

**Former National Guard Armory
Alva, Oklahoma**

Remediation Final Report



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



The Oklahoma Department of Environmental Quality (DEQ) is pleased to present Northwestern Oklahoma State University with the Final Remediation Report for the former Alva 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 Alva 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 fire door insulation and floor tile
- Asbestos abatement, including:
 - Removal and replacement of fire doors
 - Removal of floor tile

TARGETED BROWNFIELD ASSESSMENT

In August 2011, DEQ provided a Phase I Targeted Brownfield Assessment to Northwestern Oklahoma State University. 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) inspection
- Lead dust wipe sampling
- LBP abatement, including:
 - Removal of yellow stairs 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
- Lead dust abatement, including:
 - HEPA vacuuming and wet washing of floors in the building
- Proper disposal of associated waste



Additional copies of this report can be found at <http://www.deq.state.ok.us/lpdnew/scapIndex.htm> and DEQ Central Records at 707 N Robinson Oklahoma City, Oklahoma 73101.



This publication is issued by the Oklahoma Department of Environmental Quality authorized by Steven A. Thompson, Executive Director. Copies have been prepared at a cost of \$0.053 each. Copies have been deposited with the Publications Clearinghouse of the Oklahoma Department of Libraries. cnullins/LPD/Armories_SCAP/ArmoryReports/AlvaArmory_9/2012.

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



4619
QUITCLAIM DEED

I-2011-004619 Book 1116 Pg: 490
08/15/2011 1:34 pm Pg 0490-0491
Fee: \$ 15.00 Doc: \$ 0.00
Pam Inman - Woods County Clerk
State of Oklahoma

X6

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 Northwestern Oklahoma State University, Grantee, the following described real property and premises lying and situated in Woods County, State of Oklahoma, as follows:

CERTIFIED COPY

A tract of land located wholly within the North One-half of the Southeast Quarter of Section 26, Township 27, North Range 14, WIM, Woods County, Oklahoma, more particularly described as follows, to-wit:

Beginning at the Northwest corner of the Southeast Quarter of Section 26, Township 27, North Range 14, WIM, and proceeding thence South along the West line of the above Southeast Quarter of Section 26, a distance of 537.0 feet, thence S. 76°-56' E. a distance of 325.6 feet, thence S. 2°-14' W. a distance of 154.4 feet, thence East parallel to the North line of the above Southeast Quarter of Section 26, a distance of 488.8 feet to a point that is located 800.0 feet East of the above West Line of the Southeast Quarter of the Section 26, thence North parallel to the above West line of the Southeast of Section 26, a distance of 755.0 feet to the above North line of the Southeast Quarter of Section 26, thence West along the above North line of the Southeast Quarter of Section 26 a distance of 800.0 feet to the point of beginning, together with all the improvements thereon and the appurtenances thereunto belonging.

EXCEPT a strip of land fifty feet (50.0') wide adjoining and abutting upon the North 527.0 feet of the West side of the above described tract which strip of land is hereby reserved for the dedicated to the Public for street purposes, and also

EXCEPT a strip of land fifty feet (50.0) wide adjoining and abutting upon the North side of the above described tract which strip of land is hereby reserved for and dedicated to the Public for street purposes.

The above described tract contains a total of 12.48 acres, more or less, inclusive of the two above exceptions.

together with the improvements thereon and appurtenances thereunto belonging.

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



**NOTICE OF REMEDIATION
FORMER ALVA ARMORY
ALVA, OKLAHOMA**

LEGAL BASIS FOR NOTICE: The Oklahoma Department of Environmental Quality (DEQ) hereby files this Notice of Remediation pursuant to Oklahoma Statutes, 27A § 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.

The 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, Maintenance of said Engineering Controls herein described.

The Land Use Restrictions, Engineering Controls and Continuing Operation, 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 the 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 below 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 October 20, 2011, indicated that there was asbestos, lead-based paint, and lead dust in the building.

AFFECTED PROPERTY: The Affected Property is the former Alva Armory located at 995 Thunderbird Road, Alva, Woods County, Oklahoma, 73717.

The legal description is as follows:

A tract of land located wholly within the north one-half of the southeast quarter of Section 26, Township 27, North Range 14, W1M, Woods County, Oklahoma, more particularly described as follows, to-wit:

Beginning at the northwest corner of the southeast quarter of Section 26, Township 27, North Range 14, W1M, and proceeding thence south along the west line of the above southeast quarter of Section 26, a distance of 527.0 feet, thence S. 76°-56' E. a distance of 325.6 feet, thence S. 2°-14' W. a distance of 154.4 feet, thence east parallel to the north line of the above southeast quarter of Section 26, a distance of 488.8 feet to a point that is located 800.0 feet east of the above west line of the southeast quarter of Section 26, thence north parallel to the above west line of the southeast of Section 26, a distance of 755.0 feet to the above north line of the southeast quarter of Section 26, thence west along the above north line of the southeast quarter of Section 26 a distance of 800.0 feet to the point of beginning, together with all the improvements thereon and the appurtenances thereunto belonging.

EXCEPT a strip of land fifty feet (50.0') wide adjoining and abutting upon the north 527.0 feet of the west side of the above described tract which strip of land is hereby reserved for and dedicated to the Public for street purposes, and also

EXCEPT a strip of land fifty feet (50.0') wide adjoining and abutting upon the north side of the above described tract which strip of land is hereby reserved for and dedicated to the Public for street purposes

The above described tract contains a total of 12.48 acres, more or less, inclusive of the two above exceptions.

REMEDY: Remediation activities (Remedy) at the Affected Property included abatement of asbestos, lead-based paint and dust. The remedy was completed on July 26, 2012.

For more detailed information please refer to *Former National Guard Armory Alva, 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

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 at the above-described Affected Property are:

- a. No residential use of the property 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 a day in excess of 30 days per year.
- a. The IFR should not be used as a child occupied facility. Child-occupied facilities include, but are not limited to, day-care centers, preschools, and kindergarten classrooms where a child 6 or under spends at least 6 hours per week.

These land use restrictions apply to the entirety of the Affected Property described herein above.

CHANGING LAND USE RESTRICTIONS: Changes to land use restrictions must be approved by the DEQ or its successor agency. The person requesting the change in land use must demonstrate to the 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.

The 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.

The 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, the DEQ will file a recordable notice of remediation pursuant to state law in the land records in the 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.



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

9-26-12

Date

ACKNOWLEDGMENT

STATE OF OKLAHOMA
COUNTY OF OKLAHOMA

Before me, a Notary Public, in and for said County and State; on this 26th day of Sept, 2012, personally appeared Steven 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:

7-17, 2014

#02011624


Notary Public

MAINTENANCE PLAN

**MAINTENANCE PLAN
FORMER ALVA ARMORY
ALVA, OKLAHOMA**

The Armory located at 995 Thunderbird Road, Alva, 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 October 4, 2011, 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 July 26, 2012. 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 of indoor firing range were cleaned and encapsulated with lead-based paint encapsulant to remediate surfaces below 40 ug/SF. The walls need to be re-encapsulated if lead-based paint encapsulant shows signs of deterioration, damage, or flaking. Floor of indoor firing range was cleaned and sealed with concrete epoxy sealant to remediate surfaces below 40 µg/SF for lead. The floor needs to be resealed if epoxy sealant shows signs of deterioration, damage, or flaking.

Note – A list of DEQ approved acrylic sealant and elastomeric encapsulants is attached (Attachment 2). 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) 702-5115.

Sincerely,



Dustin Davidson
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 use of the property 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 a day in excess of thirty (30) days per year.
- b. The indoor firing range should not be used as a child occupied facility. Child occupied facilities include, but are not limited to, day-care centers, preschools, and kindergarten classrooms where a child under 6 spends at least 6 hours per week.

These land use restrictions apply to the entirety of the Affected Property described herein above.

ATTACHMENT 2

DEQ Approved Sealants and Encapsulants List

Acrylic Sealant approved by DEQ

KM-669 Acrylic

Lead-Based Paint Encapsulants approved by DEQ

Encapsulant Manufacturer Product(s)	Encapsulant
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

SURVEY AND ASSESSMENT FOR LEAD IN PAINT AND SETTLED DUST

NATIONAL GUARD ARMORY
995 THUNDERBIRD ROAD
ALVA, OKLAHOMA 73717



ENERCON Project Number ENMISC2481
October 20, 2011

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



Excellence—Every project. Every day.

Enercon Services, Inc.
6525 North Meridian Avenue, Suite 400
Oklahoma City, Oklahoma 73116
Phone: (405) 722-7693
Fax: (405) 722-7694

Prepared By :

A handwritten signature in blue ink that reads "Marshall L. Branscum".

Marshall L. Branscum
Environmental Scientist
LBP Inspector, OKINSR13415

Reviewed By :

A handwritten signature in black ink that reads "Emmett W. Muenker".

Emmett W. Muenker
Senior Project Manager
LBP Risk Assessor, OKRASR11260

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Appendix B	Photographic Record of Representative Building Components with LBP
Appendix C	Dust Wipe Laboratory Report and Chain of Custody
Appendix D	XRF Data Spreadsheets
Appendix E	XRF Performance Characteristics Sheets
Appendix F	Lead-Based Paint Inspector, Risk Assessor, and Firm Licenses

EXECUTIVE SUMMARY

Enercon Services, Inc. (ENERCON) has completed a Survey and Assessment for Lead in Paint and Settled Dust (Survey) at the Alva National Guard Armory, 995 Thunderbird Road, Alva, Oklahoma. The survey was conducted on October 4, 2011 by Mr. Marshall Branscum and Mr. Richard Belcher, both of ENERCON.

The Survey and Assessment included non-destructive sampling of representative paint surfaces in the armory using an X-ray Fluorescence (XRF) Analyzer and dust wipe samples. Dust wipe samples were collected from the floor in each room using EPA/HUD wipe sampling protocols.

The results of XRF sampling indicated the following:

- Interior: The yellow painted stair runners in Room 10 (IFR) were coated with LBP.
- Exterior: No Lead-Based Paint present.

The results of wipe samples collected from the floors revealed:

- Lead contamination above 40 $\mu\text{g}/\text{ft}^2$ was present on the floor in Rooms 8, 10 and 25.

1.0 INTRODUCTION

Enercon Services, Inc. (ENERCON) has completed a Survey and Assessment for Lead in Paint and Settled Dust (Survey) at the Alva National Guard Armory, 995 Thunderbird Road, Alva, Oklahoma. The inspection was conducted on October 4, 2011 by Mr. Marshall Branscum and Mr. Richard Belcher, both of ENERCON.

The Alva National Guard Armory was constructed on a concrete slab-on-grade foundation with flat roofs covered with tar and gravel. The walls were constructed of brick and concrete block. The building contained a large drill room, offices, a kitchen area, and an indoor firing range that was located south of the drill room. Layouts are included in Appendix A.

The Survey was performed to identify the locations, condition and estimated quantities of Lead-Based Paint (LBP) and lead-laden settled dust in the Armory.

2.0 METHODOLOGY

The survey included visual observations, photographic documentation (Appendix B), dust wipe samples (Appendix C), and x-ray fluorescence (XRF) measurements of suspect Lead-Based Paint (LBP) (Appendix D). A visual inspection was performed in all rooms and the exterior of the building. The purpose of the visual inspection was to identify similarly painted surfaces so that representative XRF measurements could be made. These surfaces were determined by differentiating them by color, component and room. XRF measurements were then obtained for each building component type in each room and on each side of the building exterior. The criterion used for determination of the presence of LBP on painted surfaces was the EPA threshold for XRF readings as equal to or greater than 1.0 milligram per square centimeter (mg/cm^2).

One dust wipe sample was collected in each room except for the drill room, where three samples were collected, and the indoor firing range (IFR), where four samples were collected. The criterion used for dust wipe samples based upon sampling according to the EPA/HUD protocols for wipe samples and laboratory analysis where the lead concentration is equal to or greater than 40.0 micrograms per square foot ($\mu\text{g}/\text{ft}^2$).

The presence of LBP was determined using a Niton Model XLp-703A XRF (X-Ray Fluorescence) Analyzer, Serial Number 24295. At power-up, the unit performed routine internal calibration and operational checks. It was then checked for reading accuracy using a 1.0 mg/cm^2 standard paint chip supplied by the manufacturer by a series of three measurements of the standard paint chip. This calibration was done immediately prior to use, at least every four hours of operation and prior to shut down each day of use. The Performance Characteristic Sheet for the XLp-703A is provided in Appendix E of this

report. The location, component, substrate, color and other relevant information regarding the sample was entered into the XRF using the touchpad on the instrument as each measurement was made. Upon completion of the measurements, the data was downloaded into an Excel spreadsheet using software provided by the analyzer manufacturer. The Excel spreadsheet is provided in Appendix D of this report. Some corrections of the downloaded data were made due to obvious keypad entry errors. Due to the sensitivity of the proximity sensor on the XRF, a few null readings resulted, particularly when attempting to sample rough or uneven painted surfaces. These readings were not deleted from the spreadsheet in order to maintain the continuity of the sample numbers.

Each room was given an arbitrary number on a building floor plan. The sides of the rooms and the building exterior were designated by letters with street address side labeled as "Side A," and the remaining sides denoted as B, C and D following a clockwise pattern.

The actual number of XRF measurements completed was dependent upon the different painted components and colors of paint present. The XRF instrument measures all layers of paint present at the sampling location. Therefore, the XRF instrument returns a positive reading even through layers of non-lead paint that have been applied when a layer of LBP exists on the component.

The condition of painted surfaces was recorded during the survey and is discussed in the Results Section below.

3.0 RESULTS

3.1 Lead-Based Paint

A total of 175 XRF samples were collected, including calibration and null readings. Figure 1 in Appendix A shows the location of the components with LBP. Table 1 shows the location and size of doors/door frames that tested positive for LBP - none were present. Table 2 lists the windows/window frames that tested positive for LBP - none were present. Table 3 provides a summary of building components with LBP as identified by XRF sampling along with the location and size - only one component was present. The location is shown on the layout in Appendix A. The painted surfaces sampled during the survey ranged from intact to poor condition. Representative photographs were taken of the armory and are provided in Appendix B. The component where positive readings (1.0 mg/cm^2 or greater) were obtained is shown in Photo #4.

The results of XRF sampling indicated the following building components were coated with LBP:

Interior Components:

- Stair Runners, Room 10

Exterior Components:

- None Present

**Table 1 – Lead-Based Paint Locations (XRF)
Doors and Door Frames**

Identified Lead-Based Paint (Color/Description)	Lead Content (mg/cm ²)	Location	Size of Door/Frame
No doors or door frames were coated with LBP.			

**Table 2 – Lead-Based Paint Locations (XRF)
Windows and Window Frames**

Identified Lead-Based Paint (Color/Description)	Lead Content (mg/cm ²)	Location	Size of Windows
No windows or window frames were coated with LBP.			

**Table 3 –Lead-Based Paint Locations (XRF)
Other Surfaces/Components**

Identified Lead-Based Paint (Color)	Lead Content (mg/cm ²)	Location	Component and Substrate
Yellow	1.4	Room 10, Side C	Stair Runner (Metal)
Yellow	2.6	Room 10, Side C	Stair Runner (Metal)

3.2 Dust Wipe Samples

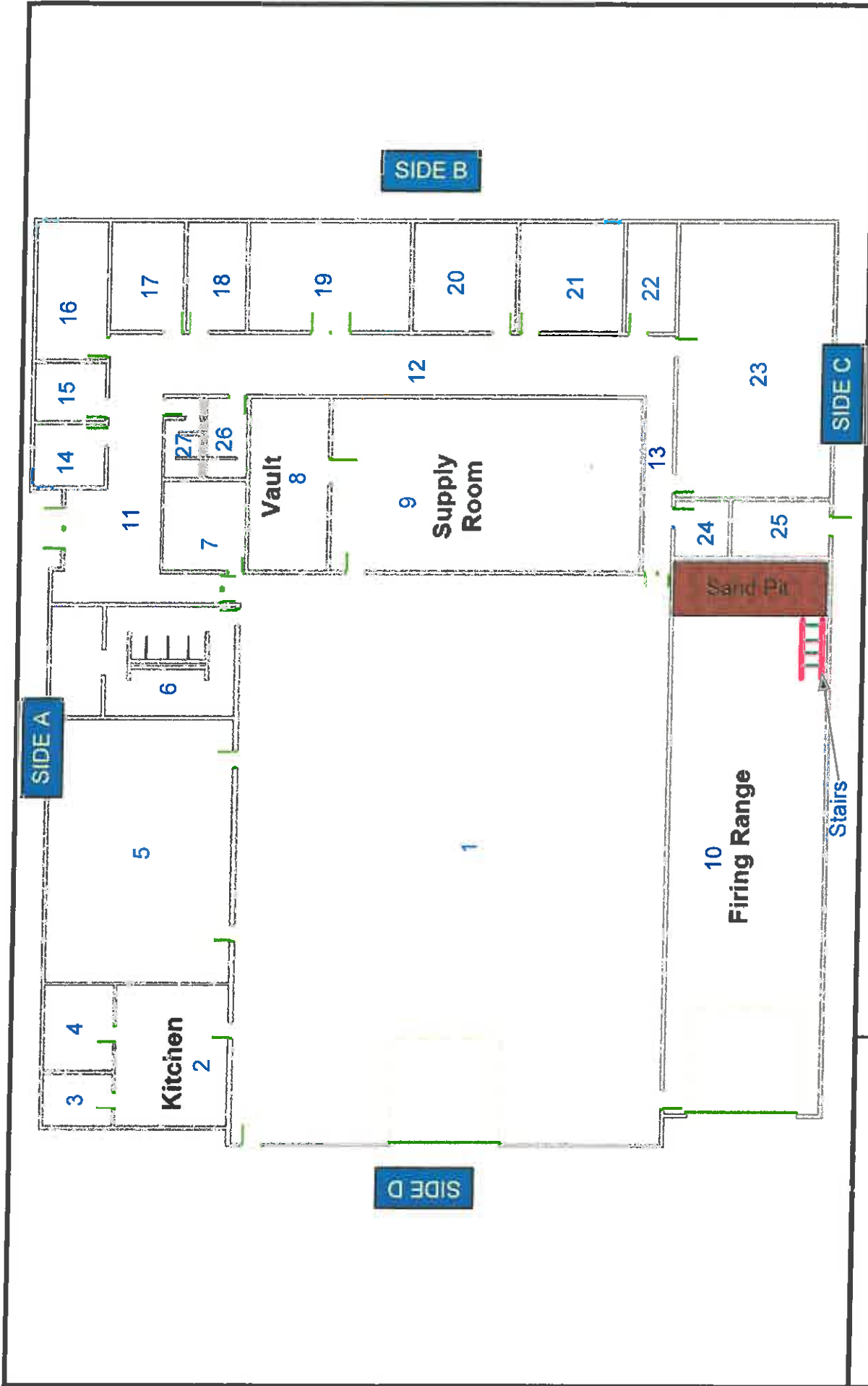
Dust wipe samples were collected following the EPA/HUD protocols. A template measuring one square foot was used to provide a known sampling area. One dust wipe sample was collected in each room except for the drill room, where three samples were collected and the IFR where four samples were collected. A total of 32 wipe samples were collected. Laboratory results from the dust wipe samples are presented in Appendix C. Concentrations of 40.0 µg/ft² or greater are considered contaminated, in accordance with the HUD/EPA Guidelines. Three rooms had lead dust contamination above the

threshold as determined by laboratory analysis. These are listed in Table 4 with their locations shown on Figure 2 in Appendix A.

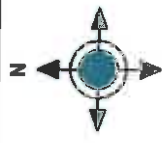
Table 4 – Positive Dust Wipe Locations

Sample Number	Lead Content (µg/ft²)	Location	Square Footage of Positive Location
AA-08	46.1	Room 8	270 SF
AA-10A	587	Room 10	1,800 SF
AA-10B	1,120	Room 10	
AA-10C	1,000	Room 10	
AA-10D	3,680	Room 10	∨
AA-25	141	Room 25	105 SF

APPENDIX A



Legend:
 Stair Runners - LBP

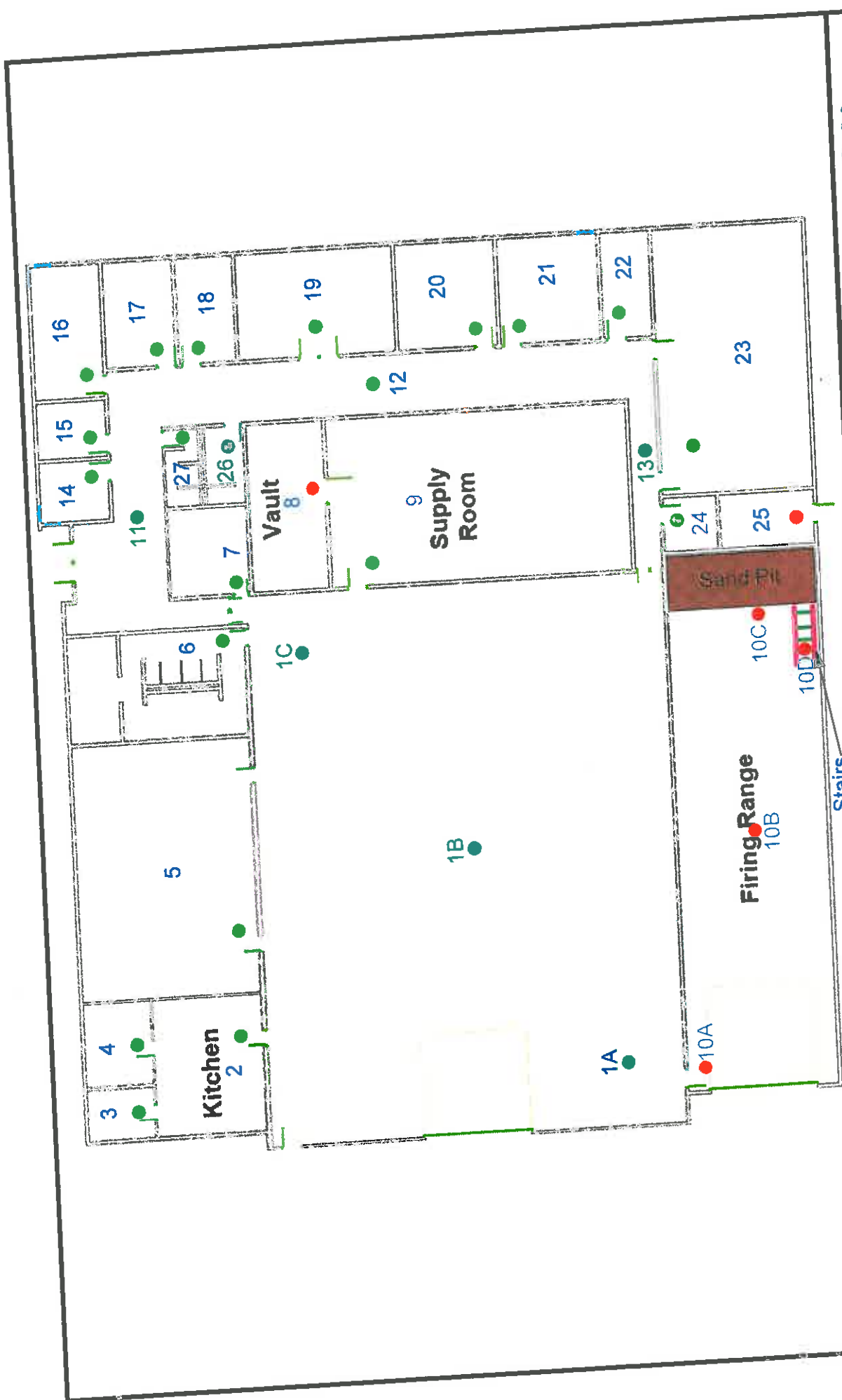


Oklahoma Department of Environmental Quality
 ALVA ARMORY
 995 Thunderbird Road
 Alva, OK

ENERCON

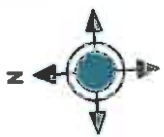
Figure 1
 LEAD-BASED PAINT LOCATIONS

Project No: ENMISC2481



ENERCON

Figure 2
LEAD DUST WIPE SAMPLE LOCATIONS
 Project No: ENMISC2481



Legend:
 ● Dust Wipe Sample Location, Positive, > 40 ug / ft²
 ● Dust Wipe Sample Location, Negative, < 40 ug / ft²

Oklahoma Department of Environmental Quality
ALVA ARMORY
 995 Thunderbird Road
 Alva, OK

APPENDIX B

APPENDIX B - PHOTOGRAPHIC RECORD

Project No: ENMISC2481

Project Name: Alva National Guard Armory



Photo #1: Alva National Guard Armory.



Photo #2: View of Drill Floor Room.



Photo #3: Indoor Firing Range.



Photo # 4: Yellow painted stair runners in IFR – LBP.



Photo # 5: Sand pit located in the IFR.



Photo # 6: View of a typical office space.

