA 600/R-93/200 Preparation Modified. EPA 7000B Analysis Modified
EPA Method 7082 (2) = EPA 600/R-93/200 Preparation Modified. EPA 7082 Analysis Modified

Supplemental Report
QAQC Results

QA ID: 11937
Test: Lead

Date: 4/7/2014
Matrix: Wipe

Lab Number: 233824
Approved By: Benton Miller
Date Approved: 4/7/2014

Notes:

Blank Data:

Type of Blank	Blank Value
FCB	0
Matrix Blank	0

Standards Data:

Standard	Low Limit	Obtained	High Limit
CCV	4.5	5.4	5.5
FCV	4.5	5.3	5.5
ICV	0.9	0.96	1.1
RLVS	0.144	0.195	0.216

Duplicate Data:

Recovery Data:

Sample Number	Result	Spike Level	Result + Spike	% Recovery	Dup. Result + Spike	% Dup. Recovery	% Spike RPD
MS-W3	0.000	5.000	5.438	108.8	5.527	110.5	1.6
MS-W2	0.000	5.010	5.103	101.9	5.104	101.9	0.0
MS-W1	0.000	5.422	5.112	94.3	5.683	104.8	10.6

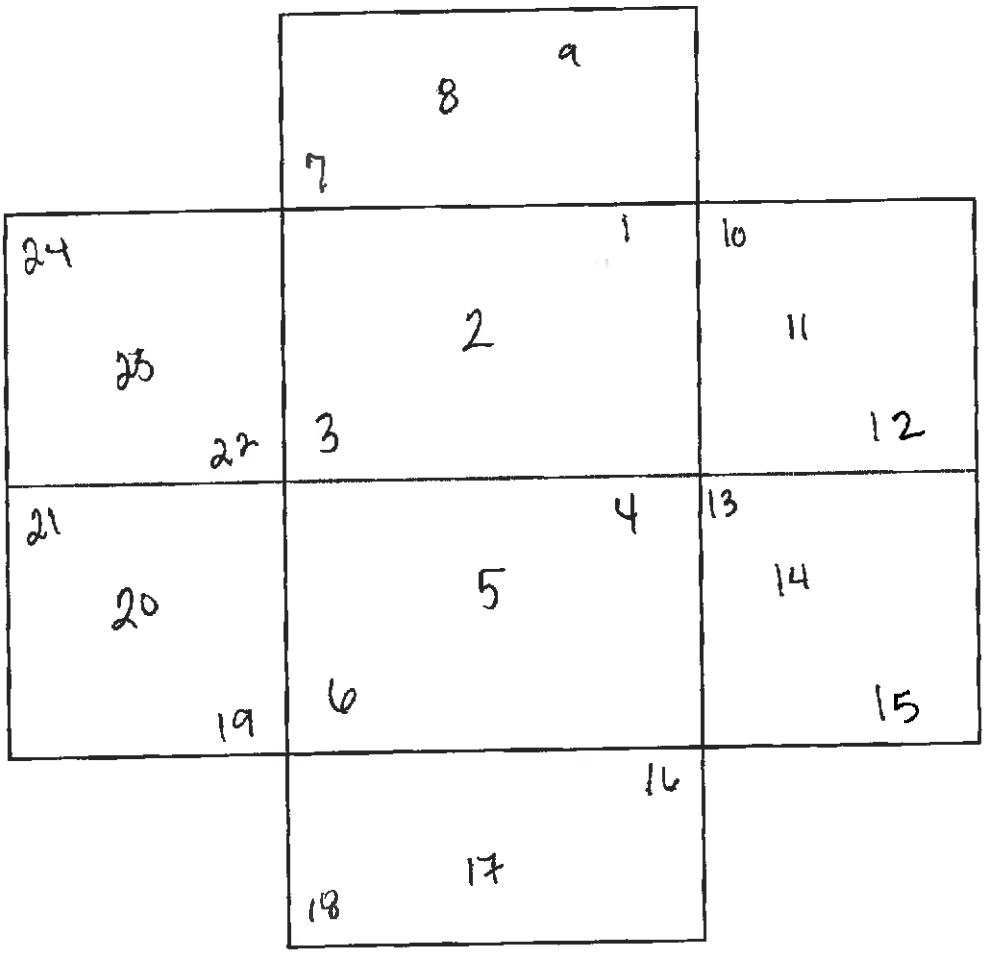
Authorized Signature: _____

Benton Miller, Analyst

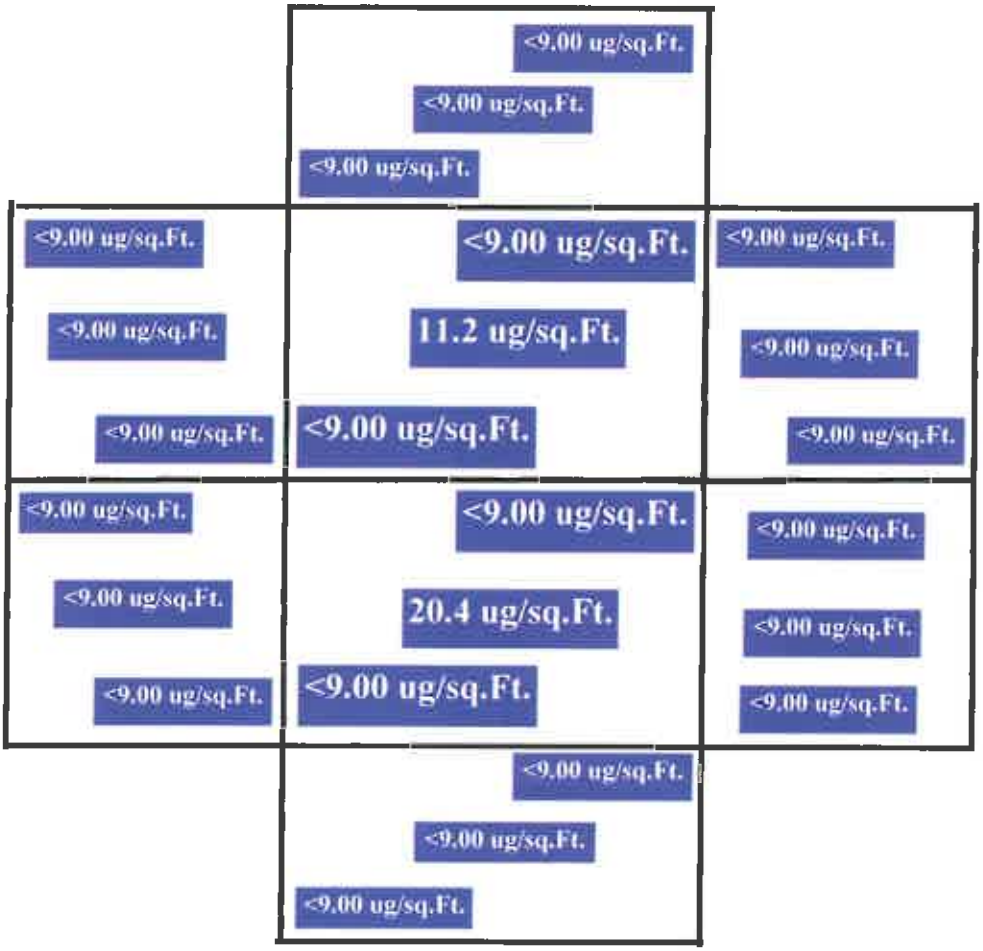
Q#233824

Firing Range Walls and Floors

N



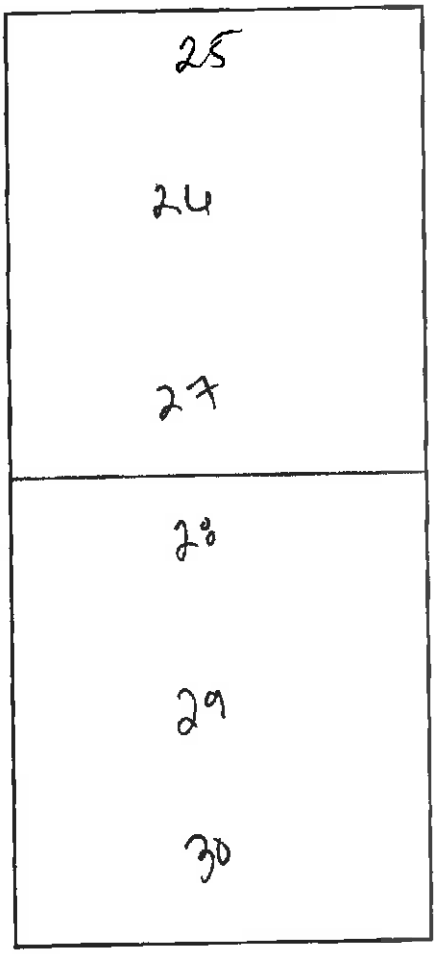
Firing Range
Walls & Floor
04-04-14



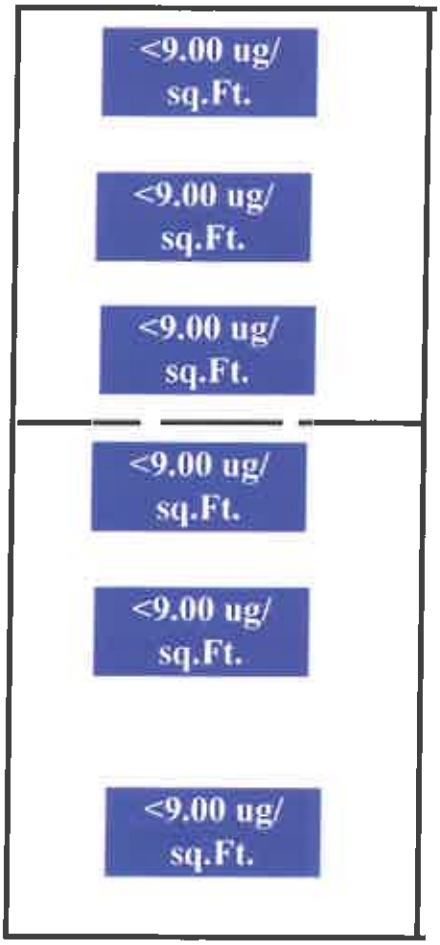
N

Q#233824

Firing Range Ceiling
N



Firing Range
Ceiling
04-04-14

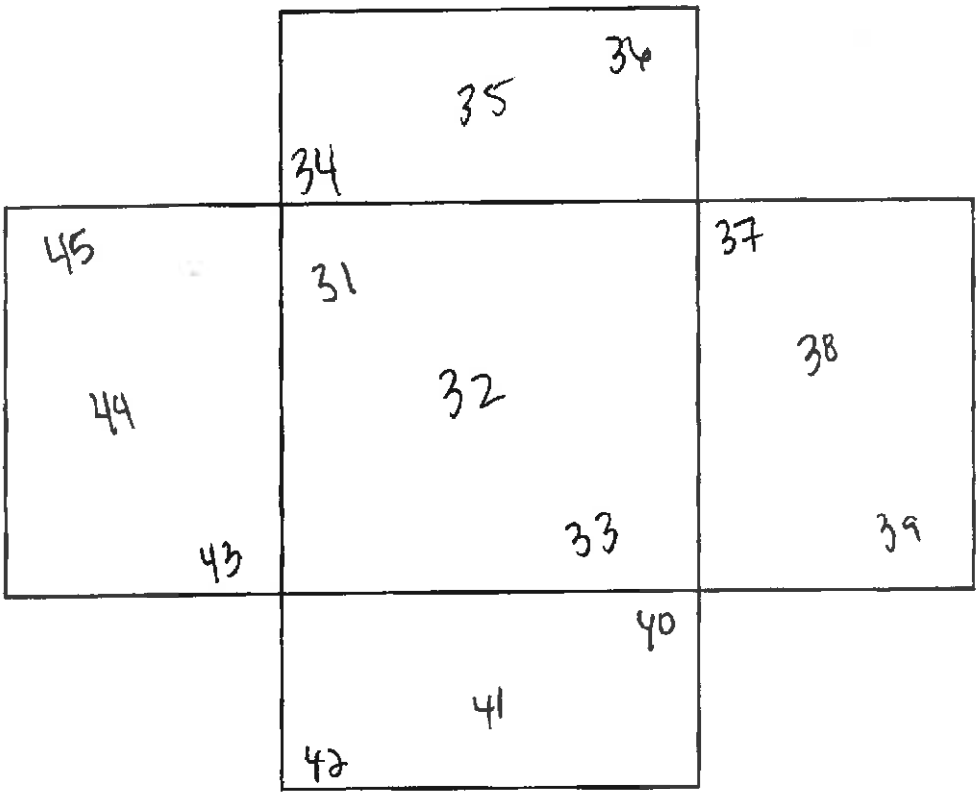


N

Q # 233824

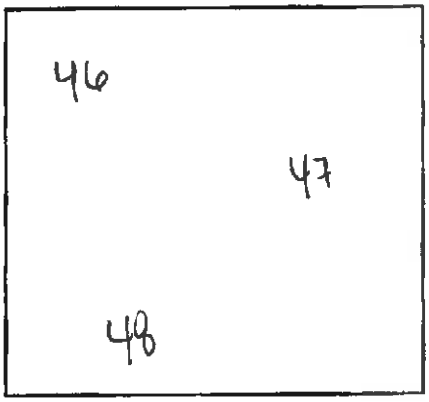