APPENDIX C



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

Environmental Chemistry Analysis Report

QuantEM Set ID: 200467
Date Received: 10/05/11
Received By: Barbara Holder
Date Sampled:
Time Sampled:
Analyst:
Date of Report: 10/6/2011

Client: Enercon Services, Inc.
 6525 N. Meridian, Suite 400
 Oklahoma City, OK 73116

Acct. No.: A845

Project: Alva Armory
Location: 995 Thunderbird Rd., Alva, OK

Project No.: N/A

AIHA ID: 101352

QuantEM ID	Client ID	Matrix	Parameter	Results	Reporting Limits	Units	Date/Time Analyzed	Method
001	AA-01A	Wipe	Lead	32.3	16	ug/sq. Ft.	10/06/11 13:00	W EPA 7420 (1)
002	AA-01B	Wipe	Lead	<16.0	16	ug/sq. Ft.	10/06/11 13:00	W EPA 7420 (1)
003	AA-01C	Wipe	Lead	16.7	16	ug/sq. Ft.	10/06/11 13:00	W EPA 7420 (1)
004	AA-02	Wipe	Lead	23.2	16	ug/sq. Ft.	10/06/11 13:00	W EPA 7420 (1)
005	AA-03	Wipe	Lead	<16.0	16	ug/sq. Ft.	10/06/11 13:00	W EPA 7420 (1)
006	AA-04	Wipe	Lead	<16.0	16	ug/sq. Ft.	10/06/11 13:00	W EPA 7420 (1)
007	AA-05	Wipe	Lead	<16.0	16	ug/sq. Ft.	10/06/11 13:00	W EPA 7420 (1)
008	AA-06	Wipe	Lead	<16.0	16	ug/sq. Ft.	10/06/11 13:00	W EPA 7420 (1)
009	AA-07	Wipe	Lead	16.6	16	ug/sq. Ft.	10/06/11 13:00	W EPA 7420 (1)
010	AA-08	Wipe	Lead	46.1	16	ug/sq. Ft.	10/06/11 13:00	W EPA 7420 (1)
011	AA-09	Wipe	Lead	21.7	16	ug/sq. Ft.	10/06/11 13:00	W EPA 7420 (1)
012	AA-10A	Wipe	Lead	587	16	ug/sq. Ft.	10/06/11 13:00	W EPA 7420 (1)
013	AA-11	Wipe	Lead	26.9	16	ug/sq. Ft.	10/06/11 13:00	W EPA 7420 (1)
014	AA-12	Wipe	Lead	<16.0	16	ug/sq. Ft.	10/06/11 13:00	W EPA 7420 (1)
015	AA-13	Wipe	Lead	<16.0	16	ug/sq. Ft.	10/06/11 13:00	W EPA 7420 (1)
016	AA-10B	Wipe	Lead	1,120	16	ug/sq. Ft.	10/06/11 13:00	W EPA 7420 (1)
017	AA-10C	Wipe	Lead	1,000	16	ug/sq. Ft.	10/06/11 13:00	W EPA 7420 (1)

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.

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 7420 (1) = EPA 600/R-93/200 Preperation Modified. EPA 7420 Analysis Modified

EPA Method 7082 (2) = EPA 600/R-93/200 Preperation 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: 200467
Date Received: 10/05/11
Received By: Barbara Holder
Date Sampled:
Time Sampled:
Analyst:
Date of Report: 10/6/2011

Client: Enercon Services, Inc.
 6525 N. Meridian, Suite 400
 Oklahoma City, OK 73116

Acct. No.: A845

Project: Alva Armory
Location: 995 Thunderbird Rd., Alva, OK
Project No.: N/A

AIHA ID: 101352

QuantEM ID	Client ID	Matrix	Parameter	Results	Reporting Limits	Units	Date/Time Analyzed	Method
018	AA-10D	Wipe	Lead	3,680	16	ug/sq. Ft.	10/06/11 13:00	W EPA 7420 (1)
019	AA-14	Wipe	Lead	16.2	16	ug/sq. Ft.	10/06/11 13:00	W EPA 7420 (1)
020	AA-15	Wipe	Lead	<16.0	16	ug/sq. Ft.	10/06/11 13:00	W EPA 7420 (1)
021	AA-16	Wipe	Lead	23.1	16	ug/sq. Ft.	10/06/11 13:00	W EPA 7420 (1)
022	AA-17	Wipe	Lead	<16.0	16	ug/sq. Ft.	10/06/11 13:00	W EPA 7420 (1)
023	AA-18	Wipe	Lead	<16.0	16	ug/sq. Ft.	10/06/11 13:00	W EPA 7420 (1)
024	AA-19	Wipe	Lead	35.9	16	ug/sq. Ft.	10/06/11 13:00	W EPA 7420 (1)
025	AA-20	Wipe	Lead	<16.0	16	ug/sq. Ft.	10/06/11 13:00	W EPA 7420 (1)
026	AA-21	Wipe	Lead	<16.0	16	ug/sq. Ft.	10/06/11 13:00	W EPA 7420 (1)
027	AA-22	Wipe	Lead	33.4	16	ug/sq. Ft.	10/06/11 13:00	W EPA 7420 (1)
028	AA-23	Wipe	Lead	<16.0	16	ug/sq. Ft.	10/06/11 13:00	W EPA 7420 (1)
029	AA-24	Wipe	Lead	<16.0	16	ug/sq. Ft.	10/06/11 13:00	W EPA 7420 (1)
030	AA-25	Wipe	Lead	141	16	ug/sq. Ft.	10/06/11 13:00	W EPA 7420 (1)
031	AA-26	Wipe	Lead	<16.0	16	ug/sq. Ft.	10/06/11 13:00	W EPA 7420 (1)
032	AA-27	Wipe	Lead	<16.0	16	ug/sq. Ft.	10/06/11 13:00	W EPA 7420 (1)

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.

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 7420 (1) = EPA 600/R-93/200 Preperation Modified. EPA 7420 Analysis Modified

EPA Method 7082 (2) = EPA 600/R-93/200 Preperation Modified. EPA 7082 Analysis Modified

Supplemental Report QAQC Results

QA ID: 9261
Test: Lead

Date: 10/6/2011
Matrix: Wipe

Lab Number: 200467
Approved By: Rebecca Sparks
Date Approved: 10/6/2011

Notes:

Blank Data:

Type of Blank	Blank Value
FCB	0
ICB	0
Matrix Blank	0

Standards Data:

Standard	Low Limit	Obtained	High Limit
CCV	4.5	5	5.5
FCV	4.5	5	5.5
ICV	0.8	1.1	1.2
RLVS	0.256	0.337	0.384

Duplicate Data:

Recovery Data:

Sample Number	Result	Spike Level	Result + Spike	% Recovery	Dup. Result + Spike	% Dup. Recovery	% Spike RPD
MS-W3	0.000	5.384	5.275	98.0	5.338	99.1	1.2
MS-W2	0.000	5.481	5.603	102.2	5.084	92.8	9.7
MS-W2	0.000	5.460	5.380	98.5	5.084	93.1	5.7
MS-W1	0.000	5.470	5.286	96.6	5.200	95.1	1.6
MS-W1	0.000	5.481	5.244	95.7	5.200	94.9	0.8

Authorized Signature: _____

Rebecca Sparks
Rebecca Sparks, Analyst



Lead Chain-of-Custody

2033 Heritage Park Drive, Oklahoma City, OK 73120-7502
 (800) 822-4660 (405) 755-7272 Fax: (405) 755-2056
 www.quantem.com

This Box for Lab Use Only

Lab No. 260407
 Account [Signature] Request

Company Name: Emerson Services Project Name: Alva Armony
 Project Location: 995 Thunderbird Rd., Alva, OK Project Number: _____
 Acct #: _____

Sample Number	Sample Description	Volume of Air	Sample Matrix	Analysis	Units Requested	Sample Matrix Codes
1	AA-01A					
2	-01B	144	Floor	X	mg/kg	A - Soil
3	-01K					B - Paint Chips
4	-02					C - Surface / Dust Wipes
5	-03					D - Bulk Miscellaneous
6	-04					E - Air Casette
7	-05					F - Other (SPECIFY)
8	-06					
9	-07					
10	-08					
11	-09					
12	-10A					
13	-11					
14	-12					
15	-13					

LEGAL DOCUMENT
 Please Print Legibly

TURNAROUND TIME

Same Day
 24 Hour
 3-Day
 5-day

CONTACT INFORMATION

Name: Marsha H
Blanscum
 Phone: 722-7693
 Report Results Via (CHOOSE ONE):
 FAX
 Quantem Website
 E-Mail

Markell P. Brunson 10-5-11/1354 10-5-16 10-4-11 MUBRB
 Date Time Collected Date Time Analyzed Sampled For

Saturday FedEx Shipping - CALL TO SCHEDULE
 Use this address for Saturday FedEx only: 4220 N. Santa Fe Ave., Oklahoma City, OK 73105-8517
 Mark Package 'HOLD FOR SATURDAY PICKUP'



Lead Chain-of-Custody
 2033 Heritage Park Drive, Oklahoma City, OK 73120-7502
 (800) 822-1660 (405) 755-7272 Fax (405) 755-2058
 www.quantem.com

This box for Lab Use Only

Lab No. 200467

Project

Company Name: EverCom

Project Name: Alva Army

Project Location:

Project Number:

Sample Number	Sample Description	Volume of Area	Sample Matrix	Analyte	Units Requested	Sample Matrix Codes
AA-10B	Floor	141sq ft		Pb	mg/kg	A - Soil
-10c					mg/kg	B - Paint Chips
-10D					mg/kg	C - Surface / Duct Wipes
-14					mg/kg	D - Bulk Miscellaneous
-15					mg/kg	E - Air Cassette
-16					mg/kg	F - Other (SPECIFY)
-17					mg/kg	
-18					mg/kg	
-19					mg/kg	
-20					mg/kg	
-21					mg/kg	
-22					mg/kg	
-23					mg/kg	
-24					mg/kg	
-25					mg/kg	

TURNAROUND TIME
Same Day
<input checked="" type="checkbox"/> 24 Hour
3-Day
5-day

CONTACT INFORMATION
Name: <u>Marsha H. Barsuk</u>
Phone:
Report Results Via (CHOOSE ONE):
<input checked="" type="checkbox"/> FAX
<input type="checkbox"/> Quantem Website
E-Mail:

Sampled By	Date/Time	Quik-Saver
<u>Marsha H. Barsuk</u>	<u>10-5-11 10:51</u>	<u>10-4</u>
		<u>MLB</u>

Saturday FedEx Shipping - CALL TO SCHEDULE
 Use this address for Saturday FedEx only: 4220 N. Santa Fe Ave., Oklahoma City, OK 73105-6517
 Mark Package 'HOLD FOR SATURDAY PICKUP'

APPENDIX D

Reading No	Time	Component	Substrate	Side	Condition	Color	Site	Room	Results	PbC	PbL	PbK
1	10/4/2011 13:03									2.53	0.47	0.02
2	10/4/2011 13:06						CALIBRATE		Positive	1.1	1.1	< LOD
3	10/4/2011 13:07						CALIBRATE		Positive	1	1	0.5
4	10/4/2011 13:08						CALIBRATE		Positive	1	1	0.5
5	10/4/2011 13:41	CANOPY	PLASTER	A	FAIR	BEIGE	ALVA ARMORY	EXTERIOR	Negative	< LOD	< LOD	1.1
6	10/4/2011 13:41	LINTEL	METAL	A	POOR	RED	ALVA ARMORY	EXTERIOR	Negative	< LOD	< LOD	< LOD
7	10/4/2011 13:47	LINTEL	METAL	A	FAIR	BROWN	ALVA ARMORY	EXTERIOR	Negative	< LOD	< LOD	< LOD
8	10/4/2011 13:49	DOOR FRAME	METAL	C	POOR	YELLOW	ALVA ARMORY	EXTERIOR	Negative	< LOD	< LOD	< LOD
9	10/4/2011 13:51	DOOR	METAL	C	POOR	YELLOW	ALVA ARMORY	EXTERIOR	Negative	< LOD	< LOD	< LOD
10	10/4/2011 13:52	DOOR ROLL UP	METAL	D	FAIR	SILVER	ALVA ARMORY	EXTERIOR	Negative	< LOD	< LOD	< LOD
11	10/4/2011 13:53	DOOR ROLL UP FRAME	METAL	D	FAIR	RED	ALVA ARMORY	EXTERIOR	Negative	< LOD	< LOD	< LOD
12	10/4/2011 13:54	EDGE PROTECTOR	METAL	D	FAIR	RED	ALVA ARMORY	EXTERIOR	Negative	< LOD	< LOD	< LOD
13	10/4/2011 13:54	EDGE PROTECTOR	METAL	D	FAIR	RED	ALVA ARMORY	EXTERIOR	Negative	< LOD	< LOD	< LOD
14	10/4/2011 13:55	EDGE PROTECTOR	METAL	D	FAIR	RED	ALVA ARMORY	EXTERIOR	Negative	< LOD	< LOD	< LOD
15	10/4/2011 13:55	EDGE PROTECTOR	METAL	D	FAIR	RED	ALVA ARMORY	EXTERIOR	Negative	< LOD	< LOD	< LOD
16	10/4/2011 13:56	BOLLARD	METAL	D	POOR	RED	ALVA ARMORY	EXTERIOR	Negative	< LOD	< LOD	< LOD
17	10/4/2011 13:56	BOLLARD	METAL	D	POOR	RED	ALVA ARMORY	EXTERIOR	Negative	< LOD	< LOD	< LOD
18	10/4/2011 13:56	BOLLARD	METAL	D	POOR	RED	ALVA ARMORY	EXTERIOR	Negative	< LOD	< LOD	< LOD
19	10/4/2011 13:56	BOLLARD	METAL	D	POOR	RED	ALVA ARMORY	EXTERIOR	Negative	< LOD	< LOD	< LOD
20	10/4/2011 14:03	DOOR FRAME	METAL	D	POOR	RED	ALVA ARMORY	EXTERIOR	Negative	< LOD	< LOD	< LOD
21	10/4/2011 14:03	DOOR FRAME	METAL	D	POOR	RED	ALVA ARMORY	EXTERIOR	Negative	< LOD	< LOD	< LOD
22	10/4/2011 14:03	DOOR	METAL	D	POOR	RED	ALVA ARMORY	EXTERIOR	Negative	< LOD	< LOD	< LOD
23	10/4/2011 14:03	DOOR	METAL	D	POOR	YELLOW	ALVA ARMORY	EXTERIOR	Negative	< LOD	< LOD	< LOD
24	10/4/2011 14:08	ROOF FLASHING	METAL	D	POOR	YELLOW	ALVA ARMORY	EXTERIOR	Negative	< LOD	< LOD	< LOD
25	10/4/2011 14:09	ROOF FLASHING	METAL	D	POOR	YELLOW	ALVA ARMORY	EXTERIOR	Negative	< LOD	< LOD	< LOD
26	10/4/2011 14:09	ROOF FLASHING	METAL	A	POOR	YELLOW	ALVA ARMORY	EXTERIOR	Negative	< LOD	< LOD	< LOD
27	10/4/2011 14:11	LINTEL WINDOW	METAL	B	POOR	RED	ALVA ARMORY	EXTERIOR	Negative	< LOD	< LOD	< LOD
28	10/4/2011 14:11	LINTEL WINDOW	METAL	B	POOR	RED	ALVA ARMORY	EXTERIOR	Negative	< LOD	< LOD	< LOD
29	10/4/2011 14:24	WALL	CONCRETE BLOCK	A	FAIR	BROWN	ALVA ARMORY	ROOM 1	Null	< LOD	< LOD	1.3
30	10/4/2011 14:24	WALL	CONCRETE BLOCK	A	FAIR	BROWN	ALVA ARMORY	ROOM 1	Negative	< LOD	< LOD	1.1
31	10/4/2011 14:25	WALL	CONCRETE BLOCK	B	INTACT	BEIGE	ALVA ARMORY	ROOM 1	Negative	< LOD	< LOD	< LOD
32	10/4/2011 14:26	WALL	CONCRETE BLOCK	C	INTACT	BEIGE	ALVA ARMORY	ROOM 1	Negative	< LOD	< LOD	< LOD
33	10/4/2011 14:26	WALL	CONCRETE BLOCK	C	INTACT	BROWN	ALVA ARMORY	ROOM 1	Negative	< LOD	< LOD	< LOD
34	10/4/2011 14:27	WALL	CONCRETE BLOCK	D	INTACT	BROWN	ALVA ARMORY	ROOM 1	Null	< LOD	< LOD	1.2
35	10/4/2011 14:27	WALL	CONCRETE BLOCK	D	INTACT	BROWN	ALVA ARMORY	ROOM 1	Negative	< LOD	< LOD	1.2
36	10/4/2011 14:28	WALL	CONCRETE BLOCK	D	INTACT	BEIGE	ALVA ARMORY	ROOM 1	Negative	< LOD	< LOD	1.1
37	10/4/2011 14:33	DOOR FRAME	METAL	D	INTACT	BROWN	ALVA ARMORY	ROOM 1	Negative	< LOD	< LOD	< LOD
38	10/4/2011 14:33	DOOR FRAME	METAL	A	FAIR	BROWN	ALVA ARMORY	ROOM 1	Negative	< LOD	< LOD	< LOD
39	10/4/2011 14:34	DOOR LINTEL	METAL	A	INTACT	BEIGE	ALVA ARMORY	ROOM 1	Negative	< LOD	< LOD	< LOD
40	10/4/2011 14:34	DOOR LINTEL	METAL	B	INTACT	BEIGE	ALVA ARMORY	ROOM 1	Negative	< LOD	< LOD	< LOD
41	10/4/2011 14:35	DOOR FRAME	METAL	B	INTACT	BEIGE	ALVA ARMORY	ROOM 1	Negative	< LOD	< LOD	< LOD
42	10/4/2011 14:36	FLOOR COURT STRIPE	CONCRETE	B	POOR	WHITE	ALVA ARMORY	ROOM 1	Negative	0.18	< LOD	< LOD
43	10/4/2011 14:38	CEILING BAR JOIST	METAL	INTACT	WHITE	WHITE	ALVA ARMORY	ROOM 1	Negative	< LOD	< LOD	1
44	10/4/2011 14:38	CEILING BAR JOIST	METAL	INTACT	WHITE	WHITE	ALVA ARMORY	ROOM 1	Negative	< LOD	< LOD	< LOD
45	10/4/2011 14:43	CEILING	PLASTER	INTACT	WHITE	WHITE	ALVA ARMORY	ROOM 2	Negative	< LOD	< LOD	1.1

Reading No	Time	Component	Substrate	Side	Condition	Color	Site	Room	Results	PbC	PbL	PbK
46	10/4/2011 14:44	DOOR	WOOD	C	POOR	STAINED	ALVA ARMORY	ROOM 2	Negative	< LOD	< LOD	< LOD
47	10/4/2011 14:44	DOOR FRAME	METAL	C	POOR	BROWN	ALVA ARMORY	ROOM 2	Negative	< LOD	< LOD	< LOD
48	10/4/2011 14:44	DOOR FRAME	METAL	D	POOR	BROWN	ALVA ARMORY	ROOM 2	Negative	< LOD	< LOD	< LOD
49	10/4/2011 14:45	DOOR	METAL	D	POOR	BEIGE	ALVA ARMORY	ROOM 2	Negative	< LOD	< LOD	< LOD
50	10/4/2011 14:46	WALL	CONCRETE BLOCK	A	INTACT	BEIGE	ALVA ARMORY	ROOM 2	Negative	< LOD	< LOD	< LOD
51	10/4/2011 14:48	WALL	CONCRETE BLOCK	B	INTACT	BEIGE	ALVA ARMORY	ROOM 2	Negative	< LOD	< LOD	< LOD
52	10/4/2011 14:49	WALL	CONCRETE BLOCK	C	INTACT	BEIGE	ALVA ARMORY	ROOM 2	Negative	< LOD	< LOD	< LOD
53	10/4/2011 14:49	WALL	CONCRETE BLOCK	D	INTACT	BEIGE	ALVA ARMORY	ROOM 2	Negative	< LOD	< LOD	1.1
54	10/4/2011 14:50	DOOR FRAME	METAL	A	INTACT	BROWN	ALVA ARMORY	ROOM 2	Negative	< LOD	< LOD	0.8
55	10/4/2011 14:52	DOOR FRAME	METAL	A	INTACT	BROWN	ALVA ARMORY	ROOM 2	Negative	< LOD	< LOD	< LOD
56	10/4/2011 14:52	DOOR FRAME	METAL	C	INTACT	BROWN	ALVA ARMORY	ROOM 5	Negative	< LOD	< LOD	< LOD
57	10/4/2011 14:53	DOOR FRAME	METAL	C	INTACT	BROWN	ALVA ARMORY	ROOM 5	Negative	< LOD	< LOD	< LOD
58	10/4/2011 14:53	CEILING BAR JOIST	METAL	B	INTACT	BROWN	ALVA ARMORY	ROOM 5	Negative	< LOD	< LOD	< LOD
59	10/4/2011 14:54	CEILING	METAL	INTACT	WHITE	WHITE	ALVA ARMORY	ROOM 5	Negative	< LOD	< LOD	< LOD
60	10/4/2011 14:55	WALL	METAL CORRUGATED	INTACT	WHITE	WHITE	ALVA ARMORY	ROOM 5	Negative	< LOD	< LOD	< LOD
61	10/4/2011 14:55	WALL	CONCRETE BLOCK	A	INTACT	BEIGE	ALVA ARMORY	ROOM 5	Negative	< LOD	< LOD	< LOD
62	10/4/2011 14:56	WALL	CONCRETE BLOCK	C	INTACT	BEIGE	ALVA ARMORY	ROOM 5	Negative	< LOD	< LOD	< LOD
63	10/4/2011 14:56	WALL	CONCRETE BLOCK	D	INTACT	BEIGE	ALVA ARMORY	ROOM 5	Negative	< LOD	< LOD	< LOD
64	10/4/2011 14:59	WALL	CONCRETE BLOCK	A	INTACT	BEIGE	ALVA ARMORY	ROOM 5	Negative	< LOD	< LOD	< LOD
65	10/4/2011 15:02	WALL	CONCRETE BLOCK	B	INTACT	BEIGE	ALVA ARMORY	ROOM 6	Negative	< LOD	< LOD	< LOD
66	10/4/2011 15:02	WALL	CONCRETE BLOCK	C	INTACT	BEIGE	ALVA ARMORY	ROOM 6	Negative	< LOD	< LOD	1.1
67	10/4/2011 15:03	WALL	CONCRETE BLOCK	C	INTACT	BEIGE	ALVA ARMORY	ROOM 6	Null	< LOD	< LOD	< LOD
68	10/4/2011 15:03	STALL WALL	CONCRETE BLOCK	D	INTACT	BEIGE	ALVA ARMORY	ROOM 6	Negative	< LOD	< LOD	1.2
69	10/4/2011 15:04	STALL WALL	METAL	B	INTACT	YELLOW	ALVA ARMORY	ROOM 6	Negative	< LOD	< LOD	< LOD
70	10/4/2011 15:04	DOOR FRAME	METAL	B	INTACT	YELLOW	ALVA ARMORY	ROOM 6	Negative	< LOD	< LOD	< LOD
71	10/4/2011 15:05	DOOR LINTEL	METAL	C	INTACT	BROWN	ALVA ARMORY	ROOM 6	Negative	< LOD	< LOD	< LOD
72	10/4/2011 15:06	DOOR FRAME	METAL	C	INTACT	BEIGE	ALVA ARMORY	ROOM 6	Negative	< LOD	< LOD	< LOD
73	10/4/2011 15:07	BAR JOIST CEILING	METAL	D	INTACT	BROWN	ALVA ARMORY	ROOM 6	Negative	< LOD	< LOD	< LOD
74	10/4/2011 15:08	WALL	METAL	INTACT	RED	RED	ALVA ARMORY	ROOM 7	Negative	< LOD	< LOD	< LOD
75	10/4/2011 15:09	WALL	CONCRETE BLOCK	C	INTACT	BEIGE	ALVA ARMORY	ROOM 7	Negative	< LOD	< LOD	< LOD
76	10/4/2011 15:13	WALL	CONCRETE BLOCK	B	INTACT	BEIGE	ALVA ARMORY	ROOM 7	Negative	< LOD	< LOD	< LOD
77	10/4/2011 15:14	WALL	CONCRETE	C	INTACT	BEIGE	ALVA ARMORY	ROOM 7	Negative	< LOD	< LOD	< LOD
78	10/4/2011 15:14	WALL	CONCRETE	B	INTACT	BEIGE	ALVA ARMORY	ROOM 8	Negative	< LOD	< LOD	1.1
79	10/4/2011 15:15	DOOR	CONCRETE	D	INTACT	BEIGE	ALVA ARMORY	ROOM 8	Negative	< LOD	< LOD	1.2
80	10/4/2011 15:15	DOOR FRAME	METAL	C	INTACT	GRAY	ALVA ARMORY	ROOM 8	Negative	< LOD	< LOD	< LOD
81	10/4/2011 15:16	BAR JOIST CEILING	METAL	C	INTACT	GRAY	ALVA ARMORY	ROOM 8	Negative	< LOD	< LOD	< LOD
82	10/4/2011 15:16	CEILING	METAL	INTACT	RED	RED	ALVA ARMORY	ROOM 8	Negative	< LOD	< LOD	< LOD
83	10/4/2011 15:17	DOOR FRAME	METAL	INTACT	GRAY	GRAY	ALVA ARMORY	ROOM 9	Negative	< LOD	< LOD	< LOD
84	10/4/2011 15:17	DOOR FRAME	METAL	D	FAIR	BROWN	ALVA ARMORY	ROOM 9	Negative	< LOD	< LOD	< LOD
85	10/4/2011 15:18	DOOR	METAL	D	FAIR	BROWN	ALVA ARMORY	ROOM 9	Negative	< LOD	< LOD	< LOD
86	10/4/2011 15:18	DOOR	METAL	D	POOR	BEIGE	ALVA ARMORY	ROOM 9	Negative	< LOD	< LOD	< LOD
87	10/4/2011 15:19	WALL	METAL	D	FAIR	BEIGE	ALVA ARMORY	ROOM 9	Negative	< LOD	< LOD	< LOD
88	10/4/2011 15:19	WALL	CONCRETE BLOCK	D	FAIR	BEIGE	ALVA ARMORY	ROOM 9	Negative	< LOD	< LOD	1
89	10/4/2011 15:31	BAR JOIST	METAL	A	FAIR	BEIGE	ALVA ARMORY	ROOM 9	Negative	< LOD	< LOD	< LOD
90	10/4/2011 15:32	DEFLECTOR	METAL	C	INTACT	WHITE	ALVA ARMORY	ROOM 10	Negative	< LOD	< LOD	< LOD
					INTACT	BROWN	ALVA ARMORY	ROOM 10	Negative	< LOD	< LOD	< LOD

Reading No	Time	Component	Substrate	Side	Condition	Color	Site	Room	Results	PbC	PbL	PbK
91	10/4/2011 15:33	RUNNER STAIRS	METAL	C	POOR	YELLOW	ALVA ARMORY	ROOM 10	Positive	1.4	1.4	< LOD
92	10/4/2011 15:33	RUNNER STAIRS	METAL	C	FOUR	YELLOW	ALVA ARMORY	ROOM 10	Positive	2.6	2.6	< LOD
93	10/4/2011 15:36	DEFLECTOR	METAL	B	POOR	RED	ALVA ARMORY	ROOM 10	Negative	< LOD	< LOD	< LOD
94	10/4/2011 15:37	WALL	CONCRETE BLOCK	B	INTACT	GREEN	ALVA ARMORY	ROOM 10	Negative	< LOD	< LOD	< LOD
95	10/4/2011 15:38	WALL	CONCRETE BLOCK	C	INTACT	BEIGE	ALVA ARMORY	ROOM 10	Negative	< LOD	< LOD	< LOD
96	10/4/2011 15:39	WALL INSULATION FRAME	METAL	C	INTACT	BROWN	ALVA ARMORY	ROOM 10	Negative	< LOD	< LOD	< LOD
97	10/4/2011 15:39	WALL INSULATION FRAME	METAL	A	INTACT	BROWN	ALVA ARMORY	ROOM 10	Null	< LOD	< LOD	< LOD
98	10/4/2011 15:40	WALL INSULATION FRAME	METAL	A	INTACT	BROWN	ALVA ARMORY	ROOM 10	Negative	< LOD	< LOD	< LOD
99	10/4/2011 15:40	DOOR FRAME	METAL	A	INTACT	BROWN	ALVA ARMORY	ROOM 10	Negative	< LOD	< LOD	< LOD
100	10/4/2011 15:41	DOOR FRAME ROLL UP	METAL	D	POOR	BROWN	ALVA ARMORY	ROOM 10	Negative	< LOD	< LOD	< LOD
101	10/4/2011 15:53	WALL	CONCRETE BLOCK	C	FAIR	YELLOW	ALVA ARMORY	ROOM 25	Negative	0.05	0.05	1.1
102	10/4/2011 15:58	WALL	CONCRETE BLOCK	A	INTACT	BEIGE	ALVA ARMORY	ROOM 11	Negative	< LOD	< LOD	< LOD
103	10/4/2011 15:59	WALL	CONCRETE BLOCK	C	INTACT	BEIGE	ALVA ARMORY	ROOM 11	Negative	< LOD	< LOD	< LOD
104	10/4/2011 16:01	WALL	CONCRETE BLOCK	C	INTACT	BROWN	ALVA ARMORY	ROOM 12	Negative	< LOD	< LOD	< LOD
105	10/4/2011 16:01	WALL	CONCRETE BLOCK	A	INTACT	BROWN	ALVA ARMORY	ROOM 12	Negative	< LOD	< LOD	< LOD
106	10/4/2011 16:03	WALL	CONCRETE BLOCK	A	INTACT	BROWN	ALVA ARMORY	ROOM 13	Negative	< LOD	< LOD	< LOD
107	10/4/2011 16:03	WALL	CONCRETE BLOCK	C	INTACT	BROWN	ALVA ARMORY	ROOM 13	Negative	< LOD	< LOD	< LOD
108	10/4/2011 16:07	WALL	DRYWALL	C	FAIR	BLUE	ALVA ARMORY	ROOM 14	Null	< LOD	< LOD	1.3
109	10/4/2011 16:07	WALL	DRYWALL	C	FAIR	BLUE	ALVA ARMORY	ROOM 14	Negative	< LOD	< LOD	1.5
110	10/4/2011 16:08	WALL	CONCRETE BLOCK	B	FAIR	BLUE	ALVA ARMORY	ROOM 14	Negative	< LOD	< LOD	1.1
111	10/4/2011 16:09	WALL	CONCRETE BLOCK	A	FAIR	BLUE	ALVA ARMORY	ROOM 14	Negative	< LOD	< LOD	< LOD
112	10/4/2011 16:09	WALL	CONCRETE BLOCK	D	FAIR	BLUE	ALVA ARMORY	ROOM 14	Negative	< LOD	< LOD	< LOD
113	10/4/2011 16:10	BASEBOARD	WOOD	B	FAIR	BLUE	ALVA ARMORY	ROOM 14	Negative	< LOD	< LOD	< LOD
114	10/4/2011 16:10	DOOR	WOOD	C	INTACT	STAINED	ALVA ARMORY	ROOM 14	Negative	< LOD	< LOD	< LOD
115	10/4/2011 16:11	DOOR FRAME	METAL	C	INTACT	BLUE	ALVA ARMORY	ROOM 14	Negative	< LOD	< LOD	< LOD
116	10/4/2011 16:11	DOOR FRAME	METAL	C	INTACT	BROWN	ALVA ARMORY	ROOM 15	Negative	< LOD	< LOD	< LOD
117	10/4/2011 16:44	WALL	CONCRETE	A	INTACT	BLUE	ALVA ARMORY	ROOM 15	Negative	< LOD	< LOD	< LOD
118	10/4/2011 16:45	WALL	CONCRETE	B	INTACT	BLUE	ALVA ARMORY	ROOM 15	Negative	< LOD	< LOD	1.2
119	10/4/2011 16:45	WALL	CONCRETE	C	INTACT	BLUE	ALVA ARMORY	ROOM 15	Negative	< LOD	< LOD	< LOD
120	10/4/2011 16:46	WALL	CONCRETE	D	INTACT	BLUE	ALVA ARMORY	ROOM 15	Negative	< LOD	< LOD	1.1
121	10/4/2011 16:47	WALL	CONCRETE	B	INTACT	BLUE	ALVA ARMORY	ROOM 15	Negative	< LOD	< LOD	< LOD
122	10/4/2011 16:47	WALL	CONCRETE	C	INTACT	BLUE	ALVA ARMORY	ROOM 16	Negative	< LOD	< LOD	1.2
123	10/4/2011 16:48	CEILING	DRYWALL	C	INTACT	BLUE	ALVA ARMORY	ROOM 16	Negative	< LOD	< LOD	1.1
124	10/4/2011 16:49	WALL	CONCRETE	D	INTACT	BLUE	ALVA ARMORY	ROOM 16	Negative	< LOD	< LOD	< LOD
125	10/4/2011 16:49	BASEBOARD	WOOD	D	INTACT	BLUE	ALVA ARMORY	ROOM 16	Negative	< LOD	< LOD	< LOD
126	10/4/2011 16:54						CALIBRATE		Positive	1	1	0.6
127	10/4/2011 16:55						CALIBRATE		Positive	1	1	0.6
128	10/4/2011 16:56						CALIBRATE		Positive	1	1	0.6
129	10/4/2011 16:59	DOOR	WOOD	D	INTACT	STAINED	ALVA ARMORY	ROOM 17	Negative	< LOD	< LOD	< LOD
130	10/4/2011 16:59	DOOR FRAME	METAL	D	INTACT	BROWN	ALVA ARMORY	ROOM 17	Negative	< LOD	< LOD	< LOD
131	10/4/2011 17:00	WALL	CONCRETE BLOCK	C	INTACT	BEIGE	ALVA ARMORY	ROOM 17	Negative	< LOD	< LOD	< LOD
132	10/4/2011 17:00	WALL	CONCRETE BLOCK	D	INTACT	GREEN	ALVA ARMORY	ROOM 17	Negative	< LOD	< LOD	1.1
133	10/4/2011 17:01	WALL	CONCRETE BLOCK	B	INTACT	BEIGE	ALVA ARMORY	ROOM 17	Negative	< LOD	< LOD	< LOD
134	10/4/2011 17:03	WALL	CONCRETE BLOCK	B	INTACT	YELLOW	ALVA ARMORY	ROOM 27	Negative	< LOD	< LOD	< LOD
135	10/4/2011 17:04	WALL	CONCRETE BLOCK	B	INTACT	YELLOW	ALVA ARMORY	ROOM 27	Null	< LOD	< LOD	1.3

Reading No	Time	Component	Substrate	Side	Condition	Color	Site	Room	Results	PbC	PbL	PbK
136	10/4/2011 17:04	WALL	CONCRETE BLOCK	D	INTACT	BROWN	ALVA ARMORY	ROOM 27	Negative	< LOD	< LOD	< LOD
137	10/4/2011 17:05	STALL WALL	METAL	C	INTACT	YELLOW	ALVA ARMORY	ROOM 27	Negative	< LOD	< LOD	< LOD
138	10/4/2011 17:05	DOOR FRAME	METAL	A	INTACT	BROWN	ALVA ARMORY	ROOM 27	Negative	< LOD	< LOD	< LOD
139	10/4/2011 17:06	DOOR FRAME	METAL	B	INTACT	BROWN	ALVA ARMORY	ROOM 26	Negative	< LOD	< LOD	< LOD
140	10/4/2011 17:07	STALL WALL	METAL	A	INTACT	YELLOW	ALVA ARMORY	ROOM 26	Negative	< LOD	< LOD	< LOD
141	10/4/2011 17:07	WALL	CONCRETE BLOCK	C	INTACT	BEIGE	ALVA ARMORY	ROOM 26	Negative	< LOD	< LOD	< LOD
142	10/4/2011 17:08	WALL	CONCRETE BLOCK	B	INTACT	BEIGE	ALVA ARMORY	ROOM 26	Negative	< LOD	< LOD	< LOD
143	10/4/2011 17:08	CEILING	CONCRETE	B	INTACT	WHITE	ALVA ARMORY	ROOM 26	Negative	< LOD	< LOD	< LOD
144	10/4/2011 17:10	WALL	CONCRETE BLOCK	A	INTACT	BEIGE	ALVA ARMORY	ROOM 26	Negative	< LOD	< LOD	< LOD
145	10/4/2011 17:10	WALL	CONCRETE BLOCK	B	INTACT	BEIGE	ALVA ARMORY	ROOM 18	Null	< LOD	< LOD	1.2
146	10/4/2011 17:11	WALL	CONCRETE BLOCK	A	INTACT	BROWN	ALVA ARMORY	ROOM 18	Negative	< LOD	< LOD	1
147	10/4/2011 17:12	DOOR	WOOD	D	INTACT	STAINED	ALVA ARMORY	ROOM 18	Negative	< LOD	< LOD	< LOD
148	10/4/2011 17:13	DOOR FRAME	METAL	D	INTACT	BROWN	ALVA ARMORY	ROOM 18	Negative	< LOD	< LOD	< LOD
149	10/4/2011 17:14	DOOR FRAME	METAL	D	INTACT	BROWN	ALVA ARMORY	ROOM 19	Negative	< LOD	< LOD	< LOD
150	10/4/2011 17:14	BAR JOIST	METAL	D	INTACT	BROWN	ALVA ARMORY	ROOM 19	Negative	< LOD	< LOD	< LOD
151	10/4/2011 17:16	DOOR FRAME	METAL	D	FAIR	BROWN	ALVA ARMORY	ROOM 19	Negative	< LOD	< LOD	< LOD
152	10/4/2011 17:17	WALL	CONCRETE BLOCK	D	INTACT	BROWN	ALVA ARMORY	ROOM 20	Negative	< LOD	< LOD	< LOD
153	10/4/2011 17:18	WALL	CONCRETE BLOCK	D	INTACT	BEIGE	ALVA ARMORY	ROOM 20	Negative	< LOD	< LOD	1
154	10/4/2011 17:18	WALL	CONCRETE BLOCK	B	INTACT	BEIGE	ALVA ARMORY	ROOM 20	Negative	< LOD	< LOD	1.2
155	10/4/2011 17:20	WALL	CONCRETE BLOCK	C	INTACT	YELLOW	ALVA ARMORY	ROOM 20	Negative	< LOD	< LOD	< LOD
156	10/4/2011 17:20	WALL	DRYWALL	D	INTACT	WHITE	ALVA ARMORY	ROOM 21	Negative	< LOD	< LOD	1
157	10/4/2011 17:20	WALL	DRYWALL	A	INTACT	WHITE	ALVA ARMORY	ROOM 21	Negative	< LOD	< LOD	0.8
158	10/4/2011 17:21	WALL	DRYWALL	B	INTACT	WHITE	ALVA ARMORY	ROOM 21	Negative	< LOD	< LOD	< LOD
159	10/4/2011 17:21	DOOR FRAME	DRYWALL	C	INTACT	WHITE	ALVA ARMORY	ROOM 21	Negative	< LOD	< LOD	0.9
160	10/4/2011 17:22	DOOR FRAME	METAL	D	INTACT	BROWN	ALVA ARMORY	ROOM 21	Negative	< LOD	< LOD	< LOD
161	10/4/2011 17:22	DOOR FRAME	METAL	D	INTACT	BROWN	ALVA ARMORY	ROOM 22	Null	< LOD	< LOD	< LOD
162	10/4/2011 17:23	WALL	METAL	D	INTACT	BROWN	ALVA ARMORY	ROOM 22	Negative	< LOD	< LOD	< LOD
163	10/4/2011 17:24	WALL	CONCRETE BLOCK	D	INTACT	BEIGE	ALVA ARMORY	ROOM 22	Negative	< LOD	< LOD	1.1
164	10/4/2011 17:25	WALL	CONCRETE BLOCK	C	INTACT	BEIGE	ALVA ARMORY	ROOM 22	Negative	< LOD	< LOD	1.2
165	10/4/2011 17:26	WALL	CONCRETE BLOCK	A	INTACT	BEIGE	ALVA ARMORY	ROOM 23	Negative	< LOD	< LOD	< LOD
166	10/4/2011 17:26	WALL	CONCRETE BLOCK	B	INTACT	ORANGE	ALVA ARMORY	ROOM 23	Negative	< LOD	< LOD	1.2
167	10/4/2011 17:29	WALL	CONCRETE BLOCK	D	INTACT	BROWN	ALVA ARMORY	ROOM 23	Negative	< LOD	< LOD	< LOD
168	10/4/2011 17:30	WALL	CONCRETE BLOCK	D	INTACT	BEIGE	ALVA ARMORY	ROOM 24	Negative	< LOD	< LOD	1
169	10/4/2011 17:30	WALL	CONCRETE BLOCK	B	INTACT	BEIGE	ALVA ARMORY	ROOM 24	Negative	< LOD	< LOD	1
170	10/4/2011 17:31	WALL	CONCRETE BLOCK	A	INTACT	BEIGE	ALVA ARMORY	ROOM 24	Negative	< LOD	< LOD	1
171	10/4/2011 17:31	DOOR	CONCRETE BLOCK	C	INTACT	BEIGE	ALVA ARMORY	ROOM 24	Negative	< LOD	< LOD	< LOD
172	10/4/2011 17:32	DOOR FRAME	WOOD	A	INTACT	STAINED	ALVA ARMORY	ROOM 24	Negative	< LOD	< LOD	< LOD
173	10/4/2011 17:36		METAL	A	INTACT	BROWN	ALVA ARMORY	ROOM 24	Negative	< LOD	< LOD	< LOD
174	10/4/2011 17:37						CALIBRATE		Positive	1.1	1.1	1.6
175	10/4/2011 17:37						CALIBRATE		Positive	1.2	1	1.8
175	10/4/2011 17:37						CALIBRATE		Positive	1.1	1.1	1.6

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/cm² (inclusive)

The calibration of the XRF instrument should be checked using the paint film nearest 1.0 mg/cm² in the NIST Standard Reference Material (SRM) used (e.g., for NIST SRM 2579, use the 1.02 mg/cm² 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 not 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)						
Substrate	All Data			Median for laboratory-measured lead levels (mg/cm ²)		
	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

Department of Environmental Quality

This is to Certify That:

ENERCON SVC INC

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

FIRM

Certification #: OKFIRM11152


This certification 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

Department of Environmental Quality

MARSHALL BRANSCUM

INSPECTOR

Certification #: OKINSR13415

Issued on: 4/1/2011

Expires on: 3/31/2012



Division Director
Air Quality Division



Environmental Programs Manager
Air Quality Division

Department of Environmental Quality

I do hereby certify that

EMMETT MUENKER

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

INSPECTOR/RISK ASSESSOR

Certification #: OKRASR11260

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



Excellence — Every project. Every day.

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LAND PROTECTION DIVISION
DEPARTMENT OF ENVIRONMENTAL QUALITY

ASBESTOS SURVEY REPORT

**NATIONAL GUARD ARMORY
995 THUNDERBIRD ROAD
ALVA, OKLAHOMA 73717**

Enercon Project Number — ENMISC2481

October 24, 2011

Prepared for:

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

Prepared By:

Enercon Services, Inc.
6525 North Meridian, Suite 400
Oklahoma City, Oklahoma 73116

Inspected By:

Richard D. Belcher
AHERA Asbestos Inspector OK-159310

Reviewed By:

Emmett W. Muenker
AHERA Asbestos Management Planner OK-MP130435

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Table 2 Bulk Material Samples & Laboratory Analytical Results

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A - Oklahoma Inspector and Management Planner Licenses

B - Site Layouts with Sample and Asbestos Locations

C - Laboratory Reports of Analyses/Chain of Custody

ASBESTOS SURVEY REPORT

**NATIONAL GUARD ARMORY
995 THUNDERBIRD ROAD
ALVA, OKLAHOMA 73717**

Executive Summary

An asbestos survey of the Alva National Guard Armory, 995 Thunderbird Road, Alva, Oklahoma was conducted on October 4, 2011. The armory consisted of a single building with a large drill room, offices, a kitchen area, and an indoor firing range that was located south of the drill room. During the survey, a total of 22 bulk samples were collected from 09 homogeneous areas. A summary of the asbestos-containing building materials (ACBMs) is provided below.

Summary of Asbestos-Containing Building Materials

MATERIAL CATEGORY	MATERIAL DESCRIPTION	TOTAL APPROXIMATE AMOUNT
FRIABLE	Fire Door Insulation	4 Doors
CATEGORY I NON-FRIABLE	Beige Floor Tiles	3,250 SF
CATEGORY II NON-FRIABLE	None	N/A

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

Recommended actions for planned renovation:

Prepare specifications for abatement of friable and non-friable asbestos materials that would be disturbed during renovation activities; solicit bids; award contract and complete abatement.

Recommended actions prior to planned demolition:

Prepare specifications for abatement of all friable asbestos materials; solicit bids; award contract and complete abatement.

Recommended actions for continued operation without removal of all asbestos in the building:

Prepare and implement an Asbestos Management Plan to manage the asbestos in place. This is to include Asbestos Awareness Training for maintenance and custodial personnel.

ASBESTOS SURVEY REPORT

**NATIONAL GUARD ARMORY
995 THUNDERBIRD ROAD
ALVA, OKLAHOMA 73717**

1.0 INTRODUCTION

An asbestos survey of the Alva National Guard Armory, 995 Thunderbird Road, Alva, Oklahoma was conducted on October 4, 2011. The armory consisted of a single building with a large drill room, an annex west of the drill room, plus an attached office wing located south of the drill room. The inspection was performed by Richard Belcher, AHERA Inspector OK-159310. Appendix A contains a copy of his Inspector License.

The purpose of the asbestos survey was to locate, identify, and quantify asbestos containing building materials (ACBMs) present in the facility. The asbestos survey was requested by the Oklahoma Department of Environmental Quality.

2.0 SURVEY PROCEDURES

The survey consisted of visual examination of building components and insulating materials to identify those suspected to contain asbestos. Asbestos-containing materials are divided into three basic groups: Thermal System Insulation (TSI), Surfacing Materials (SM) and Miscellaneous Materials (MM). TSI consists of insulating materials, mastics or sealants used to reduce heat loss or gain on mechanical systems such as piping, ducts, air handlers, boilers, flues, heat exchangers, etc. SM includes materials applied to surfaces other than mechanical systems for purposes such as fireproofing, acoustical insulation and aesthetic finishes. MM are all other materials not included in the other two categories, and include materials such as floor tiles, adhesives, gaskets, caulking compounds and asbestos-cement piping/panels (Transite®).

Non-friable ACBM is categorized as either Category I or Category II non-friable material. Category I non-friable ACBM includes packings, gaskets, resilient floor coverings, and asphalt roofing products. Category II non-friable ACBM includes any other non-friable material.

The protocols outlined in the Asbestos Hazard Emergency Response Act (AHERA) were used for this survey. The survey included all building materials that were suspected to contain asbestos, with the exception of the roofing components. Samples were analyzed by QuanTEM Laboratories, an analytical laboratory accredited under the National Voluntary Laboratory Accreditation Program (NVLAP). The analytical method used was Polarized Light Microscopy (PLM) with dispersion staining, as prescribed by the AHERA regulation. It is a method for positive identification of asbestos fibers. Materials determined to contain more than one percent asbestos by laboratory analysis are considered asbestos-containing materials.

The numbering system used for sample identification consisted of three separate components, a facility identifier, a homogeneous area (materials appearing alike in their color, texture and function) number and a sample number.

Rooms in the building were not all identified with room numbers, therefore an arbitrary number was assigned to each room for referencing the locations of samples and asbestos-containing materials identified during the survey. These arbitrary room numbers are used throughout this report and the room locations are shown on the building layouts in Appendix B.

3.0 SURVEY RESULTS

A total of 22 bulk samples were collected from nine homogeneous areas during the survey. Appendix B contains site layouts with sample and asbestos locations. Appendix C contains the laboratory reports of analyses/chains of custody.

A summary of asbestos containing building materials, including categorization and quantities, is presented in Table 1. Table 2 provides a summary of the bulk material samples collected, the general location of the materials sampled, the approximate quantity of asbestos-containing materials present in each homogeneous area and the laboratory analytical results.

Table 1
Summary of Asbestos Containing Building Materials

MATERIAL CATEGORY	MATERIAL DESCRIPTION	TOTAL APPROXIMATE AMOUNT
FRIABLE	Fire Door Insulation	4 Doors
CATEGORY I NON-FRIABLE	Beige Floor Tiles	3,250 SF
CATEGORY II NON-FRIABLE	None	N/A

SF=Square Feet; LF=Linear Feet

Table 2
Bulk Material Samples & Laboratory Analytical Results

SAMPLE ID	DESCRIPTION & LOCATION	APPROX. AMOUNT	ASBESTOS TYPE/ PERCENT
AA-1-01,02,03	Drain Pan Insulation	NQ	None Detected
AA-2-01,02	Fire Door Insulation	4 EA	20-30% Chrysotile
AA-3-01,02	Yellow Mastic	NQ	None Detected
AA-3-01,02	Beige Floor Tile	3,250 SF	3-4% Chrysotile
AA-4-01,02	Black Floor Tile	NQ	None Detected
AA-5-01,02	Tan Floor Tile	NQ	None Detected
AA-6-01,02,03	White Wall Texture	NQ	None Detected
AA-7-01,02,03	White Wall Texture	NQ	None Detected
AA-8-01,02,03	White Joint Compound	NQ	None Detected
AA-9-01,02	White Ceiling Tile	NQ	None Detected

SF=Square Feet; LF=Linear Feet; EA = Each; NQ=Not Quantified; CS=Confirmation Sample

4.0 CONCLUSIONS & RECOMMENDATIONS

The asbestos-containing building materials present consisted of both friable and non-friable materials. The locations of these materials are shown on the layout in Appendix B.

Friable Asbestos-Containing Materials:

- **Fire Door Insulation:** Four (4) wooden doors with asbestos insulation inside the doors. These are double doors that lead into the armory office area from the drill room.

Non-friable Asbestos-Containing Materials:

- Floor Tiles: Approximately 2,870 SF of asbestos-containing beige floor tiles were present in Rooms 11-13, 17-18, 20-21, and 23. Approximately 380 SF of asbestos-containing beige floor tiles were present beneath carpet in Rooms 14-16. The adhesive did not contain asbestos.

Recommendations for Friable Asbestos-containing Materials: The following recommendations are made for addressing friable materials. Disturbance of these materials is regulated by the Oklahoma Department of Labor.

1. Planned renovation and maintenance activities that could disturb friable asbestos: Prepare specifications for abatement that would be disturbed during renovation activities; solicit bids; award contract and complete abatement.
2. Planned demolition: Prepare specifications for abatement of all friable asbestos materials; solicit bids; award contract and complete abatement.
3. Continued operation without abatement of friable asbestos: Prepare and implement an Asbestos Management Plan to manage the asbestos in place. This is to include Asbestos Awareness Training for maintenance and custodial personnel.

Recommendations for Non-friable Asbestos-containing Materials: The only non-friable asbestos present was beige floor tiles located in Rooms 11-18, 20-21, and 23. These materials containing asbestos are not regulated unless they are disturbed in a manner that renders them friable; however, if they are to be removed, removal must be done by workers who are properly trained to remove them. The following actions are recommended for addressing non-friable materials:

1. Planned renovation: Prepare specifications for abatement of non-friable asbestos materials that would be disturbed during renovation activities; solicit bids; award contract and complete abatement.
2. Planned demolition: Non-friable materials present may remain in place during demolition activities and may be disposed as ordinary demolition/construction waste.
3. Continued operation without abatement of remaining asbestos: Prepare and implement an Asbestos Management Plan to manage the asbestos in place. This is to include Asbestos Awareness Training for maintenance and custodial personnel.

APPENDIX A

Oklahoma Department of Labor



FEE: \$25.00

Richard Belcher

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. **OK159310**.

Mark Costello

MARK COSTELLO
Commissioner of Labor

August 31, 2011

Date of Issuance

EXPIRES: August 31, 2012

FEE: \$500.00

Oklahoma Department of Labor



Emmett Muenker

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 MANAGEMENT PLANNER

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-MP130435**.