Side Room Walls and Floors

N

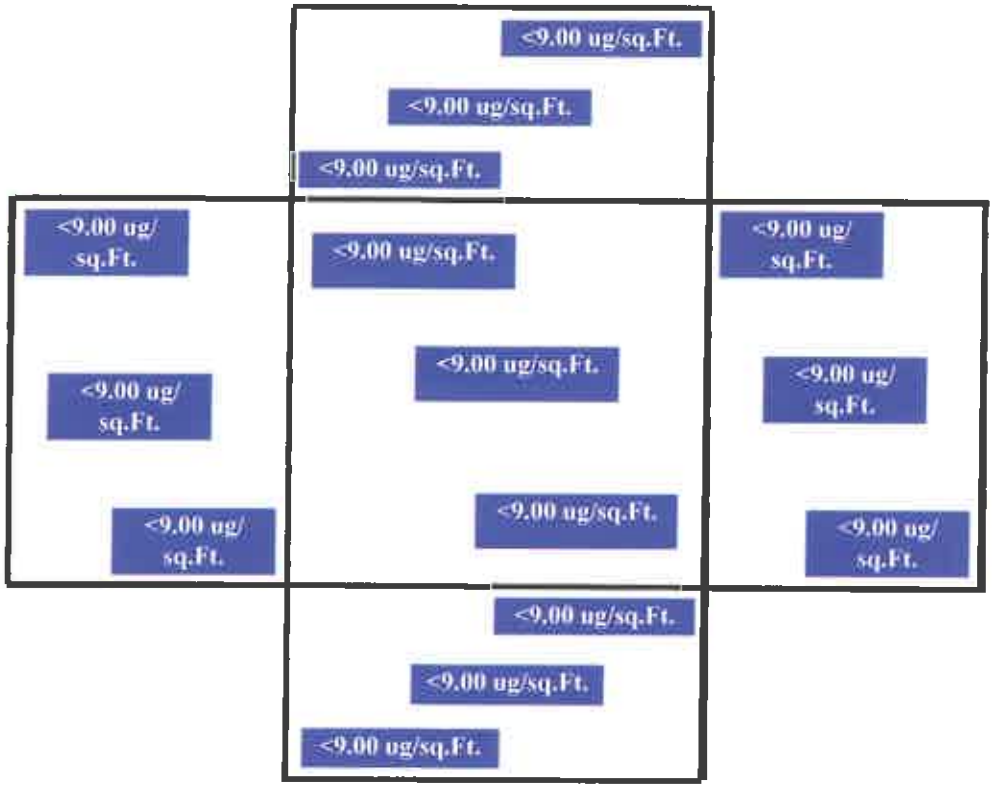


Side Room Ceiling

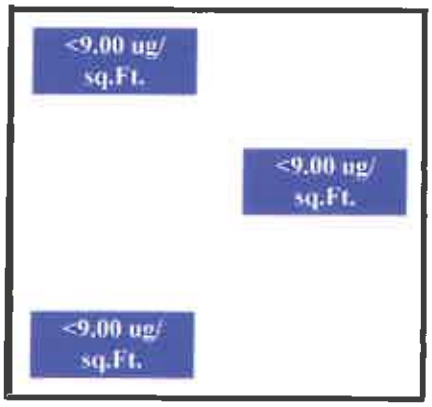
N



Side Room Walls & Floors 04-04-14



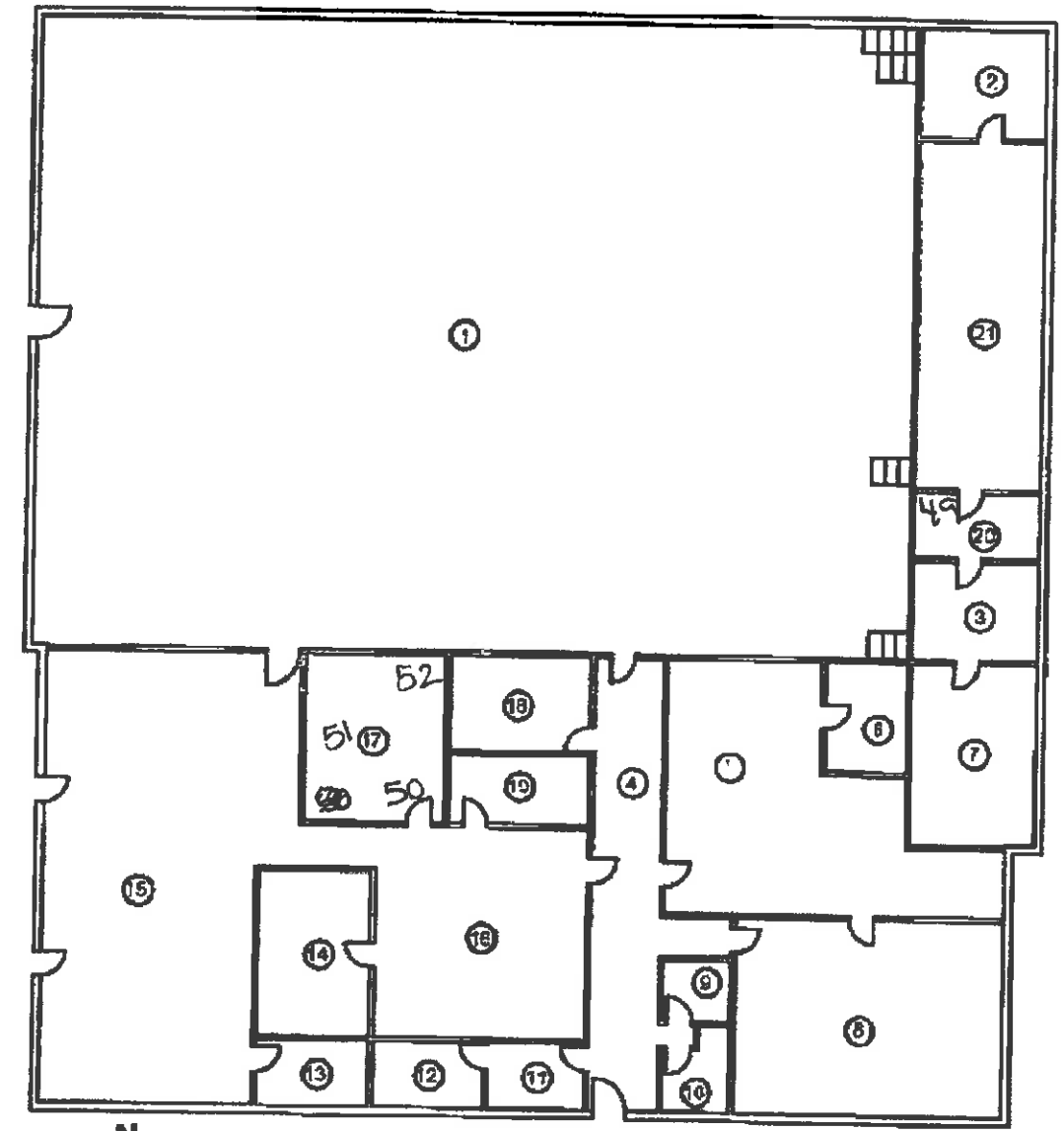
Side Room Ceiling 04-04-14



N

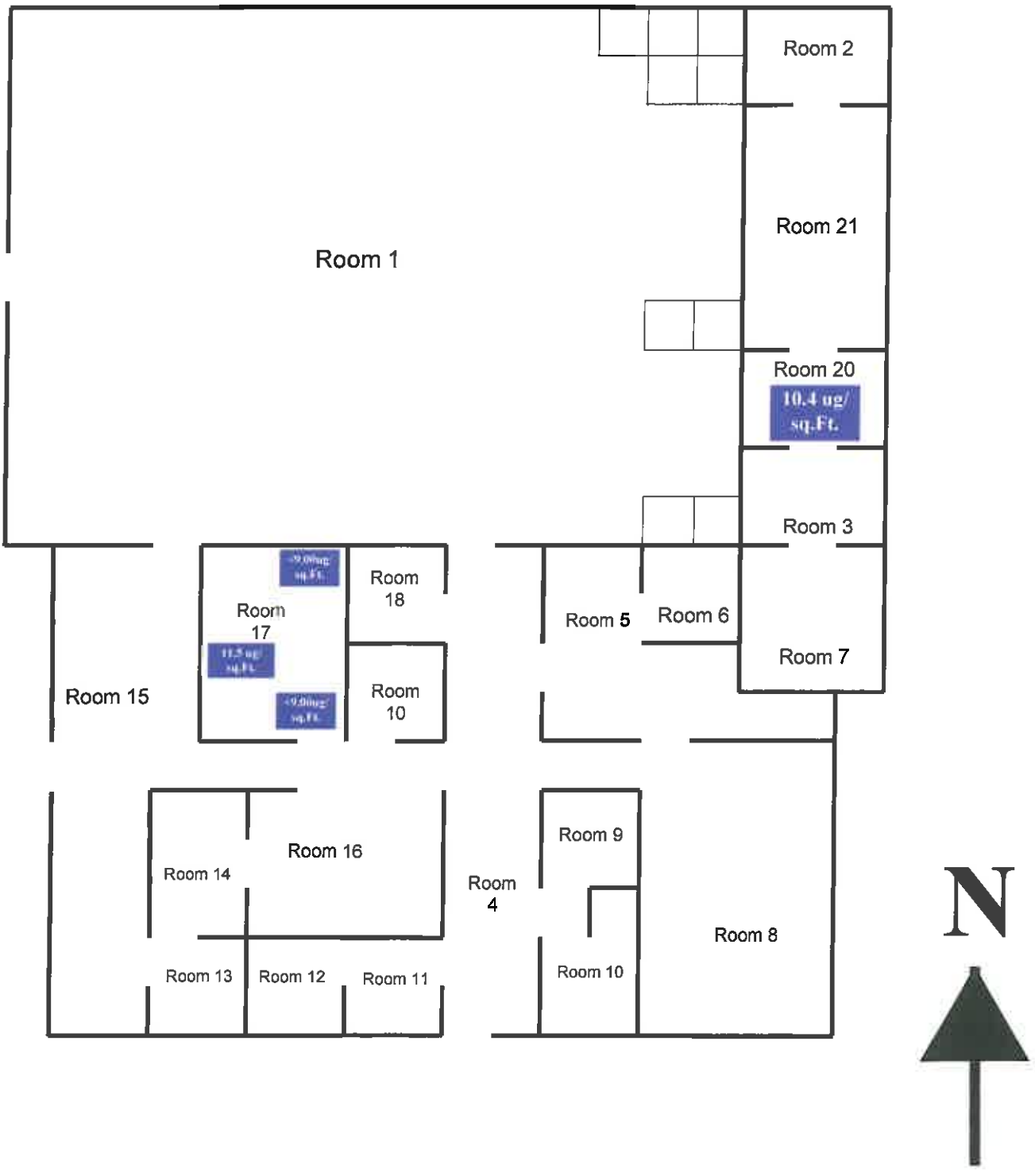
Weatherford Armory

Q#233424



Weatherford Armory

04-04-14



Department of Environmental Quality

This is to Certify That

RACHEL WOODS

has met the specifications of the Oklahoma Lead-Based Paint Management Act
and is certified as a Lead-Based Paint

INSPECTOR/RISK ASSESSOR

Certification #: OKRASR13701

This certificate is valid from the date of issuance and expires as prescribed by law.