Mark Costello

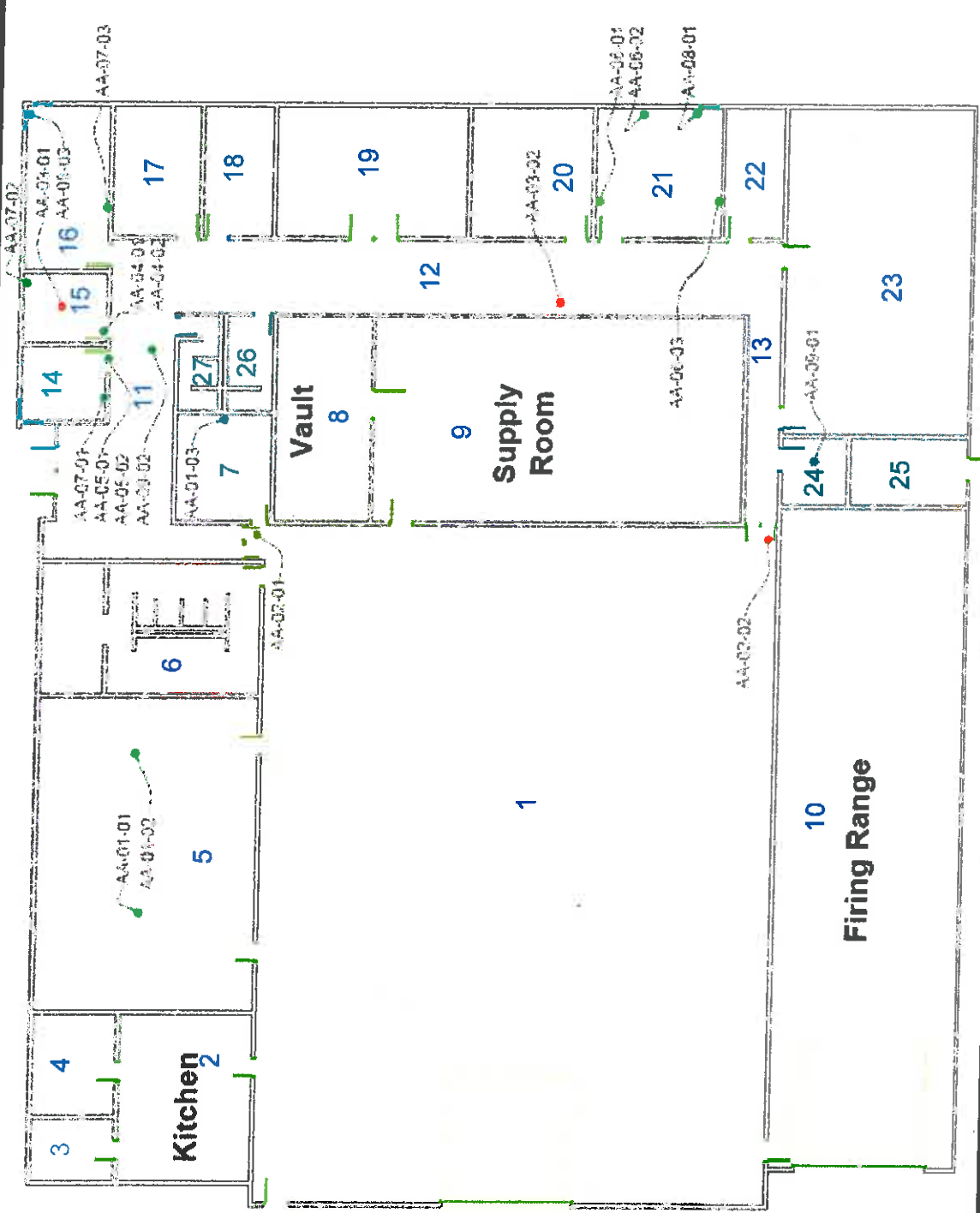
MARK COSTELLO
Commissioner of Labor

March 14, 2011

Date of Issuance

EXPIRES: March 04, 2012

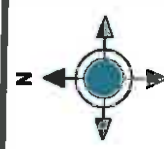
APPENDIX B



ENERCON

**FIGURE 1
ASBESTOS SAMPLE LOCATIONS**

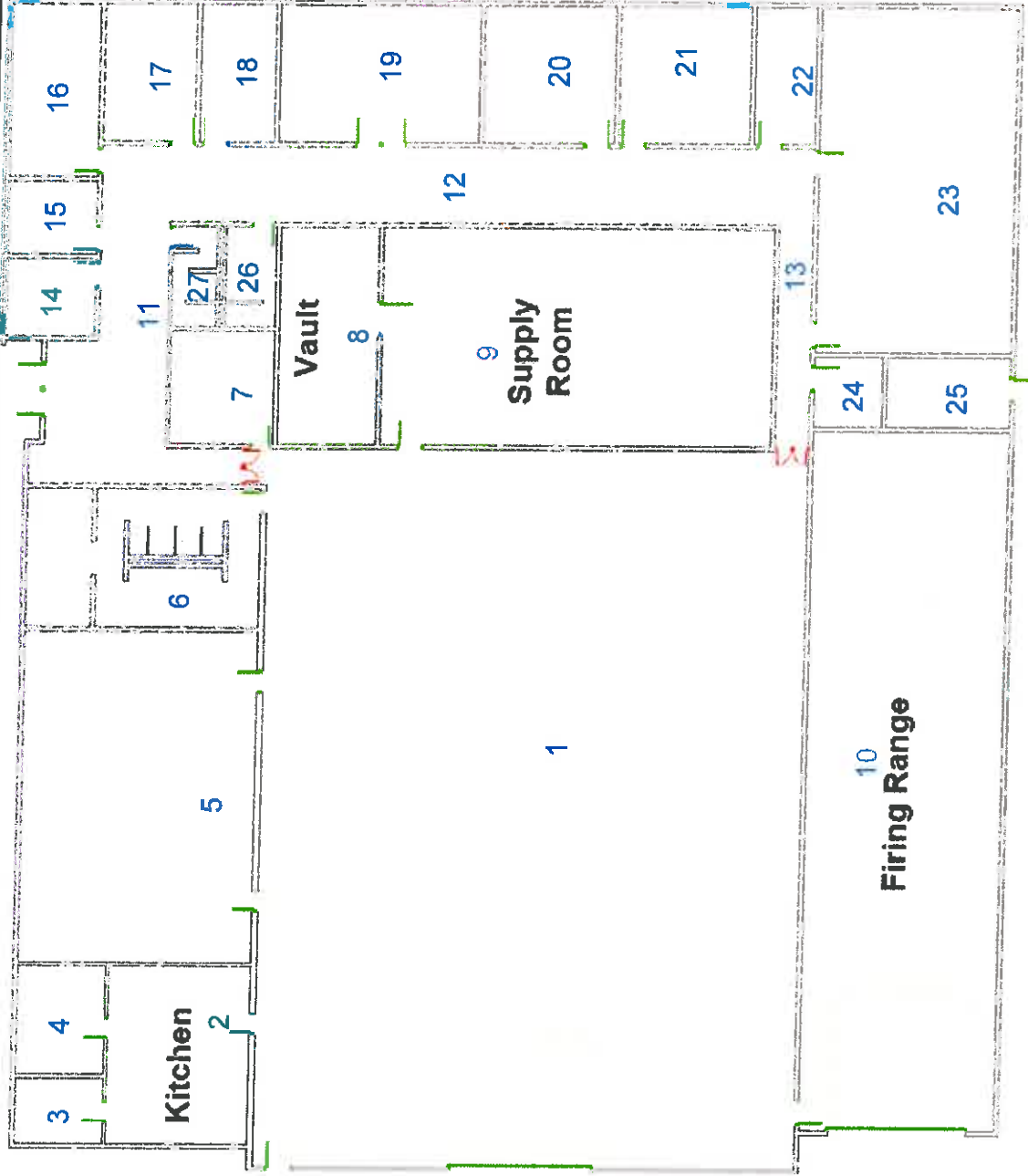
Project No: ENMISC2481



Legend:

- Positive Asbestos Sample Location
- Negative Asbestos Sample Location

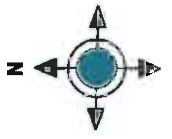
Oklahoma Department of Environmental Quality
ALVA ARMORY
 995 Thunderbird Road
 Alva, OK



ENERCON

FIGURE 2
ASBESTOS CONTAINING BUILDING MATERIALS
LOCATIONS

Project No: ENMISC2481



Legend:

- Positive 1x1 Floor Tile @ 2,870 SF
- Positive 1x1 Floor Tile under carpet @ 380-SF
- Asbestos Door Insulation @ 4 Each

Oklahoma Department of Environmental Quality
 ALVA ARMORY
 995 Thunderbird Road
 ALVA, OK



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

Polarized Light Microscopy Asbestos Analysis Report

QuantEM Lab No. 200462

Account Number: A845

Date Received: 10/05/2011

Received By: Sherrie Leftwich

Date Analyzed: 10/05/2011

Analyzed By: Gayle Ooten

Methodology: EPA/600/R-93/116

Client: Enercon Services, Inc.
6525 N. Meridian, Suite 400
Oklahoma City, OK 73116

Project: Armory

Project Location: Alva, OK

Project Number: N/A

QuantEM Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
006b		Layered	Yellow Mastic	Asbestos Not Present	Cellulose <1	Glue
007	AA-3-02	Layered	Beige Floor Tile	Asbestos Present Chrysotile 3	NA	Vinyl CaCO3
007a		Layered	Yellow Mastic	Asbestos Not Present	NA	Glue
008	AA-4-01	Homogeneous	Black Floor Tile	Asbestos Not Present	NA	Vinyl CaCO3
009	AA-4-02	Homogeneous	Black Floor Tile	Asbestos Not Present	NA	Vinyl CaCO3
010	AA-5-01	Homogeneous	Tan Floor Tile	Asbestos Not Present	NA	Vinyl CaCO3
011	AA-5-02	Homogeneous	Tan Floor Tile	Asbestos Not Present	NA	Vinyl CaCO3

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.



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Client: Enercon Services, Inc.
6525 N. Meridian, Suite 400
Oklahoma City, OK 73116

Project: Armory

Project Location: Alva, OK

Project Number: N/A

Quantem Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
012	AA-6-01	Homogeneous	White Wall Texture	Asbestos Not Present	NA	CaCO3 Paint
013	AA-6-02	Homogeneous	White Wall Texture	Asbestos Not Present	NA	CaCO3 Paint
014	AA-6-03	Homogeneous	White Wall Texture	Asbestos Not Present	NA	CaCO3 Paint
015	AA-7-01	Homogeneous	White Wall Texture	Asbestos Not Present	NA	CaCO3 Paint
016	AA-7-02	Homogeneous	White Wall Texture	Asbestos Not Present	Cellulose <1	CaCO3 Paint
017	AA-7-03	Homogeneous	White Wall Texture	Asbestos Not Present	NA	CaCO3 Paint
018	AA-8-01	Homogeneous	White Joint Compound	Asbestos Not Present	NA	CaCO3 Binder

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

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Polarized Light Microscopy Asbestos Analysis Report

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Methodology: EPA/600/R-93/116

Client: Enercon Services, Inc.
6525 N. Meridian, Suite 400
Oklahoma City, OK 73116

Project: Armory

Project Location: Alva, OK

Project Number: N/A

Quantem Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
019	AA-8-02	Homogeneous	White Joint Compound	Asbestos Not Present	NA	CaCO3 Binder
020	AA-8-03	Homogeneous	White Joint Compound	Asbestos Not Present	NA	CaCO3 Binder
021	AA-9-01	Homogeneous	White Ceiling Tile	Asbestos Not Present	Cellulose 20 Glass Fiber 40	Paint Perlite
022	AA-9-02	Homogeneous	White Ceiling Tile	Asbestos Not Present	Cellulose 20 Glass Fiber 40	Paint Perlite

Gayle Ooten, Analyst

10/6/2011

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
 2033 Heritage Park Drive, Oklahoma City, OK 73120-7502
 (800) 822-1850 (405) 755-7272 Fax: (405) 756-2068
 www.quantum.com

200462



Company Name: Cherow Services, Inc.
 Project Name: Army

Acct#:

Project Location: Area 02
 Project Number:

Sample Number	To Be Analyzed	Color / Description	Volume / Area (if applicable)	Comments
1. AA-1-01		White - Asbestos		
2. AA-1-02		"		
3. AA-1-03		"		
4. AA-2-01		White - Asbestos		
5. AA-2-02		"		
6. AA-3-01		Brown - A.I.F.T		
7. AA-3-02		"		
8. AA-4-01		Black - M.V. Vinyl Ft		
9. AA-4-02		"		
10. AA-5-01		Brown - M.V. Vinyl Ft		
11. AA-5-02		"		
12. AA-6-01		Wall Text - White		
13. AA-6-02		"		
14. AA-7-01		Blue Wall Text		
15. AA-7-02		"		
16. AA-8-01		White - Fiberglass		
17. AA-8-02		"		
18. AA-8-03		"		
19. AA-9-01				
20. AA-9-02				
21. AA-9-03				

LEGAL DOCUMENT
 Please Print Legibly

PLM

Bulk Analyze per 2870.1

400 Point Count

1000 Point Count

Gravimetric Preparation Fee

Other

TEM

Air - AHERA

Air - NIOSH 7402

Bulk - Qualitative [Yes / No] - EPA 8000-82/116

Bulk - Quantitative (weight %) - Chelated

Dual - Qualitative [Yes / No]

Dual - Quantitative (lb/m²/sq) - ASTM D6703

Drinking Water - EPA 100.0

Waste Water - EPA 800/4-85-043

Other

PCM

NIOSH 7400

Other

TURNAROUND TIME

Rush

Same Day

24 Hour

3-Day

5-Day

CONTACT INFORMATION

Name: River

Phone: 209 9637

Report Results VIA (CHOOSE ONE):

FAX:

QUANTUM Website

E-Mail:

Signature: [Signature]

Date: 10/21/03

Time: 4:00 PM

Location: 4 Col. Eric Chan Ex 105/11

Sampled By: RB

Saturday FedEx Shipping - CALL TO SCHEDULE
 Use this address for Saturday FedEx only: 4220 N. Santa Fe Ave., Oklahoma City, OK 73105-8517
 Mark Packages 'HOLD FOR SATURDAY PICKUP'

SCOPES OF WORK



State of Oklahoma
Department of Central Services
Construction and Properties

Change Order

IMPORTANT NOTE: THE WORK DESCRIBED HEREIN IS NOT AUTHORIZED UNTIL THIS CHANGE ORDER IS COMPLETED AND SIGNED BY ALL ENTITIES LISTED BELOW. DO NOT PROCEED WITH WORK UNTIL THE CHANGE ORDER IS COMPLETED AND SIGNED BY EACH PARTY.

This form is required and shall be prepared by the Contractor. All costs must be broken down.

DATE: 07/20/12 P. O. NUMBER: 2929015692 DCS/CAP PROJECT NUMBER: 12243

FROM PROPOSAL REQUEST NUMBER(S): _____ CONTRACT NUMBER: N/A

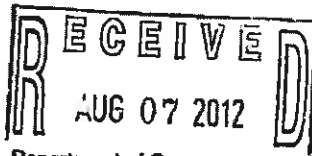
PROJECT NAME: LEAD AND ASBESTOS REMEDIATION, ALVA, OK DCS/CAP PROJ. MANAGER: R. Richardson

CONTRACTOR: BASIN ENVIRONMENTAL & SAFETY TECH. CHANGE ORDER NUMBER: 1

BRIEF DESCRIPTION OF CHANGE:

600 SQ FT CONSTRUCTION GREAT OVER IMPOSED LEAD @ \$12.00/SQ FT

BRIEF DESCRIPTION OF TIME DELAY:



Department of Central Services
Construction & Properties

Not valid until signed by the Contractor, Consultant and Authorized CAP Representative.

The original Contract Sum Guaranteed Maximum Price was \$ 79,222.00

Net change by previously authorized Change Orders \$ 0.00

The Contract Sum Guaranteed Maximum Price prior to this Change Order was \$ 79,222.00

The Contract Sum Guaranteed Maximum Price will be increased decreased unchanged by this Change Order in the amount of \$ 7200.00

The new Contract Sum Guaranteed Maximum Price including this Change Order will be \$ 86,422.00

The Contract Time will be increased decreased unchanged by Calendar Days

The date of Substantial Completion as of the date of this Change Order therefore is 07/24/12
Date

APPROVALS:

Jim OHSELDOR
Contractor Name

[Signature]
Signature

07/20/12
Date

Consultant Name

Signature

Date:

Oklahoma Department of Environmental Quality

Signature

JUL 27 2012
Date

Using Agency

GL Unit:	Acct:	Sub-Acct:	Fund Type:	Class	Fund:	Dept:	Bud Ref:
----------	-------	-----------	------------	-------	-------	-------	----------

Mike Jones

Authorized CAP Representative

Signature

8-13-12
Date:

Rebekah Richardson

DCS Project Manager

Signature

8-10-12
Date:

STATEMENT OF WORK

For

Remediation of Lead and Asbestos Contamination at the Alva 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 Alva, Oklahoma. This statement of work (SOW) describes the abatement of lead-based paint, remediation of lead contaminated dust, and removal and proper disposal of asbestos containing material. 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 Alva Armory is attached for review (Attachment 1).

The building is located at 995 Thunderbird Road, Alva, Oklahoma 73717. 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 thirty (30) calendar 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. Contractor shall not cause damage to building structures, property, walls, fixtures, etc. during remediation/abatement process. If damage is caused to these items, contractor is responsible for repairing the damage.
 - d. Coordination of work areas shall be scheduled with DEQ.
 - e. 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;
- Posses a current lead-based paint firm license and have a certified lead-based paint supervisor in order to perform lead-based paint abatement;
- Posses a current Oklahoma Department of Labor (ODOL) Asbestos Abatement Contractor License or have a licensed sub-contractor in order to perform asbestos abatement;
- Follow all appropriate OSHA requirements;
- Read Guidelines for Rehabilitation and Conversion of Indoor Firing Ranges, November 3, 2006, Departments of the Army and Air Force, National Guard Bureau (Attachment 6), and refer to this document as a reference and guideline for remediating IFR lead contamination.

- 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;

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;

SEQUENCE OF EVENTS

The remediation of the building shall be as follows:

1. First – The asbestos abatement shall be completed.
2. Second – Marshall Environmental shall be contacted to confirm all asbestos has been appropriately removed.
3. Third – The indoor firing range (IFR) and all floors of the entire building shall be cleaned.
4. Fourth – DEQ shall be contacted to perform third party confirmation sampling to confirm (IFR) and all floors have been appropriately remediated.

ASBESTOS ABATEMENT INSTRUCTIONS

- Non-friable and/or non-regulated ACM shall be removed as described in the instructions listed below.
- For more details see the attached Alva Armory Asbestos Inspection Report with floor plan map showing locations of ACM (**Attachment 2**).
- Once Asbestos Abatement is complete, Enercon Services shall be contacted to confirm abatement has been appropriately performed and all asbestos has been removed.
 - **Floor Tile and Mastic**
 - **Remove** floor tile and mastic from room locations listed in the Asbestos Inspection Report. Office rooms 14, 15, and 16 contain carpet that must be removed prior to floor tile and mastic removal.
 - **There is a total of 3,250 ft² of floor tile and mastic that shall be removed from the building. See attached floor plan map in Asbestos Inspection Report for locations of asbestos containing floor tile mastic.**

- **Fire Doors**

- **Remove and Replace** four (4) fire doors separating the office hallways from the Drill Floor. For detailed locations of the fire doors see the Asbestos Survey Report (**Attachment 2**). For details on the abatement of the fire doors see the Asbestos Abatement Work Plan (**Attachment 2**). For details on door replacement see the Door Scope of Work and Door Replacement Specifications (**Attachment 7**).
- Any damage to outside of fire doors must be sealed with duct tape prior to removal. Doors shall be removed and wrapped in poly sheeting prior to disposal.
- Doors must be disposed at a hazardous waste landfill.

LEAD DUST REMEDIATION INSTRUCTIONS

See Lead-Based Paint Inspection and Settled Dust
Sampling Report for details (**Attachment 5**)

1. Indoor Firing Range (IFR)

The IFR is a long narrow room where the Oklahoma Military Department would target practice with weapons. The IFR is to be cleaned by removal of all lead contaminated materials, including removal of all removable acoustical tiles 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 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.

- **Pre-remediation Removal**

- Decontaminate all items to be removed from the IFR, wrap in poly sheeting, and properly dispose.
 - Items such as acoustical tiles or other porous materials shall be HEPA vacuumed, washed, and sampled for TCLP. Acoustical tile 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.
- The IFR bullet backstop and backstop stairs shall be decontaminated, wrapped in poly sheeting, and properly disposed.
 - Disassembling and cutting of these items may be required for removal.
 - Backstop stairs contain lead-based paint.
- The IFR bullet trap sand shall be placed in sealed drums and disposed as hazardous waste.

- **Remediation**

- HEPA vacuum and wet wash walls, floor, ceiling, vent fan, and other structures that are contaminated;
- If acoustical tile cannot be removed from the ceiling, tiles shall be HEPA vacuumed, wet washed, and then sealed with DEQ approved lead-based paint encapsulant (**Attachment 4**);
- 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 DEQ. The Contractor shall provide DEQ a minimum of five (5) calendar days prior notice to perform sampling. See Section C (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;
 - BASF Acryl 60 or DEQ approved equivalent shall be applied to surfaces according to manufacturer's specifications. Specifications are attached (Attachment 4);
 - BASF Construction Grout or DEQ approved equivalent shall be applied (sprayed or troweled) to surfaces according to manufacturer's specifications. Specifications are attached (Attachment 4).

- 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 4);
 - 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 DEQ 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 DEQ. Contractor shall provide DEQ 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 5)

- 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 DEQ to perform 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 C (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 samples taken by DEQ.
- DEQ will be responsible for taking all post remediation samples.
- DEQ shall be notified five (5) days prior to each sampling event.
- Contact Information: DEQ
 Contact: Dustin Davidson
 Phone: (405) 702-5115
- The third-party sampling shall not be included in the contractors base bid;
- 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

5. FINAL REPORT

- Write final report and submit to DEQ;
- Final report shall include:
 - A detailed summary of work including any warranties and data;
 - copy of post remediation sampling report;
 - waste manifests (if any); and
 - photo documentation of work;
 - Photo documentation of work will have color digital photos with captions describing photo;
- Final report will be submitted in a bound hard copy and electronically on disc.

OWNER REPRESENTATIVE

Owner's Representative:

Dustin Davidson
Oklahoma Department of Environmental Quality
Land Protection Division
707 N. Robinson
Oklahoma City, OK 73102

Phone Numbers:

(405) 702-5115 (Office)
(405) 702-5101 (Fax)

E-Mail: Dustin.Davidson@deq.ok.gov

ATTACHMENT 1

Alva Armory Floor Plan Map

ATTACHMENT 2

Alva Armory Asbestos Inspection Report

Alva Armory Asbestos Abatement Work Plan

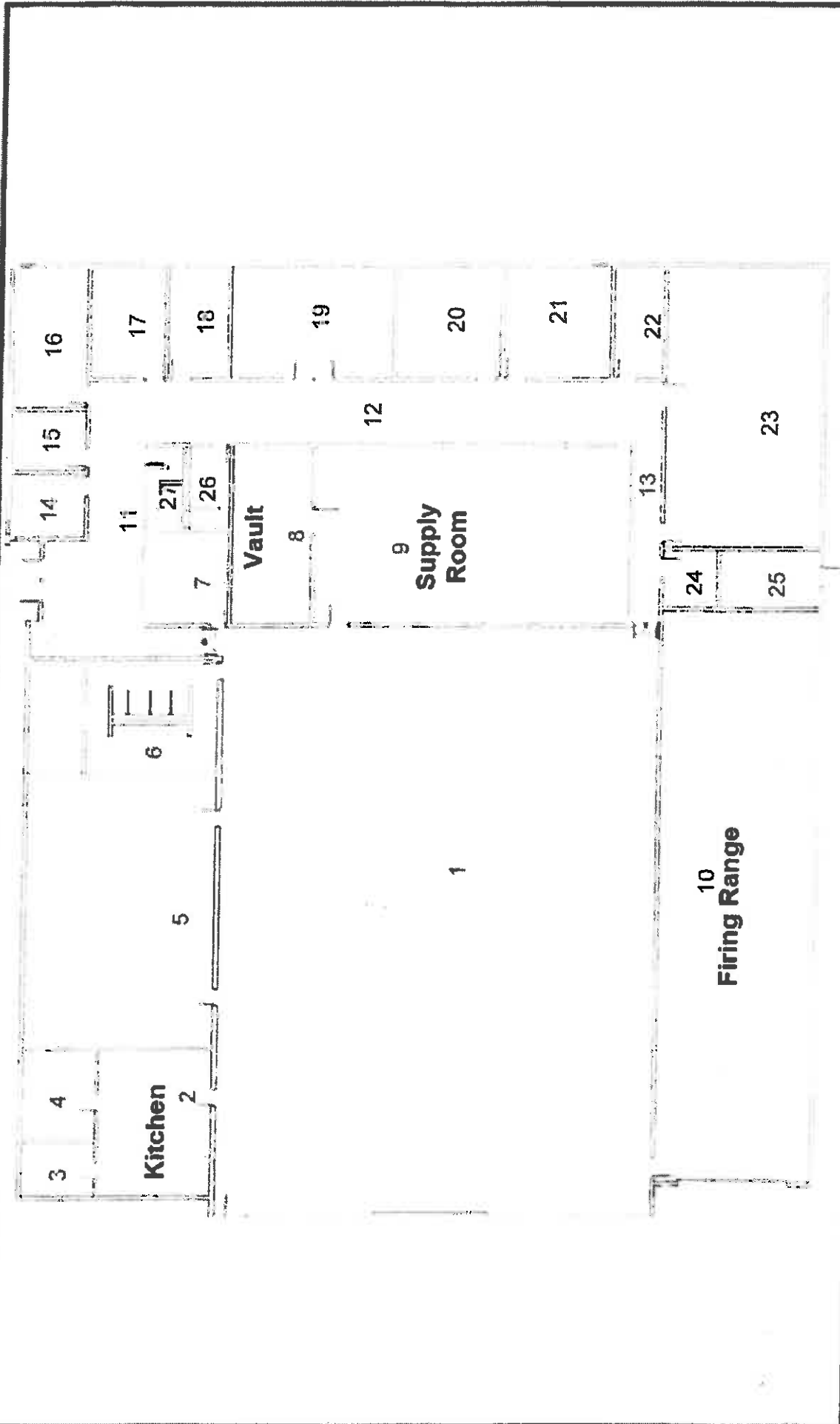
**ASBESTOS ABATEMENT WORK PLAN
ALVA ARMORY
ALVA, OKLAHOMA**

- A. INTRODUCTION:** This Work Plan was prepared by Enercon Services, Inc., in order to provide a prudent course of action for handling of the removal and disposal of asbestos-containing fire doors at the Alva Armory. Protocols to be used are to protect abatement workers from exposure to airborne asbestos fibers during the work being performed. The building is unoccupied and will remain so until completion of the project.
- B. PROJECT INFORMATION:**
1. Project Name: Fire Door Removal and Disposal, Alva Armory
 2. Description of Work/Occupancy: The work addressed herein involves removal and disposal of four fire doors at the Alva Armory.
 3. Project Type: Renovation.
 4. Abatement Contractor: To be determined by bid.
 5. Industrial Hygiene/Air Monitoring Firm: To be determined by abatement contractor.
- C. REGULATORY COMPLIANCE (1):** The specific governing regulations affecting this work include, but are not limited to, 29 CFR 1926.1101 (OSHA Construction Industry Asbestos Standard), 29 CFR 1910.134 (OSHA Respiratory Protection), 40 CFR 61, Subpart M (Asbestos NESHAP) and OAC 380:50 (Oklahoma Rules for Abatement of Friable Asbestos). Waste transport and disposal is to be performed by an Oklahoma-licensed asbestos waste transporter with a waste disposal manifest/chain of custody signed by the receiving landfill. DOT Class 9 placards are to be displayed during transportation of asbestos waste.
- D. WORK SEQUENCING/SCHEDULING (2):** The work in the Alva Armory is to be done in a single phase. The work is to be scheduled by the abatement contractor in coordination with Enercon Services and the Department of Environmental Quality. The work is expected to be planned for single work shift on a weekday during normal work hours.
- E. EGRESS AND FIRE PROTECTION (3):** In the event emergency evacuation is necessary, the primary exit will be to exit the drill room through the nearest exit to the outside of the building. There are multiple exits available for secondary exits. Workers will be briefed on the available exit paths, emergency procedures and the assembly point at the beginning of the work shift. No fire protection measures are required.
- F. MATERIALS TO BE ABATED (4):**
1. Description: The material to be abated is four wooden fire-rated doors with asbestos inside. The doors are undamaged.
 2. Amount, Location and Type of Asbestos-Containing Materials (ACM): There is approximately 80 SF of asbestos inside the doors. The asbestos inside the doors contains from 20-30% Chrysotile. The laboratory report excerpt is attached.

- G. ASBESTOS ABATEMENT METHODS (5):** The fire doors will be removed from their locations and double-wrapped in 6-mil poly for disposal. No decon or loadout will be used. A poly-lined waste trailer will be available for transporting the doors to the landfill for disposal as regulated asbestos waste. No PPE will be used as the wooden doors are intact and undamaged with the asbestos sealed inside.
- H. ASBESTOS AIR MONITORING/RESPIRATORY PROTECTION (6-8):** None required.
- I. CONTAINMENT METHODS (9):** No containment will be used.
- J. DECONTAMINATION SYSTEM (10):** No decon will be required.
- K. SOIL CONTAMINATION (11):** No contaminated soils are involved.
- M. DAMAGE PROTECTION (12):** The contractor will remove the doors from the doorways by removing the hinges or hinge pins and disconnecting the door closers.
- N. VARIANCES REQUESTED (13):** None.
- O. INSPECTIONS:** No prep inspection will be required. ODOL is expected to conduct a visual/final inspection after the doors are loaded into the waste disposal trailer.
- P. CERTIFICATION:** This work plan was prepared by the undersigned for compliance with applicable federal and State regulations and approved variances.

Bill Muenker
Asbestos Project Designer, OKPD-140007

10/28/2011
Date



FJ ENERCON
 FIGURE 2
ASBESTOS CONTAINING BUILDING MATERIALS
LOCATIONS
 Project No: ENMISC2481

Legend:
 Positive 1x1 Floor Tile @ 2,870 SF
 Positive 1x1 Floor Tile under carpet @ 380-SF
 Asbestos Door Insulation @ 4 Each

Oklahoma Department of Environmental Quality
 ALVA ARMORY
 995 Thunderbird Road
 Alva, OK



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

Polarized Light Microscopy Asbestos Analysis Report

QuanTEM Lab No. 200462

Account Number: A845

Date Received: 10/05/2011

Received By: Sherrie Leftwich

Date Analyzed: 10/05/2011

Analyzed By: Gayle Ooten

Methodology: EPA/600/R-93/116

Client: Enercon Services, Inc.
6525 N. Meridian, Suite 400
Oklahoma City, OK 73116

Project: Armory

Project Location: Alva, OK

Project Number: N/A

QuanTEM Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
001	AA-1-01	Homogeneous	White Insulation	Asbestos Not Present	Cellulose 10 Glass Fiber 15	CaCO3 Binder
002	AA-1-02	Homogeneous	White Insulation	Asbestos Not Present	Cellulose 8 Glass Fiber 15	CaCO3 Binder
003	AA-1-03	Homogeneous	White Insulation	Asbestos Not Present	Cellulose 10 Glass Fiber 15	CaCO3 Binder
004	AA-2-01	Homogeneous	White Insulation	Asbestos Present Chrysotile 20	Synthetic 10	CaCO3 Binder
005	AA-2-02	Homogeneous	White Insulation	Asbestos Present Chrysotile 30	NA	CaCO3 Binder
006	AA-3-01	Layered	Yellow Mastic	Asbestos Not Present	NA	Glue
006a		Layered	Beige Floor Tile	Asbestos Present Chrysotile 4	NA	Vinyl CaCO3

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.

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: Alva Amory

Project No: 14-6887 Date: 12/06/11

Project Designer: Bill Muenker

Approved: *[Signature]*

Disapproved: _____

ITEM	ACCEPTED	REJECTED	COMMENTS
1. A statement that DOL Abatement of Friable Materials Rules apply.	X		This project will be in compliance with OAC 380.50 (Oklahoma Rules for Abatement of Friable Asbestos).
2. Sequencing and phasing of work.	X		One Phase
3. Identification of means of egress and a fire protection plan and a diagram for emergency escape routes, and fire extinguisher placements.	X		Workers briefed on emergency egress procedures. <u>CONTRACTOR MUST HAVE FIRE EXTINGUISHERS ON SITE FOR PROJECT.</u>
4. The quantity, type, percentage with bulk analysis unless presumed and a diagramed location of asbestos materials to be abated.	X		Four wooden fire doors containing approximately 60 SF of asbestos consisting of 20-30% chrysotile.
5. Abatement methods, and techniques, and numbers of containments, glove bags or mini-containments.	X		Fire doors will be wrapped in two layers of 6-mil poly for disposal. <u>DOL will perform prep.</u>
6. Details of personal and area air monitoring samples.	N/A		
7. Numbers and locations of Clean Test samples and type of analysis to be employed.	N/A		
8. Numbers, capacities, a diagram to identify locations, and discharge points, if any, of negative air machines.	N/A		
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.	N/A		
10. Details of decontamination system(s).	N/A		
11. The extent to which asbestos-contaminated soils, if any, must be removed, and the sampling methods of determining the efficacy of such removal.	N/A		
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).	N/A		
13. Any variances from the Abatement of Friable Asbestos Materials Rules.	N/A		

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 the project design and field conditions, or when unanticipated changes in field conditions.

REVIEWED BY: *[Signature]* DATE: 12-6-11

REVIEWED BY: *[Signature]* DATE: 12/6/11

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 4**).

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

DEQ Approved Lead-Based Paint Encapsulants List

Sealant and Encapsulant Specifications

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

KELLY-MOORE PAINTS INDUSTRIAL COATINGS HIGH PERFORMANCE SYSTEMS

KIM-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

KELLY-MOORE PAINT COMPANY INC. • 987 COMMERCIAL ST. • SAN CARLOS, CA 94070
Technical Assistance 1-888-MR-PAINT www.kellymoore.com

5.04

MATERIAL SAFETY DATA SHEET

For Coatings, Resins & Related Materials

Section I

Manufactured For:
Address:

Kelly-Moore Paints
987 Commercial Street
San Carlos, CA 94070

Prep Date: 07/28/08

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	Occup. Exposure Limits		Vapor Pressure	
			OSHA PEL	ACGIH TLV	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°

Vapor Density: Heavier than air

Evaporation Rate: Slower than Ether

Percent Volatile By Volume: 70 ± 3%

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.

PRODUCT DATA



ACRYL 60®

Water-based acrylic bonding and modifying admixture

Description

Acryl 60® is an acrylic-polymer emulsion mixed with Portland cement mortars, plasters, stucco, and concrete mixes to enhance their physical properties, adhesion to substrates, and durability.

Packaging

- 1 quart (0.9 L) bottles
- 1 gallon (3.8 L) bottles
- 5-gallon (18.9 L) pails
- 30 gallon (113.5 L) drums
- 55 gallon (208 L) drums

Color

White

Shelf Life

1 year when properly stored

Storage

Transport and store in unopened containers between 40 and 100° F (4 and 38° C). Protect from freezing.

Features

Acrylic polymer	Significantly improves adhesion, cohesion, tensile, compressive, and flexural strengths of cement-based materials.
Excellent chemical and UV resistance	Promotes long-lasting repairs
Improves freeze/thaw stability of Portland cement-based materials	Suitable for cold climate applications
Stable	Will not re-emulsify when exposed to water

Benefits

Where to Use

APPLICATION

- Cement-based mixes to improve their adhesion, and durability
- As gauging liquid for Thoro® waterproofing and repair products, such as ThoroSeal® and Thoro®
- Walkways
- Ramps and structural beams

LOCATION

- Interior or exterior
- Above or below grade

SUBSTRATE

- Columns

How to Apply

Surface Preparation

1. The methods required for preparation will vary depending on the end product to be applied and the site and substrate conditions.
2. In all cases the surface must be clean and sound. Remove all loose and disintegrated material. Remove any and all traces of oil, grease, dirt, dust, efflorescence, biological, mold or mildew, and release or curing agents.
3. Vacuum, sweep, or blow out the areas to be patched with clean, oil-free air.

CONCRETE/MASONRY SURFACES

Pre-dampen the area to be patched or coated with potable water to a saturated surface-dry (SSD) condition. Do not leave standing water on surface. Proper surface preparation and cleanliness are extremely important.

CRACK SURFACES

For other surface preparation guidelines, refer to the specific Thoro® product data guide for information. Mixing:

1. The normal ratio of Acryl 60® to clean potable water is 1 part Acryl 60® to 3 parts water (1 to 3). Where increased physical and chemical resistance are required, increase the Acryl 60® content in the mixing liquid to a 1 to 2 or 1 to 1 Acryl 60® to water ratio (see chart above).
2. Always mechanically mix. Do not overmix or mix at a high speed.



Technical Data

Composition

Acryl 60® is an acrylic-polymer emulsion.

Typical Properties

PROPERTY	VALUE
Density, lbs/gal (kg/L), Lab Method	8.65 (1.04)
Solids content, by volume, %, Lab Method	28
Maximum water dilution, Parts Acryl 60® to H ₂ O, Lab Method	1:3

Test Data

The following properties are for sand/cement mortar samples:

PROPERTY	RESULTS		TEST METHOD
	With Water	With 1 to 1 Acryl 60® and Water	
Compressive strength, psi (MPa) 28 days	3,800 (26.2)	4,500 (31)	ASTM C 109
Tensile strength, psi (MPa) 28 days	225 (1.5)	350 (2.4)	ASTM C 190
Flexural strength, psi (MPa) 28 days	1,800 (5.9)	1,800 (12.4)	ASTM C 348
Freeze/thaw durability	11 of 98 cycles	102 of 300 cycles	Method A

Test conditions unless otherwise specified: 70° F (21° C) and 50% RH. Reasonable variations can be expected.

Mixing Ratios

APPLICATION	RATIO
For scrub coats applied before patching or overlays	Use straight Acryl 60®
To improve the adhesion properties of painting mortars and to reduce cracking in cement plaster	Use 1 part Acryl 60® to 3 parts water
For large overlays or topping	Use 2 parts Acryl 60® to 1 part water
For bonding cement plaster no thicker than 1/4" - 3/8" (6 - 10 mm)	Use 1 part Acryl 60® to 3 parts water

NOTE: The above ratios are for normal conditions. Where bonding is more critical, increase the Acryl 60® content of the mixing liquid. A TEST PATCH IS ALWAYS RECOMMENDED.

For detailed application instructions for Thompson products, see specific product data sheets.

Application

SAND/CEMENT MORTAR

1. Thoroughly mix all cement and sand first. The sand must be clean, free of clay, and dry.
2. Make up mixing liquid from a 1 to 3 or 1 to 2 Acryl 60® water ratio depending upon requirements.
3. Slowly add the mixing liquid to the cement/sand mixture and mix with a slow-speed mixer for 1 - 2 minutes to avoid entrapping air. After preparing, cleaning, and pre-dampening the surface, brush apply a scrub coat (not diluted) of the Acryl 60®-modified cement/sand. Scrub vigorously into the surface to displace any air pockets.

4. Place the mix into the scrub-coated repair area while the scrub coat is still wet or tacky. Place the mix and avoid overworking. The trowel should be cleaned frequently, kept wet, and used with minimal pressure.

5. Maximum time for placement should not exceed 20 minutes. Higher air and surface temperatures will decrease working and placement time.

Curing

1. When rapid drying is expected due to high temperatures, rapid air movement, or wind, it is recommended that the surface be covered with wet burlap to retain moisture.
2. For normal use, allow a 24-hour curing period.
3. For heavy wheeled traffic, allow a 4-day curing period.

Clean Up

Clean all tools and equipment immediately with water. Cured material may be removed by mechanical means only.

For Best Performance

- Do not use Acryl 60® modified mixes when the ambient air or surface temperature is below 40° F (4° C) or when the temperature is expected to fall below 40° F (4° C) within 24 hours. High relative humidity, excessive moisture, and low temperatures will retard the curing of Acryl 60® modified mixes.
- Do not use with air-entrained cement mixes or with air-entraining admixtures.
- Do not overmix or aerate mixes.
- Use with proper ventilation.
- Do not use Acryl 60® as a surface-applied external bonding agent or as a primer.
- Do not expose cement-based mixes modified with Acryl 60® to water immersion service for a minimum of 24 hours at 73° F (23° C).
- Not recommended for exposure to soft water or immersion where contact with water-treatment chemicals is present without a protective top coat.
- Caution should be used when a highly solvent material is being used over a base system that contains Acryl 60®.
- Make certain the most current versions of product data sheet and MSDS are being used; call Customer Service (1-800-433-9517) to verify the most current version.
- Proper application is the responsibility of the user. Field visits by BASF personnel are for the purpose of making technical recommendations only and not for supervising or providing quality control on the jobsite.

Health and Safety

ACRYL 60®

Caution

Acryl 60® contains no hazardous ingredients as defined by 29 CFR 1910.1200 WHMIS.

Risks

May cause skin, eye or respiratory irritation. Ingestion may cause irritation.

Precautions

Avoid contact with skin, eyes and clothing. Wash thoroughly after handling. Keep container closed when not in use. DO NOT take internally. Use only with adequate ventilation. Use impervious gloves, eye protection and if the TLV is exceeded or used in a poorly ventilated area, use NIOSH/MSHA approved respiratory protection in accordance with applicable Federal, state and local regulations.

First Aid

In case of eye contact, flush thoroughly with water for at least 15 minutes. In case of skin contact, wash affected areas with soap and water. If irritation persists, SEEK MEDICAL ATTENTION. Remove and wash contaminated clothing. If inhalation causes physical discomfort, remove to fresh air. If discomfort persists or any breathing difficulty occurs or it is swallowed, SEEK IMMEDIATE MEDICAL ATTENTION.

Proposition 65

This product contains material listed by the state of California as known as to cause cancer, birth defects, or other reproductive harm.

VOC Content

1 g/L or 0.01 lbs/gal less water and exempt solvents.

For medical emergencies only, call ChemTreat (1-800-424-9300).

**BASF Construction Chemicals, LLC --
Building Systems**

889 Valley Park Drive
Shakopee, MN, 55379

www.BuildingSystems.BASF.com

Customer Service 800-433-9517
Technical Service 800-243-8739



TECHNICAL SERVICE Every product line in the ACTYL 60* family provides the same benefits and the same performance. The ACTYL 60* family is a family of products that are designed to meet the needs of the construction industry. The ACTYL 60* family is a family of products that are designed to meet the needs of the construction industry. The ACTYL 60* family is a family of products that are designed to meet the needs of the construction industry.

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The Chemical Company

PRODUCT DATA



CONSTRUCTION GROUT

General construction, mineral-aggregate
nonshrink grout

Description

Construction Grout is a noncatalyzed, multi-purpose construction grout containing mineral aggregates.

Yield

One 50 lb (22.7 kg) bag of Construction Grout mixed with 7.15 gallons (4.35 L) of water (flowable mix) provides approximately 0.45 ft³ (0.013 m³) of mixed grout.

Packaging

50 lb (22.7 kg) multi-wall paper bags

Color

Concrete gray when cured

Shelf Life

1 year when properly stored

Storage

Store in unopened bags under clean, dry conditions.

Features

- Concrete gray color (after curing)
- No organic accelerators, including chlorides or other salts
- Can be enhanced with clean, well graded aggregate materials
- Hardens free of bleeding when properly placed

Benefits

- Blends in with surrounding concrete
- Will not corrode reinforcing steel
- Fills large voids without additional mix water
- Provides high effective bearing area for proper support and load transfer

Where to Use

APPLICATION

- Normal loads for columns and base plates
- Bedding grout for precast panels
- Repairing of cavities resulting from ineffective concrete consolidation
- Capping concrete pipe
- Backfilling, underpinning foundations, and pressure grouting of slope retaining alignment
- General construction applications
- Damp pack applications

LOCATION

- Interior or exterior

How to Apply

Application

For aggregate extension guidelines refer to Appendix MB-10: Guide to Cementitious Grouting.

Mixing

By using the minimum amount of water to provide the desired workability, maximum strength will be achieved. Whenever possible, mix the grout with a mechanical mixer. Either a mortar mixer or an electric drill with a paddle device is acceptable. Put the measured amount of water into the mixer, add grout, then mix till a uniform consistency is attained. Do not use water in an amount or a temperature that will cause bleeding or segregation.

Curing

Cure all exposed grout shoulders by wet curing for 24 hours and by applying a recommended curing compound compliant with ASTM C 309 or preferably ASTM C 1315.

For Best Performance

- Contact your local representative for a pre-job conference to plan the installation.
- Construction Grout is designed for the 50 to 90° F (10 to 32° C) application temperature range. Consult your BASF representative when applying outside this range. Use cold and hot weather concreting practices (ACI 305 and ACI 308) when grouting within 10° F (5° C) of these minimum and maximum temperature ranges.
- To ensure optimum performance of Construction Grout, place at a plastic or flowable consistency and at ambient temperatures of 50° F (10° C) and above.
- For best results, allow a minimum of 1" (25 mm) vertical clearance under baseplates when placing Construction Grout.
- Do not use Construction Grout where it will come in contact with steel designed for stresses above 80,000 psi (552 MPa). Use Masterflow® 816, Masterflow® 1205, or Masterflow® 1341 post-tensioning cable grouts.



ATTACHMENT 5

**Lead-Based Paint Inspection and
Settled Dust Sampling Report
For
Alva Armory**

ATTACHMENT 6

Guidelines 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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- 2-2. Medical Surveillance for Occupational Exposure to Lead (Pb)
- 2-3. Air Monitoring

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

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- B. Protocol for Collecting Wipe Samples
- C. Sampling Strategy for Collection of Wipe Samples

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

(1) When placed in containers, wastewater should be left to evaporate.

(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 $\mu\text{g}/\text{ft}^2$) 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. Waste water placed into containers can be left to evaporate. *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/ft², if any sample is above 200 ug/ft², the range is not considered clean, the range will need to be re-washed until clearance samples are below 200 ug/ft².
- 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 335-15
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.

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.

3 November 2006

NGP 420-15

Section III
Special Abbreviations and Terms

This section contains no entries

ATTACHMENT 7

Door Scope of Work Including Measurements and Specifications

Alva Armory Door Scope of Work And Measurements

- Doors will be replaced with pre-hung Steelcraft Commercial Replacement Door Units (Specifications Attached) or equivalent;
- 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;
- Installation must be performed in accordance to requirements and instructions in attached specifications;

a. Exterior Doors

- Exterior doors will be replaced with galvanized, 16 gage, honeycomb core insulated doors;
- Hinges: As manufactured by Hagar or approved equal – Plain Bearing - Standard Weight 1279 NRP, 4 ½ X 4 ½ (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

- Interior doors will be replaced with non-galvanized, 18 gage, honeycomb core insulated doors;
- Hinges: As manufactured by Hagar or approved equal – Plain Bearing – Standard Weight 1279, 4 ½ X 4 ½ (Specification 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.

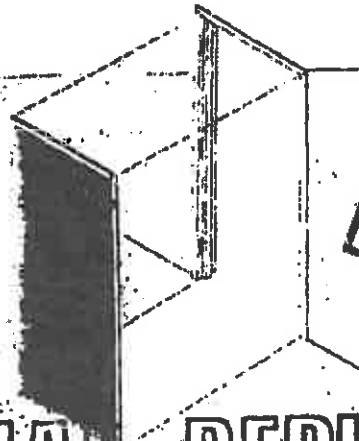
- **Door measurements are listed as approximate Width X Height; Contractor to field verify.**
 - **All removed doors will be properly disposed.**
 - **Specifications for replacement doors are attached.**
1. Remove two sets of double doors. Replace doors with pre-hung door unit. If visible damage occurs to painted finish of door frame during installation, door frame will be painted with a neutral colored primer.
 1. Door Measurement – 6' X 7'
 2. Door Measurement – 6' X 7'

Install a pre-hung



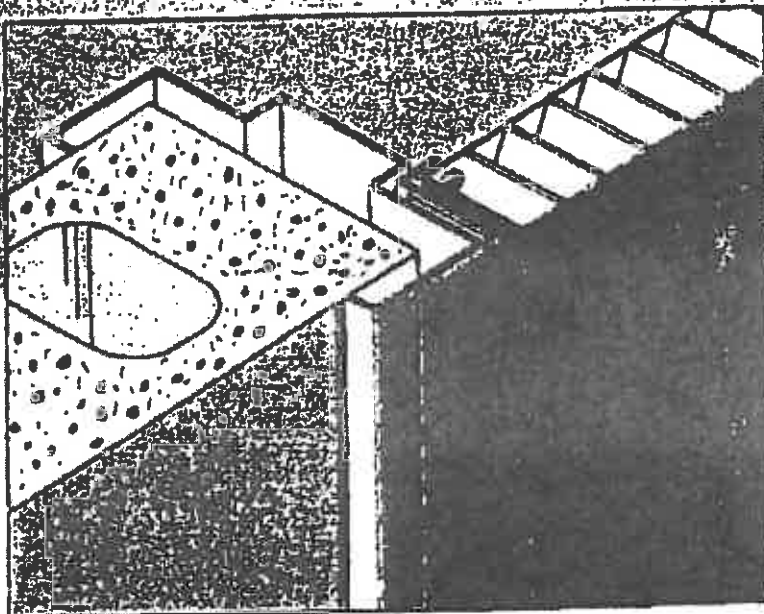
COMMERCIAL REPLACEMENT DOOR UNIT

UL LISTED
1 1/2 HR (B) LABEL
can be used in existing
non-listed or listed
steel frame.



New beauty
and security
for worn out doors.

The Steelcraft Commercial Replacement Unit is the only product of its kind specifically designed for the rehab market. Fits these nominal sizes: 2868, 3068, 3668, 3868, 4068, 2870, 3070, 3670, 3870, 4070 single, and 5468, 6068, 5470 and 6070 double doors.

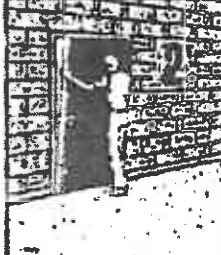


- Does not require removal of existing frame.
- Fits an "out-of-square" opening.
- Works with grouted or non-grouted frames.
- Installs quickly and easily.
- Includes rugged steel adapter frame.
- Permits door swing to be changed without major rework.
- Fills opening without re-mortising and filling hardware cutouts.
- Can be installed in existing steel or wood frame.
- Provides additional security.



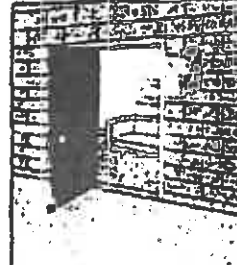
QUICK

1. Remove old door, hardware, sill and any other item(s) projecting into opening.



'N EASY

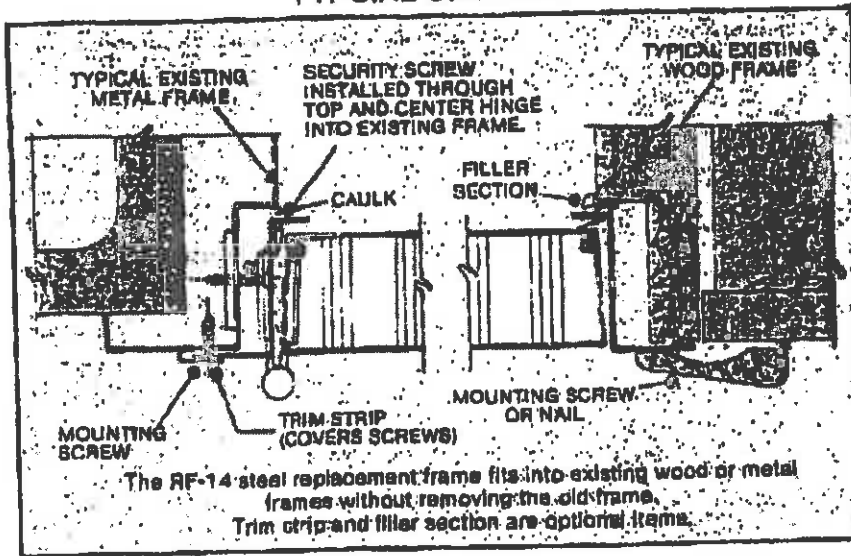
2. Set pre-hung unit into frame opening. Install mounting screws through face, cut bending and install security screws.