Issued on: 4/1/2014 Expires on: 3/31/2015

Division Director
Air Quality Division

Environmental Programs Manager
Air Quality Division

Department of Environmental Quality

This is to Certify That

CHARLES MARSHALL

has met the specifications of the Oklahoma Lead-Based Paint Management Act and is certified as a Lead-Based Paint

INSPECTOR/RISK ASSESSOR

Certification #: OKRASR13-118

This certificate is valid from the date of issuance and expires as prescribed by law.

Issued on: 4/1/2013 Expires on: 3/31/2014

Division Director
Air Quality Division

Environmental Programs Manager
Air Quality Division

Department of Environmental Quality

This is to Certify That

CHARLES MARSHALL

has met the specifications of the Oklahoma Lead-Based Paint Management Act
and is certified as a Lead-Based Paint

INSPECTOR/RISK ASSESSOR

Certification #: OKRASR13418

This certificate is valid from the date of issuance and expires as prescribed by law.

Issued on: 4/1/2014 Expires on: 3/31/2015

Division Director
Air Quality Division

Environmental Programs Manager
Air Quality Division

Department of Environmental Quality

This is to Certify That

RACHEL WOODS

has met the specifications of the Oklahoma Lead Based Paint Management Act
and is certified as a Lead Based Paint

INSPECTOR/RISK ASSESSOR

Certification #: OKRASR13701

This certificate is valid from the date of issuance and expires as provided by law.

Issued on: 4/1/2013 Expires on: 3/31/2014

Division Director
Air Quality Division

Environmental Programs Manager
Air Quality Division

Department of Environmental Quality

This is to Certify That

MARSHALL ENVIRONMENTAL MANAGEMENT

has met the specifications of the Oklahoma Lead Based Paint Management Act and is certified as a Lead Based Paint

FIRM

Certificate #: OKFIRM13160

This certificate is valid from the date of issuance and expires as prescribed by law

Issued on: 4/1/2013 Expires on: 3/31/2014

Division Director
Air Quality Division

DEQ OKLAHOMA

Environmental Programs Manager
Air Quality Division

Department of Environmental Quality

This is to certify that

MARSHALL ENVIRONMENTAL MANAGEMENT

has met the specifications of the Oklahoma Lead Based Paint Management Act and is certified as a Lead Based Paint

FIRM

Certification #: OKFIRM11160

This certificate is valid from the date of issuance and expires as prescribed by law.

Issued on: 4/1/2014 Expires on: 3/31/2015

Division Director
Air Quality Division

Environmental Programs Manager
Air Quality Division