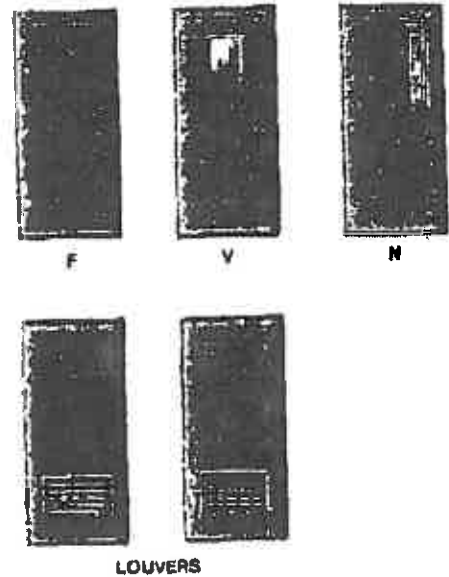
INSTALLATION

3. Mount hardware as required. Paint.

TYPICAL SECTION

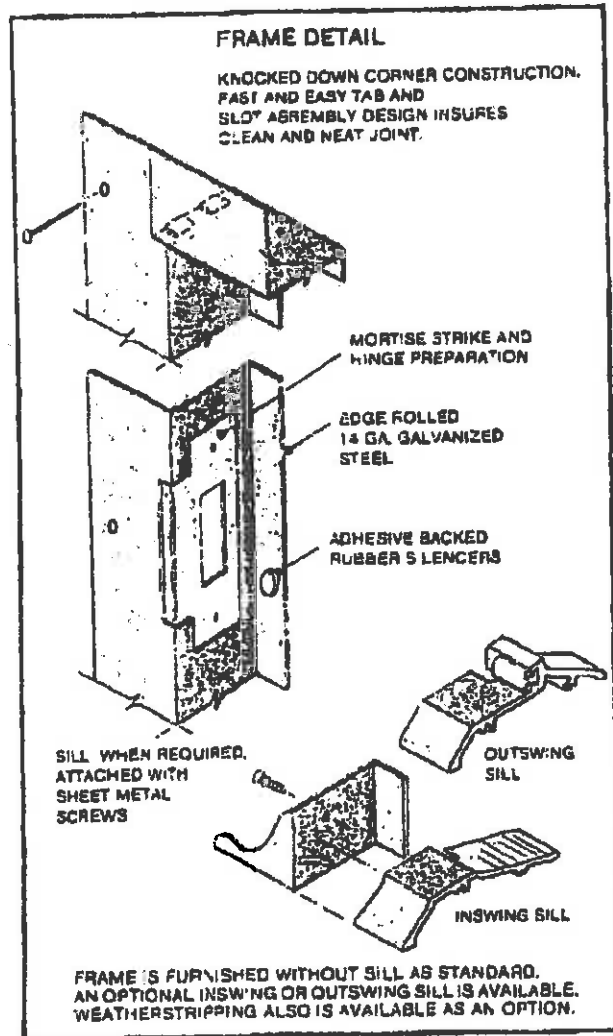


DESIGNS AND FINISHES AVAILABLE



LOUVERS

FRAME DETAIL



SPECIFICATIONS

Commercial Replacement Unit shall be supplied as a complete unit, consisting of 18 ga. door (RL-18) and 14 ga. frame (RF-14).

*Single openings shall be pre-hung, ready for quick and easy installation. Double openings shall be supplied as separate units (frame and two door leaves) not pre-hung.

Doors shall conform to the following:

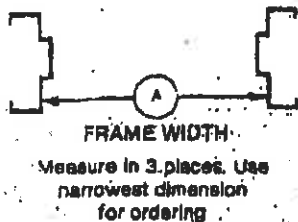
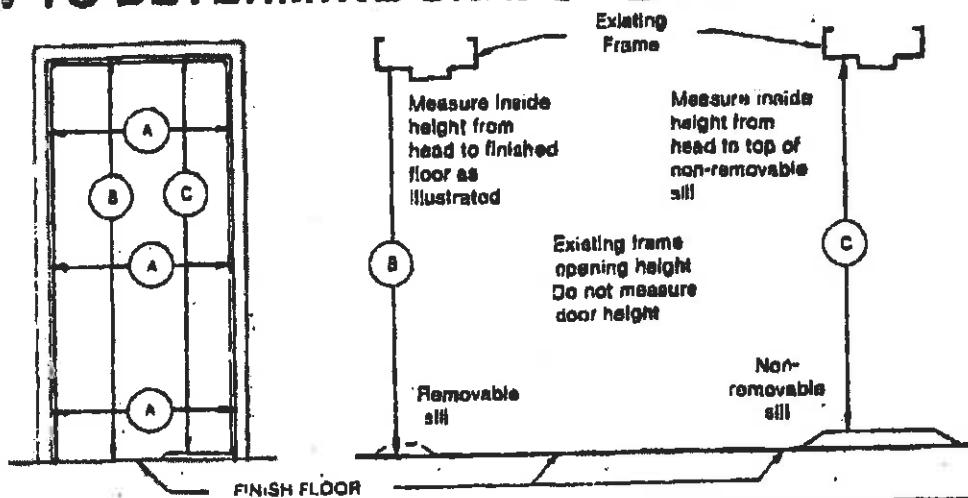
- Doors shall be as manufactured by Steelcraft, Cincinnati, Ohio, and designated as RL-18 (18 ga. steel).
- Doors shall be fabricated from cold rolled steel.
- Doors shall have 1/8" bevel in 2" on hinge and lock edges.
- Doors shall have vertical mechanical interlocking seams on hinges and lock edges with visible edge seam.
- Doors shall be provided with top and bottom inverted steel channels, spotwelded within the door.
- Doors shall be reinforced, stiffened and sound deadened with impregnated kraft honeycomb core completely filling the inside of the door and laminated to the inside faces of panels.
- Doors shall be mortised and adequately reinforced for all hardware.
- Doors shall be phosphatized and receive one coat of baked-on prime paint.

Frames shall conform to the following:

- Frames shall be as manufactured by Steelcraft, Cincinnati, Ohio, and designated as RF-14 (14 ga.).
- Frames shall be accurately formed from galvanized steel.
- Frames shall be furnished knocked down (KD). Corners shall have tabs for secure and easy interlocking of jambs to head at each corner.
- Frames shall be adequately reinforced for all hardware.
- Frames shall be supplied with adhesive backed rubber bumpers; three per strike jamb, two per double door frame head.
- Frames shall be phosphatized and receive one coat of baked-on prime paint.

*Single openings are designed to be pre-hung and installed. Units are supplied KD for pre-hanging at job site or by distributor.

HOW TO DETERMINE SIZE OF EXISTING FRAME



NOTE: ORDER UNITS BY NOMINAL SIZES. DO NOT ORDER BY ACTUAL DIMENSIONS.

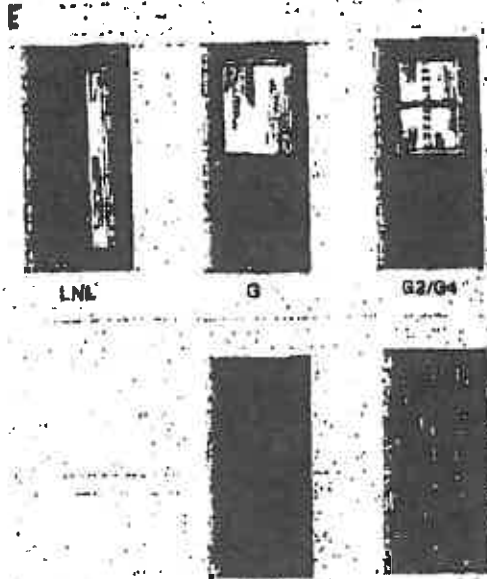
SIZE (Nominal)	FITS THESE EXISTING OPENINGS			
	A WIDTHS		B C HEIGHTS	
	MIN.	MAX.	MIN.	MAX.
2'6" x 6'8"	31 1/2"	32 3/4"	79 1/2"	80 1/2"
3'0" x 6'8"	35 1/2"	36 3/4"	79 1/2"	80 1/2"
3'6" x 6'8"	41 1/2"	42 3/4"	79 1/2"	80 1/2"
3'6" x 6'8"	48 1/2"	44 3/4"	79 1/2"	80 1/2"
4'0" x 6'8"	47 1/2"	48 3/4"	79 1/2"	80 1/2"
2'6" x 7'0"	31 1/2"	32 3/4"	83 1/2"	84 1/2"
3'0" x 7'0"	35 1/2"	36 3/4"	83 1/2"	84 1/2"
3'6" x 7'0"	41 1/2"	42 3/4"	83 1/2"	84 1/2"
3'6" x 7'0"	43 1/2"	44 3/4"	83 1/2"	84 1/2"
4'0" x 7'0"	47 1/2"	48 3/4"	83 1/2"	84 1/2"
3'4" x 6'8"	63 1/2"	64 1/2"	79 1/2"	80 1/2"
6'0" x 6'8"	71 1/2"	72 1/2"	79 1/2"	80 1/2"
5'4" x 7'0"	63 1/2"	64 1/2"	83 1/2"	84 1/2"
6'0" x 7'0"	71 1/2"	72 1/2"	83 1/2"	84 1/2"

*MAX. OPENING HEIGHT MAY BE EXCEEDED BY BLOCKING DOWN EXISTING OPENING.

TO HAND A DOOR — FACE IT FROM THE OUTSIDE OR KEYSIDE

LEFT HAND Hinges on Left Opens Inward 	RIGHT HAND Hinges on Right Opens Inward 	LEFT HAND REVERSE Hinges on Left Opens Outward 	RIGHT HAND REVERSE Hinges on Right Opens Outward
LEFT HAND Hinges on Left Opens Inward 	RIGHT HAND Hinges on Right Opens Inward 	LEFT HAND REVERSE Hinges on Left Opens Outward 	RIGHT HAND REVERSE Hinges on Right Opens Outward

Steelcraft
 3017 Blue Ash Road Cincinnati, Ohio 45222 513/745-6408



FINISH: PAINTED AND WOOD GRAIN FINISHES

HARDWARE

Replacement Units shall be prepared for the following hardware:

Hinges:

1-1/2" pair of 4-1/2" x 4-1/2" x .134" template hinges

Lock and Stricks:

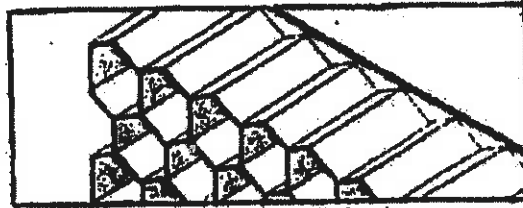
Government 168 (ANSI A115.2) cylindrical or Government 86 (ANSI A115.1) mortise lock with an ANSI A115.1 or 2 strikes

Consult distributor for other hardware preparations.

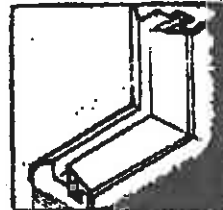
	NOMINAL SIZE	FRAME SIZE (FINISHED OPENING)		NET DOOR SIZE*	
		WIDTH	HEIGHT	WIDTH	HEIGHT
SINGLE	2868	31"	79 1/2"	30-13/16"	79W"
	3068	35"		34-13/16"	
	3668	41"		40-13/16"	
	3868	43"		42-13/16"	
	4068	47"	46-13/16"	82W"	
	2870	31"	30-13/16"		
	3070	35"	34-13/16"		
	3870	41"	40-13/16"		
3870	43"	42-13/16"	82W"		
4070	47"	46-13/16"			
PAIR	5468	63"	79 1/2"	30-13/16" & 31-13/16"	78W"
	6068	71"		34-13/16" & 35-13/16"	
	5470	63"	83 1/2"	30-13/16" & 31-13/16"	82W"
	6070	71"		34-13/16" & 35-13/16"	

*FOR PAIRS OF DOORS INACTIVE LEAF IS 1" WIDER THAN ACTIVE LEAF CONSULT DISTRIBUTOR FOR OTHER SIZES.

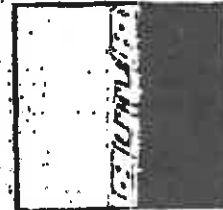
DOOR DETAILS



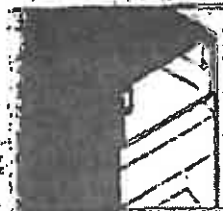
Full honeycomb core of phenolic resin-impregnated kraft paper reinforces the door every 1/4 inch, providing superior resistance to impact and assuring a flat surface.



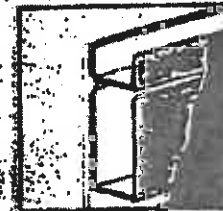
Aluminum glass trim (snap-in)



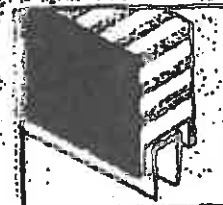
8-gage thick hinge reinforcement



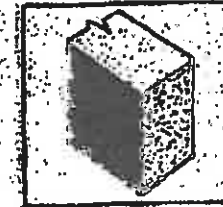
Snap-in steel top caps for exterior openings



Steel top and bottom reinforcing channels with gage closer reinforcement when required



Door bottom with double sweep when required



Insulated doors: one pound polystyrene core, 1 1/2 pound polyurethane core when required

PAIRS OF DOORS

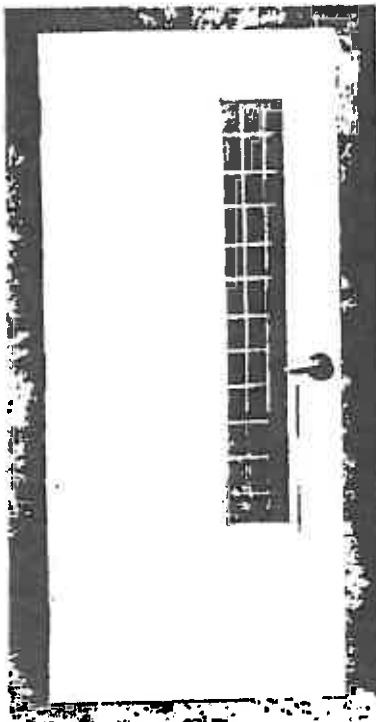


Designs shown may be combined for pairs of doors.

Pairs of doors consist of two leaves and a 14 ga. steel "Z" astragal field mounted to inactive leaf of pair. Inactive leaf may be secured with flush bolts or surface bolts.

Note: For pairs of doors, right hand will be active, unless specifically ordered.

L18 AND L16-SERIES HONEYCOMB DOORS



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.

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 Designer™ 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.

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 ²	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

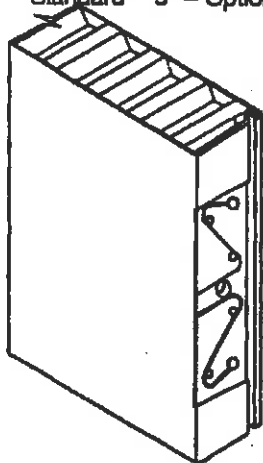
² Reinforcements for galvannealed doors are also galvannealed

³ Commercial quality carbon steel



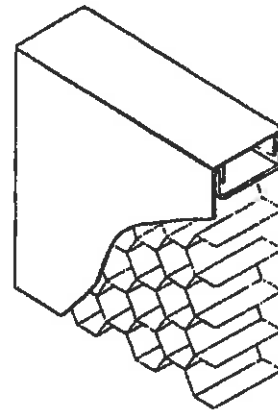
Details are subject to change without prior notice.

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

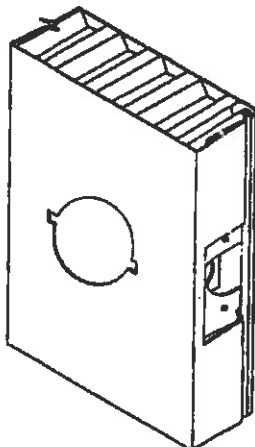


7 Gage Hinge Reinforcement

Optional Snap-In Top Cap

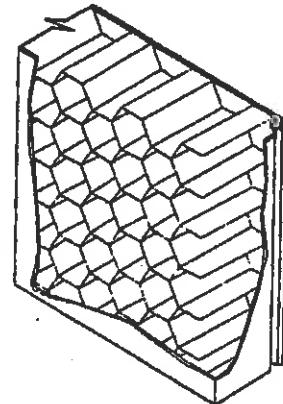


Lock Prep

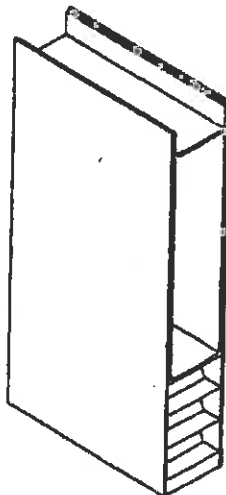


161 Cylindrical Lock shown

Rigid Honeycomb Core

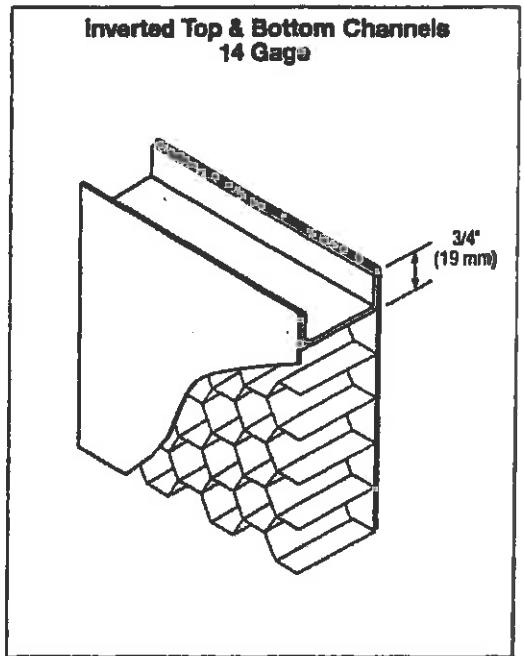
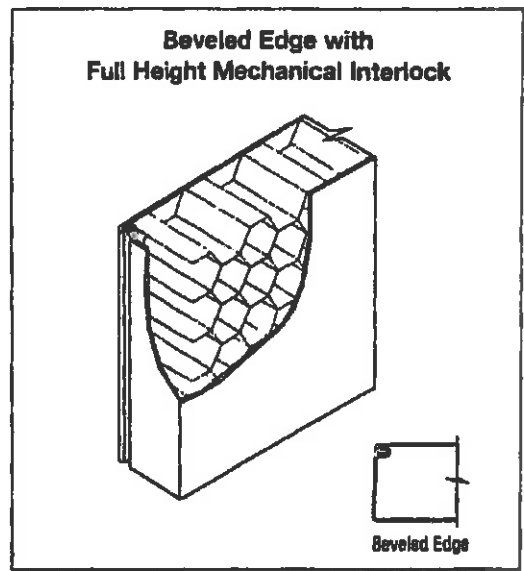
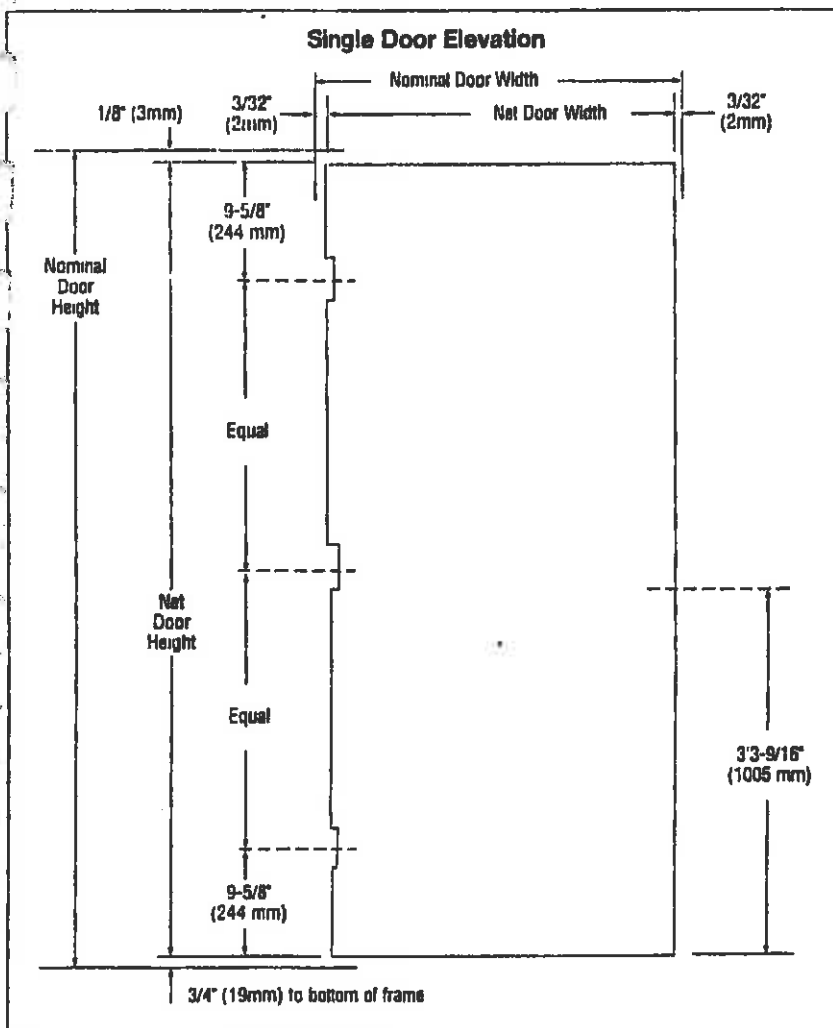


Optional 14 Gage Closer Reinforcement



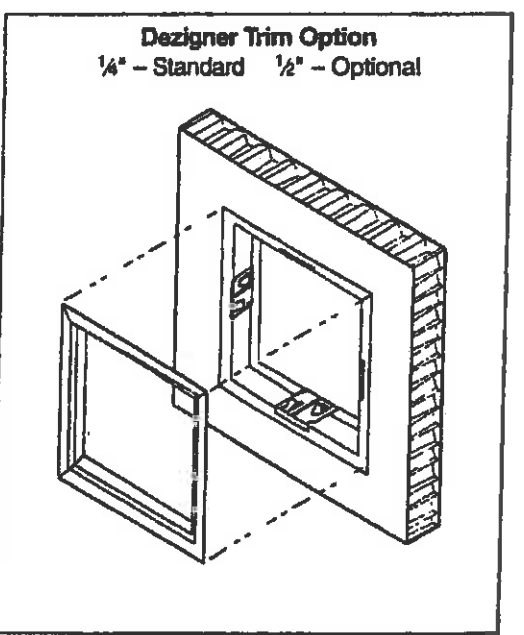
GENERAL NOTES:

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 4½" (124mm) strike are 161, 61L and 86.



CONSTRUCTION NOTES:

1. Doors are $1\frac{3}{4}"$ (45mm) thick.
2. Door opening size maximum:
Single door opening size $4'0" \times 10'0"$ (1219mm x 3048mm)
Double door opening size $8'0" \times 10'0"$ (2438mm x 3048mm)
3. Standard operating clearances (installed in frame):
Head = $\frac{1}{8}"$ (3mm) to bottom of head or transom panel
Hinge and lock side = $\frac{3}{32}"$ (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 $\frac{3}{8}"$ (9mm) lower.
6. Glass lites with Designer[®] 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
L18	3	1	Full Flush	Full height, visible mechanical interlocked edge
LF18	3	2	Seamless	L-Series with epoxy filled edge seams
LW18	3	2	Seamless	L-Series with welded edge seams

DOUBLE DOOR APPLICATIONS:

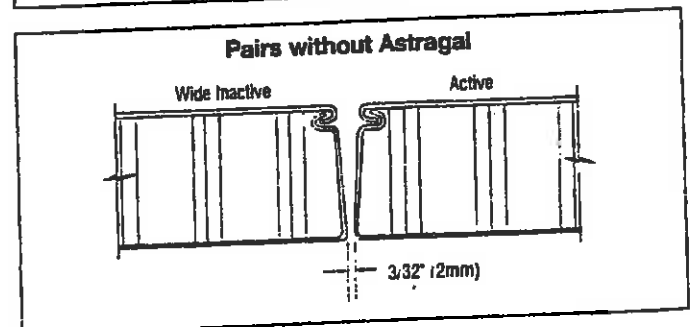
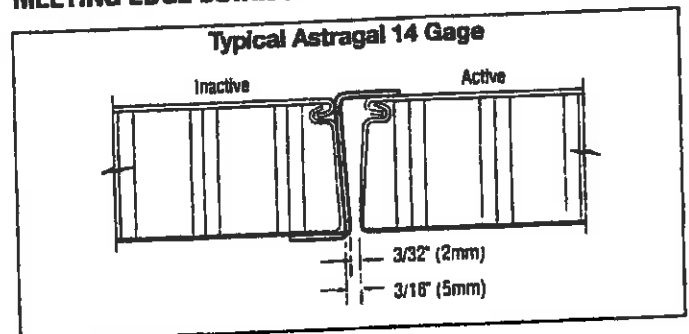
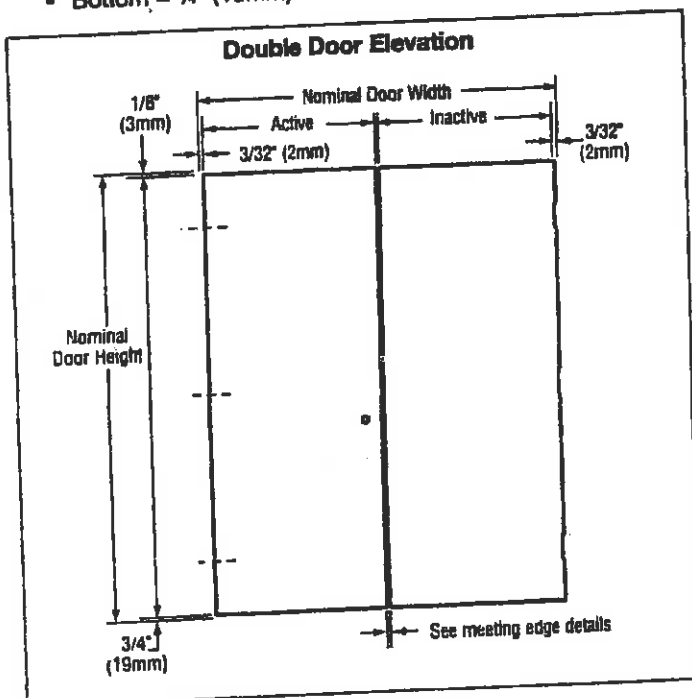
L-Series doors are available in double door elevations, with active and inactive leaves and an overlapping astragal.

- **Standard operating clearances (installed in frame):**
 - Head = $\frac{1}{8}$ " (3mm) to bottom of head or transom panel
 - Hinge side = $\frac{3}{32}$ " (2mm) to rabbet on jamb
 - Meeting edges = $\frac{3}{32}$ " (2mm) with or without astragal. For openings without an astragal, a wide inactive leaf is used.
 - Bottom = $\frac{3}{4}$ " (19mm) to bottom of frame

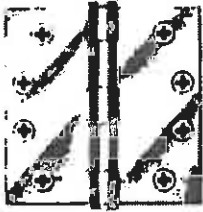
Meeting edges:

- 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 $\frac{3}{32}$ " (2mm).
- **Hardware preparations:** the inactive leaf can be prepared for hardware as specified.

MEETING EDGE DETAILS:



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

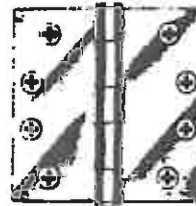
For use on medium weight doors or doors requiring low frequency service

- 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





Saddle Thresholds

All thresholds this page

MATERIALS & FINISHES

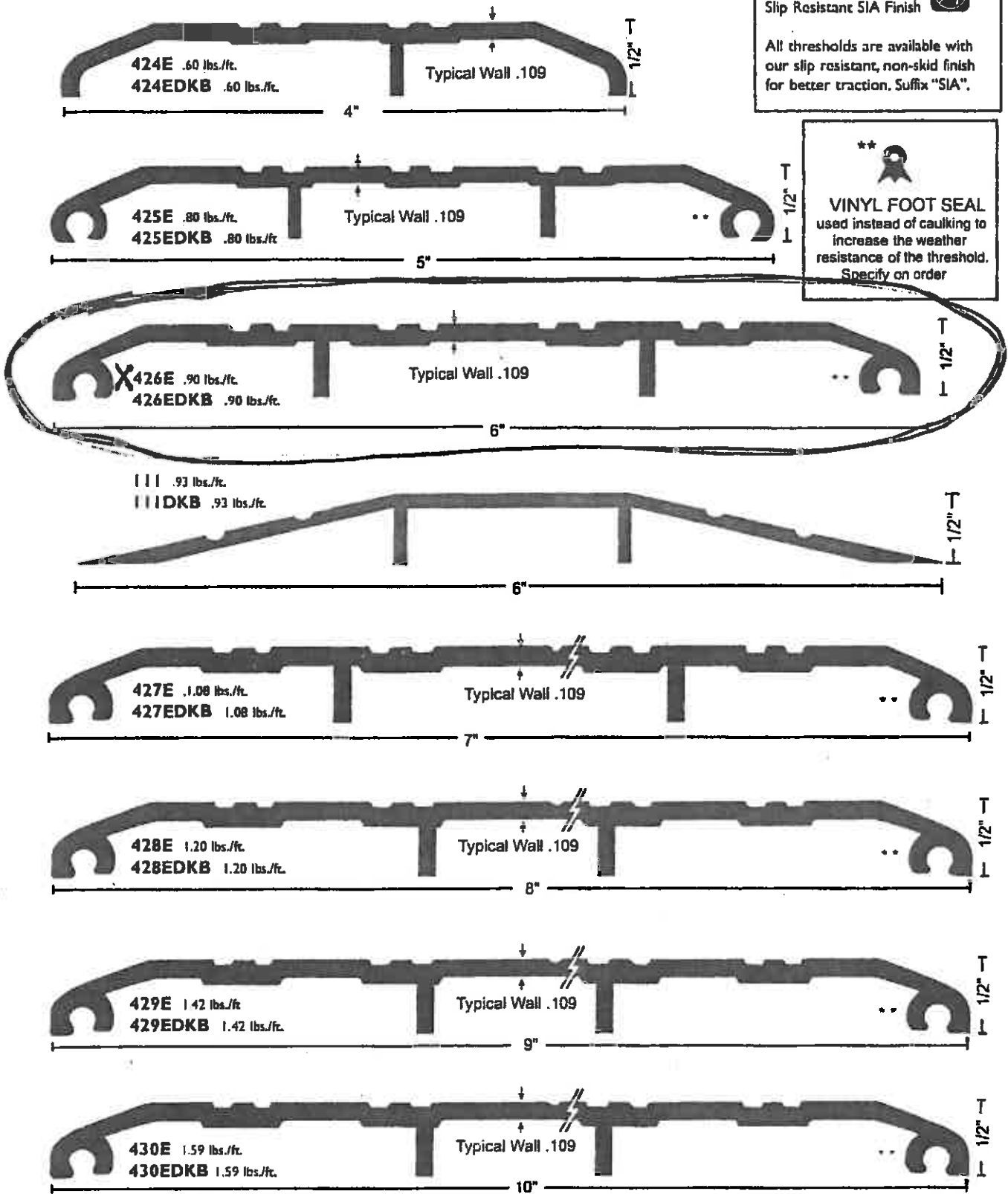
- Aluminum mill finish
- DKB - Aluminum dark bronze finish

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



NATIONAL GUARD PRODUCTS, INC.

Vinyl Seals

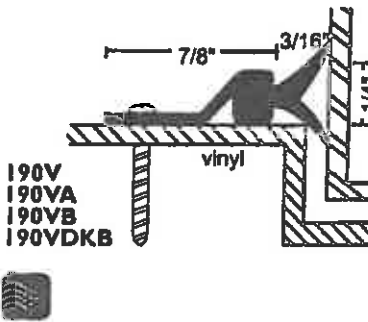
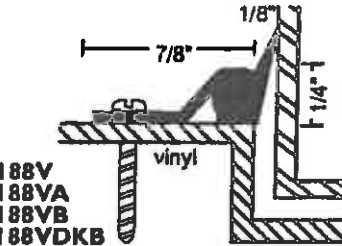
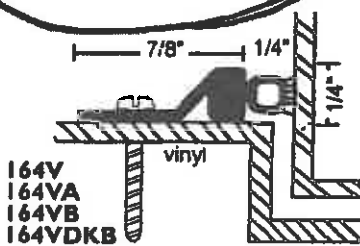
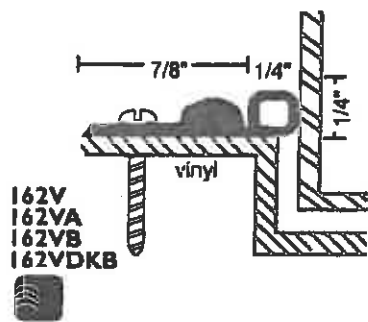
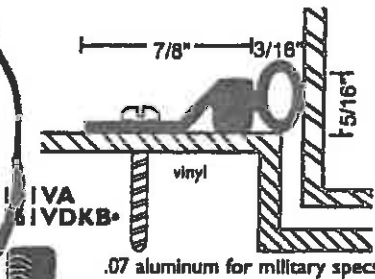
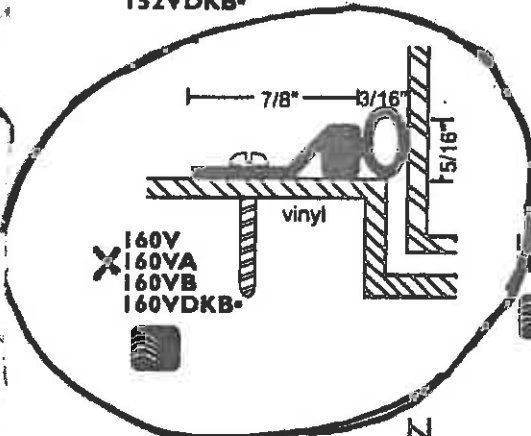
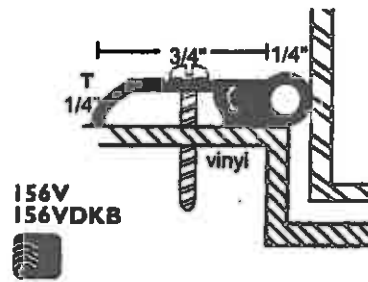
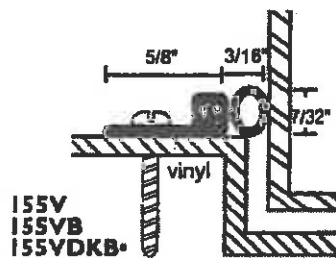
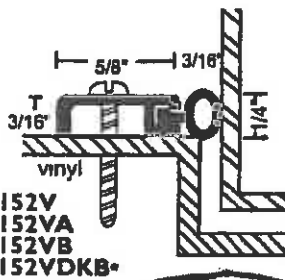
Properties:

- 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

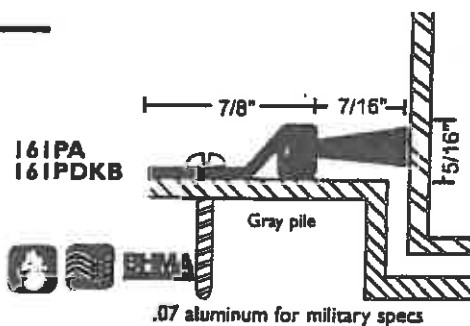
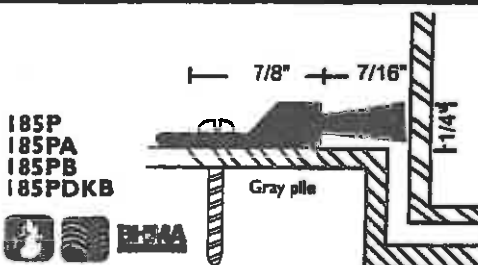
#6 x 3/4" Stainless Steel Sheet Metal Screws furnished
 Screw holes slotted for adjustment

All vinyl seals this section

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



Pile Seals



Vinyl Perimeter Seals

Pile Seals

Specifications

Handings

All D-Series lever locksets are non-handed.

Door Thickness

1½" to 2½" (41mm–54mm) standard including Vandlgard® functions.

See accessories (Page 12) for spacers required for 1¾" doors.

Backsets

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

Faceplates

Brass, bronze or stainless steel. 1½" x 2¼" (29mm x 57mm) square corner, beveled.

Lock Chassis

Zinc plated for corrosion resistance.

Latch Bolts

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.

Strikes

ANSI curved lip strike 1¼" x 4⅞" x 1⅜" 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

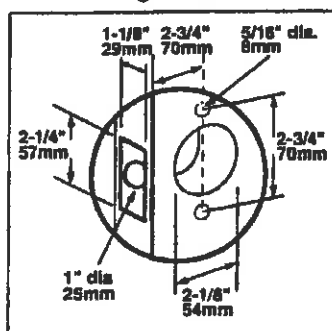
Interchangeable core and Primus® high security cylinders. Master keying, grand master keying and construction keying.

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)

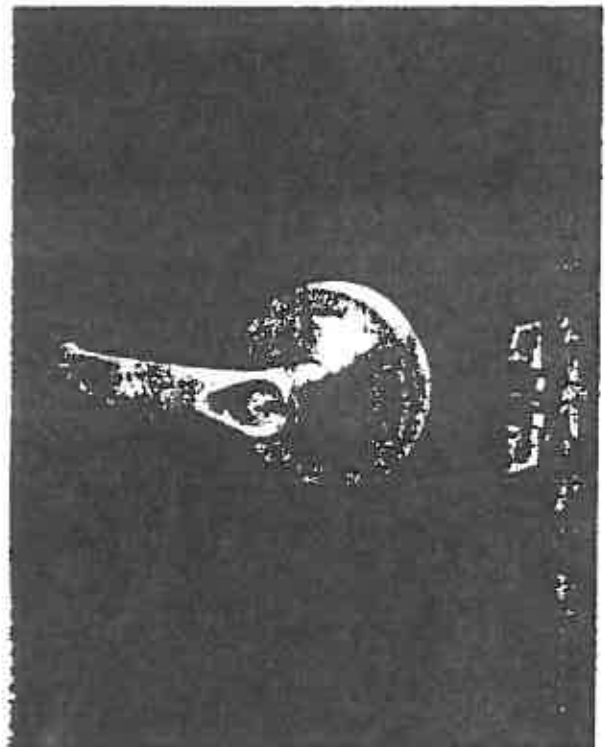
All levers with returns comply; levers return to within ½" of door face.

UL / cULs

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

606 ♿

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

626 ♿

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

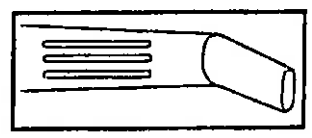
612 ♿

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

619 ♿



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

- 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

Only outside lever is knurled unless otherwise specified.

Not available with Omega trim

Functions

Non-Keyed Locks

SCHLAGE ANSI

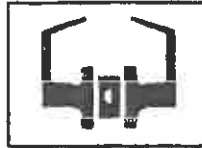
ND10S F75

Passage Latch
Both levers always unlocked.



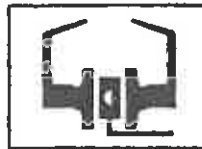
ND12D F89

Exit Lock
Outside lever always fixed. Inside lever always unlocked.



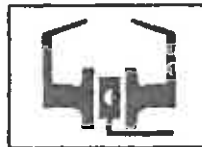
ND12DEL

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.



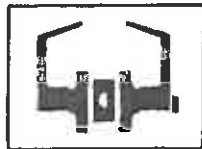
ND25D

Exit Lock
Blank plate outside. Inside lever always unlocked.



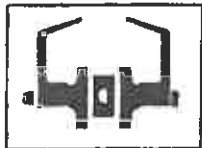
ND40S F76

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.

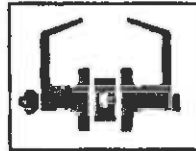


Keyed Locks

SCHLAGE ANSI

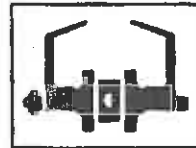
ND50PD F82

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



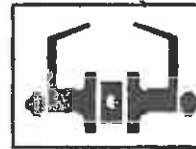
ND53PD F109

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.



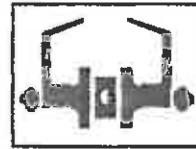
ND60PD F88

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.



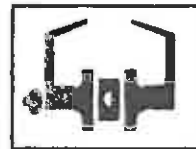
ND36PD F91

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



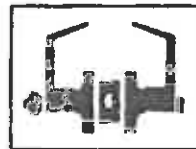
ND70PD F84

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:

1 $\frac{1}{8}$ " to 1 $\frac{3}{4}$ " (35 mm to 48 mm) standard.
2" (51 mm) to 2 $\frac{1}{2}$ " (64 mm) optional extended inside.

Backsets:

2 $\frac{3}{4}$ " (60 mm) standard. 2 $\frac{3}{4}$ " (70 mm), 3 $\frac{3}{4}$ " (95 mm) and 5" (127 mm) optional.

Front:

Steel. 1 $\frac{1}{8}$ " x 2 $\frac{1}{4}$ " square corner, beveled, for 2 $\frac{3}{4}$ " 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, $\frac{1}{2}$ " 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 1 $\frac{1}{8}$ " x 2 $\frac{3}{4}$ " (29 mm x 70 mm) x 1 $\frac{1}{8}$ " (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:

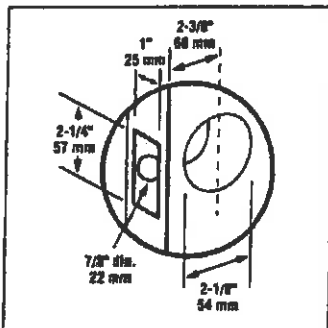
Interchangeable core and Primus® high security cylinders. Master keying, grand master keying, and construction keying.

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)

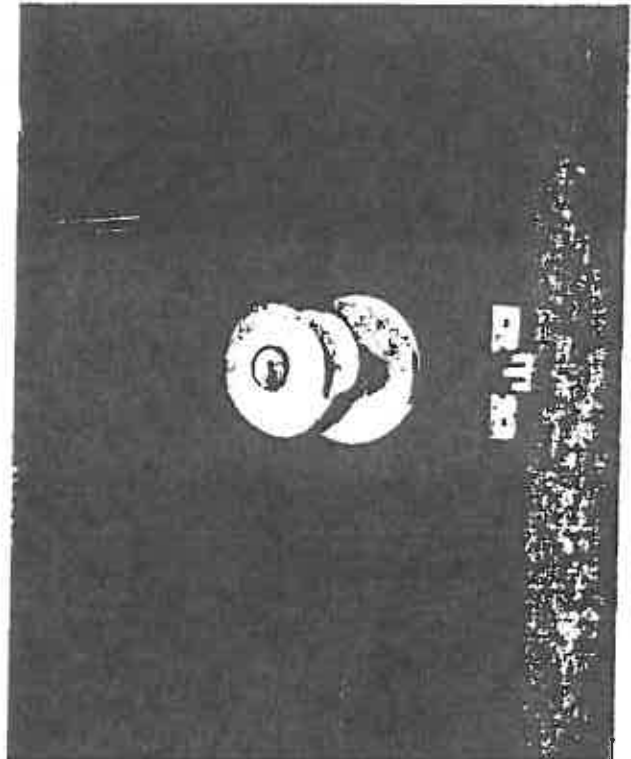
All levers with returns comply; levers return to within $\frac{1}{2}$ " of door face.

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.



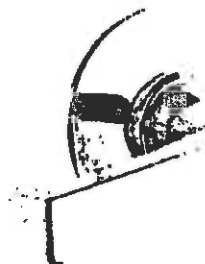
Designs & Finishes



609

GEORGIAN

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



605

LEVON

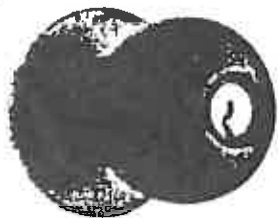
Symbol: LEV
Material: Pressure cast
zinc lever; wrought brass
or bronze rose
Finishes: 605, 612,
613, 626



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



613

ORBIT

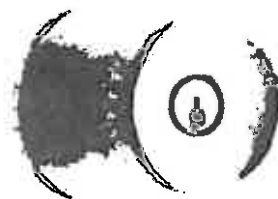
Symbol: ORB
Material: Wrought brass
or bronze
Finishes: 605, 606, 609,
610, 611, 612, 613,
616, 625, 626



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



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

Functions

ANSI A156.2 Series 4000 Grade 2

Non-Keyed Functions

SCHLAGE
A10S ANSI
F75

Passage Latch

Both knobs always unlocked.



A25D

Exit Lock

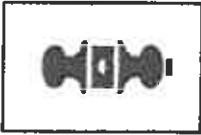
Blank plate outside. Inside knob always unlocked. Specify door thickness, 1 $\frac{3}{8}$ " or 1 $\frac{3}{4}$ ".



A30D F77

Patio Lock

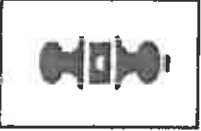
Push-button locking. Turning inside knob or closing door releases button, preventing lock-out.



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.

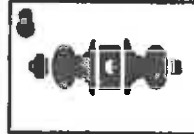


Keyed Functions

SCHLAGE ANSI
A53PD F109

Entrance Lock

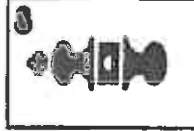
Turn/push-button locking: pushing and turning button locks outside knob requiring use of key until button is manually unlocked. Push-button locking: pushing button locks outside knob until unlocked by key or by turning inside knob.



A70PD F84

Classroom Lock

Outside knob locked and unlocked by key. Inside knob always unlocked.



A79PD

Communicating Lock

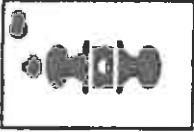
Locked or unlocked by key from outside. Blank plate inside.



A80PD F86

Storeroom Lock

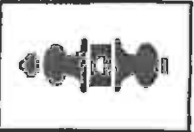
Outside knob fixed. Entrance by key only. Inside knob always unlocked.



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.

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 caulk 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:**

	<u>Minimum</u>	<u>Maximum</u>
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

FINAL ABATEMENT REPORTS

LEAD-IMPACTED DUST ABATEMENT REPORT

FOR

ALVA ARMORY

WOODS COUNTY, OKLAHOMA

Prepared for

Oklahoma Department of Environmental Quality

Land Protection Division

Dustin Davidson

707 North Robinson

Oklahoma City, Oklahoma 73102

Basin Work Order No. ES- 12-043

DCS Project No. 12243

Site Contact: Dustin Davidson

Field Team Lead: Rick Williams

Prepared by

Basin Environmental and Safety Technologies

325 N Portland Ave

Oklahoma City, OK 73107

(405) 232-5737

August 17, 2012

EXECUTIVE SUMMARY

This is the final report describing the Alva Armory Lead Remediation performed for the Oklahoma Department of Environmental Quality (ODEQ) at the Alva Armory located in Woods County, Oklahoma. Basin Environmental and Safety Technologies (Basin) was contracted by the Land Protection Division of the Oklahoma Department of Environmental Quality (ODEQ) to conduct lead dust remediation activities at the former National Guard Armory in Alva, Oklahoma. This work was performed to provide for unrestricted, safe re-use of the storage areas, classrooms and offices at this facility. Abatement activities included extensive High Efficiency Particulate Air (HEPA) vacuuming, wet wiping, wet mopping, and encapsulation of leaded dust located within the armory. All abatement activities were followed by extensive post-abatement clearance dust sampling and analysis. Abatement and clearance activities took place from June 2012 to July 2012. All remediation processes were performed under the guidance of the ODEQ and in accordance with the Occupational Safety and Health Administration's (OSHA), 29 CFR 1926.62, "Lead in Construction Interim Final Standard" and the National Guard Bureau's "Guidelines and Procedures for Rehabilitation and Conversion of Indoor Firing Ranges."

Included in this closure report is a detailed summary of work, a copy of the post-remediation confirmation sampling, waste manifests and site photos. All post remediation confirmation clearance sampling was performed by Enercon Services, Inc. All post-sealant wipe sample results indicated and confirmed to meet the Environmental Protection Agency (EPA) and Department of Housing and Urban Development (HUD) standards for lead dust.

This final report was prepared by Basin under Verbal Tasking from Dustin Davidson. The ODEQ Site Contact was Dustin Davidson, and the Basin Team Leader was Rick Williams.

- The ODEQ did not provide final approval of this report prior to the completion date of the work assignment. Therefore, Basin Environmental and Safety Technologies has submitted this report absent ODEQ's approval.

- ODEQ has provided final approval of this report. Therefore, Basin Environmental and Safety Technologies has submitted this report with ODEQ approval.

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ATTACHMENTS

Attachment A	Copy of Analytical Results for Dust
Attachment B	Copy of Hazardous & Non Hazardous Waste Manifest
Attachment C	Site Photos
Attachment D	Site Floor Plan

1. INTRODUCTION

Basin Environmental and Safety Technologies (Basin) was contracted by ODEQ to provide lead impacted dust and door replacement services at the Alva Armory located at 995 Thunderbird Road, City of Alva, Woods County, Oklahoma. The abatement activity was initiated by ODEQ as part of the Site Cleanup Assistance Program (SCAP) and the Armory Cleanup Program. The EPA and ODEQ target clearance levels for lead in dust and the ODEQ clearance levels for IFRs were utilized for this project (See Attachment A for all analytical results). The clearance level for leaded dust on floors is 40 micrograms per square foot (ug/ft^2). The clearance level for lead dust on floors, walls and ceilings in the IFR post-abatement is $200 \text{ ug}/\text{ft}^2$, post-lockdown treatment clearance levels for the IFR are $40 \text{ ug}/\text{ft}^2$. (See Attachment B for hazardous waste manifests).

All workers were trained, fit tested, and medically cleared to wear respirators in accordance with the 29 CFR 1910.134. Medical exams are performed annually under the supervision of a licensed physician.

Throughout the duration of the project, every change in work procedure was preceded by a tailgate safety meeting. Level C PPE (Tyvek Coveralls, Scott or 3M full-face respirator masks with appropriate P100 HEPA filters, and nitrile chemical resistant gloves) and Level D PPE were utilized throughout the project dependant upon the hazards assessment conducted on each process.

Initial wet wiping and mopping was conducted using trisodium phosphate (TSP), lint free mop heads and rags. Concurrent and final cleaning was performed using “Spic & Span” and Swiffer wet mops.

Throughout Remediation the following engineering and administrative controls and waste stream management practices were followed:

- Poly sheeting was used as critical barriers on floors and entry ways to minimize cross contamination.
- Booties were worn by all personnel and changed entering and exiting clean areas.

- Project areas were delineated as dirty or clean dependant upon the processes and hazards present.
- Media collected from the IFR, HEPA Vacuums and appropriate cleaning materials was double bagged in 6 mil poly drum liners, labeled and placed in the stationed roll off box awaiting profile and disposal in an approved hazardous waste landfill.

1.1 REPORT FORMAT

This report has been organized as follows:

- Section 1 – Introduction
- Section 2 – Site Background
- Section 3 – Abatement Activities & Variance
- Section 4 – Confirmation and Clearance Sampling

2. SITE BACKGROUND

Information regarding the site location, description, and history is included in this section.

2.1 SITE LOCATION AND DESCRIPTION

The Alva Armory site is located at 995 Thunderbird Road, Alva, Woods County, Oklahoma. The armory is a brick and concrete constructed single story building with a concrete slab foundation and asphalt composite flat roof and metal dome roof. Several types of rooms are present within the building including offices, restrooms, meeting rooms, and the IFR. The flooring of the facility is concrete. The facility was not being ventilated at the time of the abatement activity (See Attachment C for facility photos and Attachment D for a floor plan).

2.2 BACKGROUND INFORMATION

This project is part of the ODEQ's SCAP & Armory Cleanup Program. This program remediates abandoned hazardous waste sites and closed armories throughout the state of Oklahoma. The primary hazard associated with armories is the lead associated with indoor firing ranges. Because this dust is metallic lead produced by the ammunitions fired in the IFR (not lead compounds as in lead-based paint) it can be difficult to abate.

3. ABATEMENT ACTIVITIES

On June 18th, Basin mobilized to the armory with a Lead Abatement Supervisor and three (3) abatement personnel. Each employee was trained, made familiar with the statement of work and Environmental, Health, & Safety (EH&S) aspects of the project with emphasis on engineering controls, administrative controls, and personal protective equipment (PPE) to minimize employee exposure and cross-contamination. Basin workers began work in level C PPE, installing a double wall poly barrier to the entrance door that divide the Indoor Firing Range to the drill floor. Workers then began wet wiping trash and general debris inside the firing range and carrying out to the staging area on the drill floor. A roll off box from Basin Environmental was staged outside of the building on the east side near the bay door entry to the drill floor. It was then lined with re-enforced poly preparing it for waste. Workers then removed the porous acoustic tiles from the walls of the IFR and placed them in the lined hazardous waste roll off. HEPA vacuums and wet mopping was conducted on all surfaces, including the walls floors and ceiling of the IFR and . Basin workers repeated cleaning procedures on the entire IFR and floor areas of the entire building until demobilization on July 19, 2012.

3.1 VARIANCE

Clearance sampling results in room 10 (IFR) behind the refraction wall after initial cleaning came back >200ug/sf. After visual inspection, lead bullet fragments were found imbedded into the grout. Basin then applied BASF approved construction grout 12 feet up the back wall and 13 feet out on both walls 12 feet high. After clearance samples came back below detection limits(<16ug/sf) Basin then applied a coat of primer and locked down the entire IFR with 20 mil. approved encapsulate.

4. CONFIRMATION AND CLEARANCE SAMPLING

The Oklahoma Department of Environmental Quality contracted Enercon Services Inc. as a third-party partner for clearance sampling. The results from these sampling events can be found in (Attachment A).

ATTACHMENT A



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

Environmental Chemistry Analysis Report

QuanTEM Set ID: 210129
Date Received: 07/11/12
Received By: Sherrie Leftwich
Date Sampled:
Time Sampled:
Analyst: BM
Date of Report: 7/11/2012

Client: State of Oklahoma
 DEQ Land Protection
 Attn: Dustin Davidson
 707 N. Robinson
 Oklahoma City, OK 73102
Acct. No.: B486
Project: Alva Armory
Location: Alva, Oklahoma
Project No.: N/A

AIHA ID: 101352

QuanTEM ID	Client ID	Matrix	Parameter	Results	Reporting Limits	Units	Date/Time Analyzed	Method
001	1	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
002	2	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
003	3	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
004	4	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
005	5	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
006	6	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
007	7	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
008	8	Wipe	Lead	35.4	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
009	9	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
010	10	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
011	11	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
012	12	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
013	13	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
014	14	Wipe	Lead	124	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
015	15	Wipe	Lead	1,470	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
016	16	Wipe	Lead	39.3	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
017	17	Wipe	Lead	76.6	16	ug/sq. Ft.	07/11/12 15:00	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: 210129
Date Received: 07/11/12
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Client: State of Oklahoma
 DEQ Land Protection
 Attn: Dustin Davidson
 707 N. Robinson
 Oklahoma City, OK 73102
Acct. No.: B486
Project: Alva Armory
Location: Alva, Oklahoma
Project No.: N/A

AIHA ID: 101352

QuanTEM ID	Client ID	Matrix	Parameter	Results	Reporting Limits	Units	Date/Time Analyzed	Method
018	18	Wipe	Lead	510	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
019	19	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
020	20	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
021	21	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
022	22	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
023	23	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
024	24	Wipe	Lead	86.9	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
025	25	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
026	26	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
027	27	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
028	28	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
029	29	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
030	30	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
031	31	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
032	32	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
033	33	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
034	34	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/11/12 15:00	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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Quantem Set ID: 210129
Date Received: 07/11/12
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Time Sampled:
Analyst: BM
Date of Report: 7/11/2012

Client: State of Oklahoma
DEQ Land Protection
Attn: Dustin Davidson
707 N. Robinson
Oklahoma City, OK 73102
Acct. No.: B486
Project: Alva Armory
Location: Alva, Oklahoma
Project No.: N/A

AIHA ID: 101352

Quantem ID	Client ID	Matrix	Parameter	Results	Reporting Limits	Units	Date/Time Analyzed	Method
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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: 10157
Test: Lead

Date: 7/11/2012
Matrix: Wipe

Lab Number: 210129
Approved By: Benton Miller
Date Approved: 7/11/2012

Notes:

Blank Data:

Type of Blank	Blank Value
FCB	0
ICB	0
Matrix Blank	0

Standards Data:

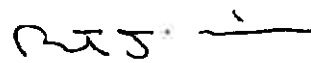
Standard	Low Limit	Obtained	High Limit
CCV	4.5	5	5.5
FCV	4.5	5.2	5.5
ICV	0.9	1	1.1
RLVS	0.256	0.348	0.384

Duplicate Data:

Recovery Data:

Sample Number	Result	Spike Level	Result + Spike	% Recovery	Dup. Result + Spike	% Dup. Recovery	% Spike RPD
MS-W2	0.000	5.178	5.623	108.6	5.572	107.6	0.9
MS-W1	0.000	5.167	5.324	103.0	5.853	113.3	9.5

Authorized Signature: _____



Benton Miller, Analyst



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. 210129
 Accept Reject

Report Results: One box
 Quantem Website
 Other

Project Information
 Project Name: Alva Army
 Project Location: Alva, Oklahoma
 Project ID:

Contact Information
 Company: DEQ
 Contact: Dustin Davidson
 Account #: _____
 Phone: 405-702-5115
 Cell Phone: 405-317-4292
 E-mail: dustindavidson@deq.ok.gov

Sampled By: Dustin Davidson Date: 7/10/12
 Relinquished By: Dustin Davidson Date & Time: 7/11/12 11:00 AM
 Received By: J. Mueller Date & Time: 7/11/12 11:02

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 (<input checked="" type="checkbox"/> ONE box only)					Sample Matrix Codes					
						Pb	Pb	Pb	Pb	Pb	Pb	Pb	Pb	Pb	Pb		Pb				
1					C																
2				12" X 12"																	
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					

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



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LEAD CHAIN OF CUSTODY

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For Lab Use Only.
 Lab No. 210229
 Accept Reject

LEGAL DOCUMENT - PLEASE PRINT LEGIBLY

Contact Information		Project Information	
Company: <u>DEQ</u>	Phone: <u>405-702-5115</u>	Project Name: <u>Alva Army</u>	Report Results: <input checked="" type="checkbox"/> (one box)
Contact: <u>Dustin Davidson</u>	Cell Phone: <u>405-317-4292</u>	Project Location: <u>Alva, OK</u>	Quantem Website: _____
Account #: _____	E-mail: <u>dustin.davidson@deq.ok.gov</u>	Project ID: _____	Other: _____

Sampled By: <u>Dustin Davidson</u>	Date: <u>7/10/12</u>
REINQUIRED BY: <u>Dustin Davidson</u>	DATE & TIME: <u>7/10/12 11:00am Prof. Off</u>
VIA: _____	RECEIVED BY: _____
DATE & TIME: _____	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					Units (ONE box only)					Sample Matrix Codes	
						Pb	mg/l	mg/ft ²	µg/m ²	mg/cm ²	Pb	mg/l	mg/ft ²	µg/m ²	mg/cm ²		
1	13			12" x 12"	C	X											
2	14																
3	15																
4	16																
5	17																
6	18																
7	19																
8	20																
9	21																
10	22																
11	23																
12	24																

TURNAROUND TIME

Same Day	
24 - Hour	X
3 - Day	
5 - Day	



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 (800) 822-1650 • (405) 755-7272 • Fax: (405) 755-2058

LEGAL DOCUMENT - PLEASE PRINT LEGIBLY

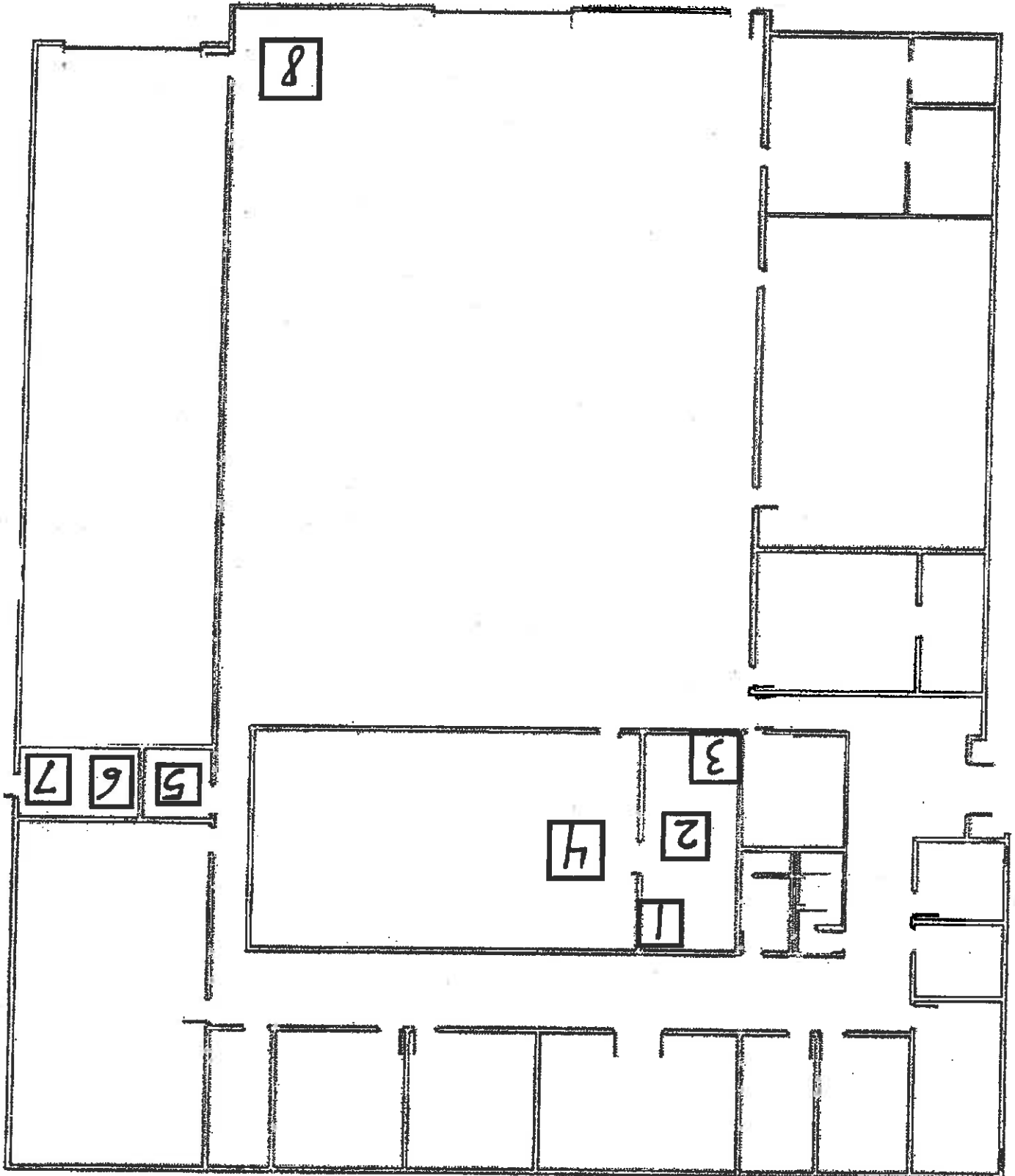
Contact Information Company: <u>DEA</u> Contact: <u>Dustin Davidson</u> Account #: _____ Sampled By: <u>Dustin Davidson</u> Name: <u>Dustin Davidson</u> Date: <u>7/10/17</u>		Project Information Project Name: <u>Alva Academy</u> Project Location: <u>Alva, OK</u> Project ID: _____	
Phone: <u>405-702-5115</u> Cell Phone: <u>405-313-4292</u> E-mail: <u>davidson@deatomb.com</u>		Report Results: <input checked="" type="checkbox"/> One box <input type="checkbox"/> Other	

RELINQUISHED BY	DATE & TIME	VIA	RECEIVED BY	DATE & TIME
<u>Dustin Davidson</u>	<u>7/11/17 11:00am</u>	<u>Post</u>	<u>066</u>	

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 (<input checked="" type="checkbox"/> ONE box only)					Sample Matrix Codes
							Pb	mg / l	µg / ft ²	µg / m ²	mg / cm ²	
1	25			12" X 12"	C	X		X				A
2	26											B
3	27											C
4	28											D
5	29											E
6	30											
7	31											
8	32											
9	33											
10	34											
11												
12												

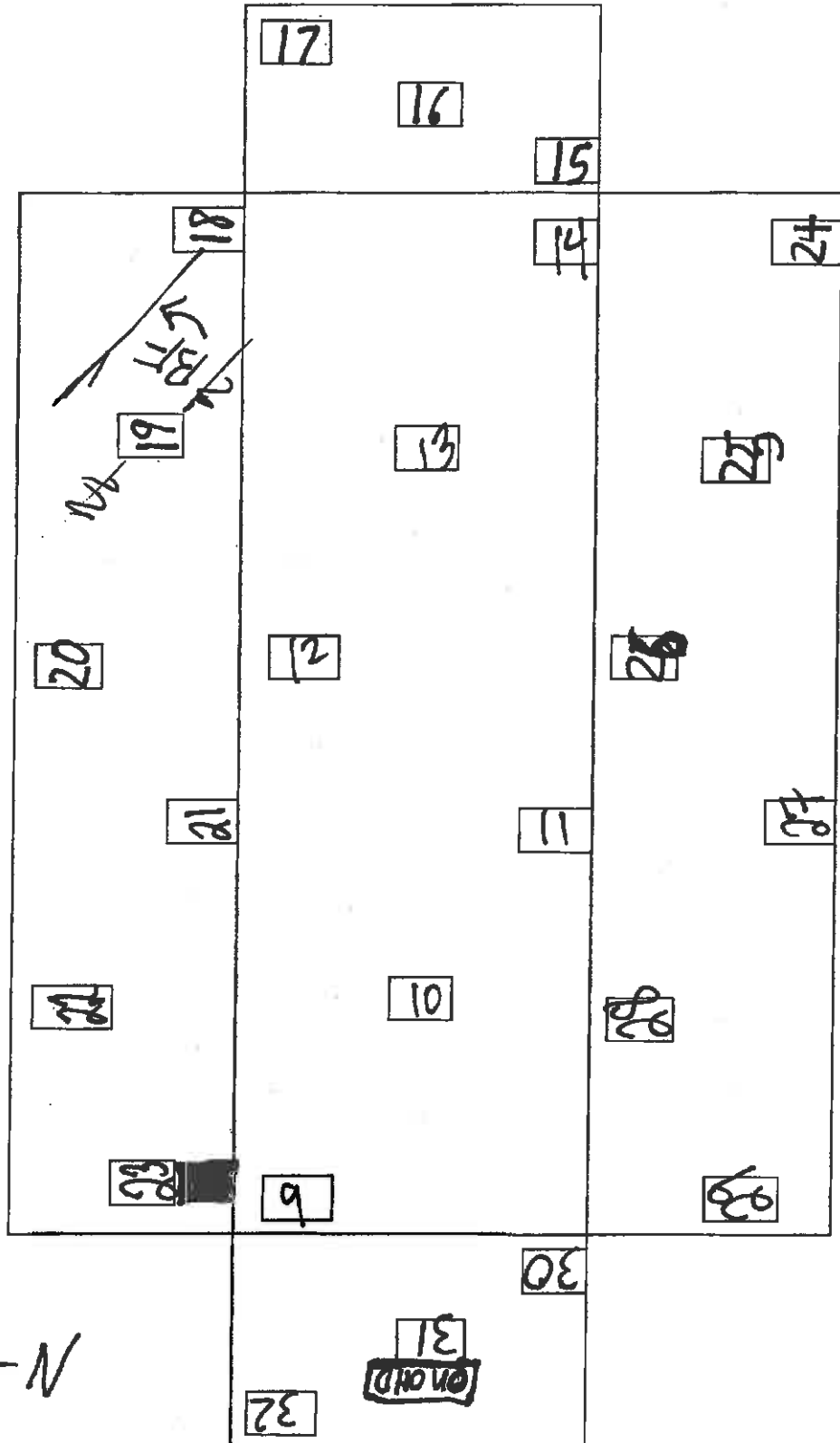
TURNAROUND TIME	
Same Day	
24 - Hour	X
3 - Day	
5 - Day	



210129

Alva Armory

July 10, 2012



← N

210129



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

Environmental Chemistry Analysis Report

QuanTEM Set ID: 210750
Date Received: 07/25/12
Received By: Joanna Mueller
Date Sampled:
Time Sampled:
Analyst: BM
Date of Report: 7/26/2012

Client: State of Oklahoma
DEQ Land Protection
Attn: Dustin Davidson
707 N. Robinson
Oklahoma City, OK 73102
Acct. No.: B486
Project: Alva Armory
Location: Alva, OK
Project No.: N/A

AIHA ID: 101352

QuanTEM ID	Client ID	Matrix	Parameter	Results	Reporting Limits	Units	Date/Time Analyzed	Method
001	1	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/26/12 9:30	W NIOSH 9100
002	2	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/26/12 9:30	W NIOSH 9100
003	3	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/26/12 9:30	W NIOSH 9100
004	4	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/26/12 9:30	W NIOSH 9100
005	5	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/26/12 9:30	W NIOSH 9100
006	6	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/26/12 9:30	W NIOSH 9100
007	7	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/26/12 9:30	W NIOSH 9100
008	8	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/26/12 9:30	W NIOSH 9100
009	9	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/26/12 9:30	W NIOSH 9100
010	10	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/26/12 9:30	W NIOSH 9100
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012	12	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/26/12 9:30	W NIOSH 9100
013	13	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/26/12 9:30	W NIOSH 9100
014	14	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/26/12 9:30	W NIOSH 9100
015	15	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/26/12 9:30	W NIOSH 9100
016	16	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/26/12 9:30	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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QuanTEM Set ID: 210750
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Time Sampled:
Analyst: BM
Date of Report: 7/26/2012

Client: State of Oklahoma
DEQ Land Protection
Attn: Dustin Davidson
707 N. Robinson
Oklahoma City, OK 73102
Acct. No.: B486
Project: Alva Armory
Location: Alva, OK
Project No.: N/A

AIHA ID: 101352

QuanTEM ID	Client ID	Matrix	Parameter	Results	Reporting Limits	Units	Date/Time Analyzed	Method
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Authorized Signature: _____

Benton Miller, Analyst

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

Supplemental Report QAQC Results

QA ID: 10196
Test: Lead

Date: 7/26/2012
Matrix: Wipe

Lab Number: 210750
Approved By: Benton Miller
Date Approved: 7/26/2012

Notes:

Blank Data:

Type of Blank	Blank Value
FCB	0
ICB	0
Matrix Blank	0

Standards Data:

Standard	Low Limit	Obtained	High Limit
CCV	4.5	4.8	5.5
FCV	4.5	5.3	5.5
ICV	0.9	1	1.1
RLVS	0.256	0.297	0.384

Duplicate Data:

Recovery Data:

Sample Number	Result	Spike Level	Result + Spike	% Recovery	Dup. Result + Spike	% Dup. Recovery	% Spike RPD
MS-W1	0.000	5.230	5.345	102.2	5.396	103.2	1.0

Authorized Signature: _____


Benton Miller, Analyst



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LEGAL DOCUMENT - PLEASE PRINT LEGIBLY

For Lab Use Only

Lab No. 210750

Report Results: Accept Reject

Quantem Website

Other

Project Information

Project Name: Alva Armory

Project Location: Alva OK

Project ID:

Contact Information

Company: DEQ

Contact: Dustin Davidson

Account #: 112511

Sampled By: Dustin Davidson

Phone: 405-702-5115

Cell Phone: 405-317-4292

E-mail: dustin.davidson@deq.ok.gov

RELINQUISHED BY: Dustin Davidson

DATE & TIME: 7/26/12

VIA: Drop Off

RECEIVED BY: G. Muller

DATE & TIME: 7/26/12 10:24

No.	Sample ID (10 Characters Max)	Sample Description	Volume (Liters)	Volume Area (Length x Width)	Sample Matrix (see matrix code box)	Analysis					Units <input checked="" type="checkbox"/> ONE: box only	Sample Matrix Codes	
						Pb	Pb	Pb	Pb	Pb			
1	1-16			12" X 12"	CX								
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													

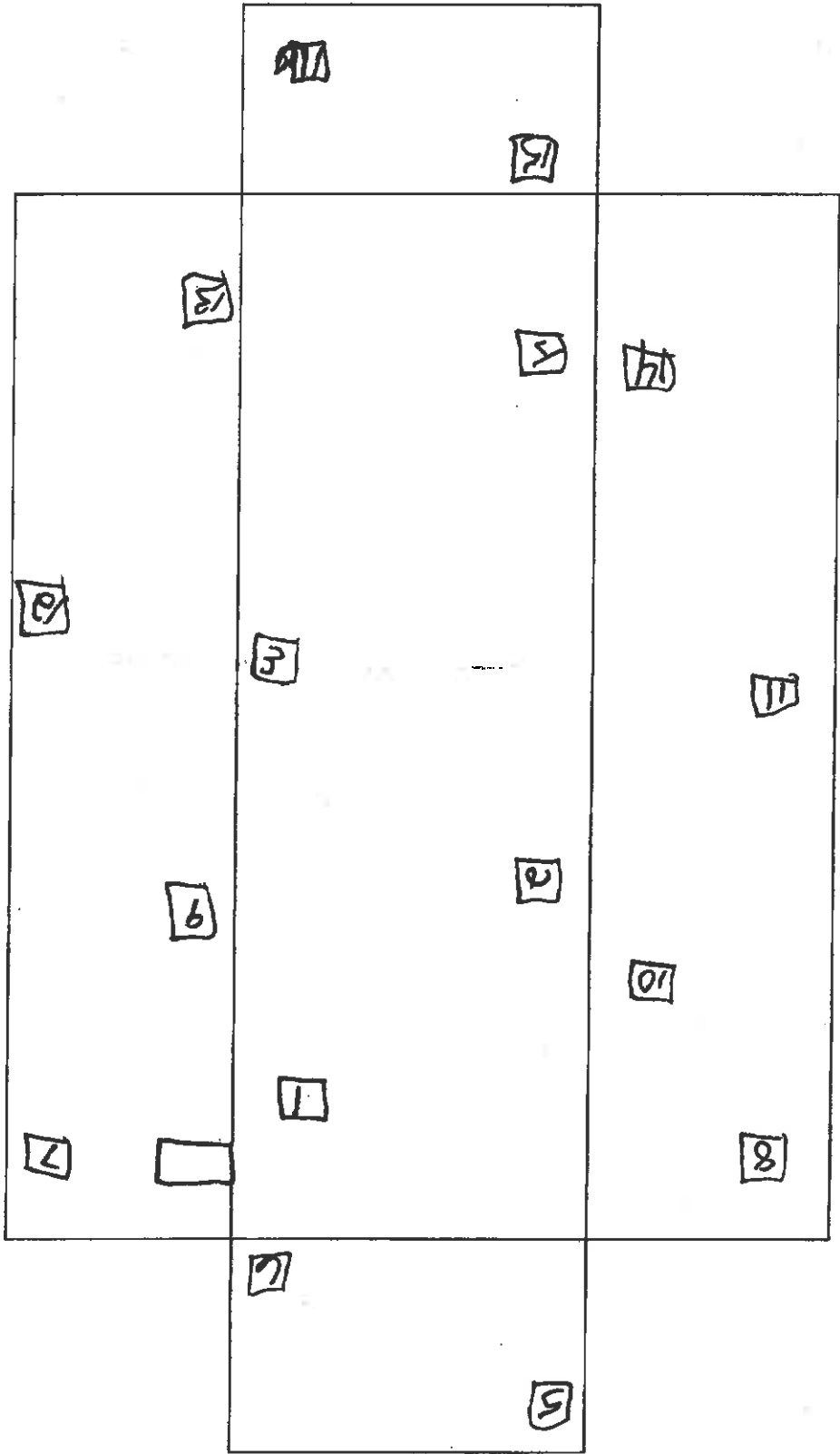
TURNAROUND TIME

Same Day

24 - Hour

3 - Day

5 - Day



CHB#210750

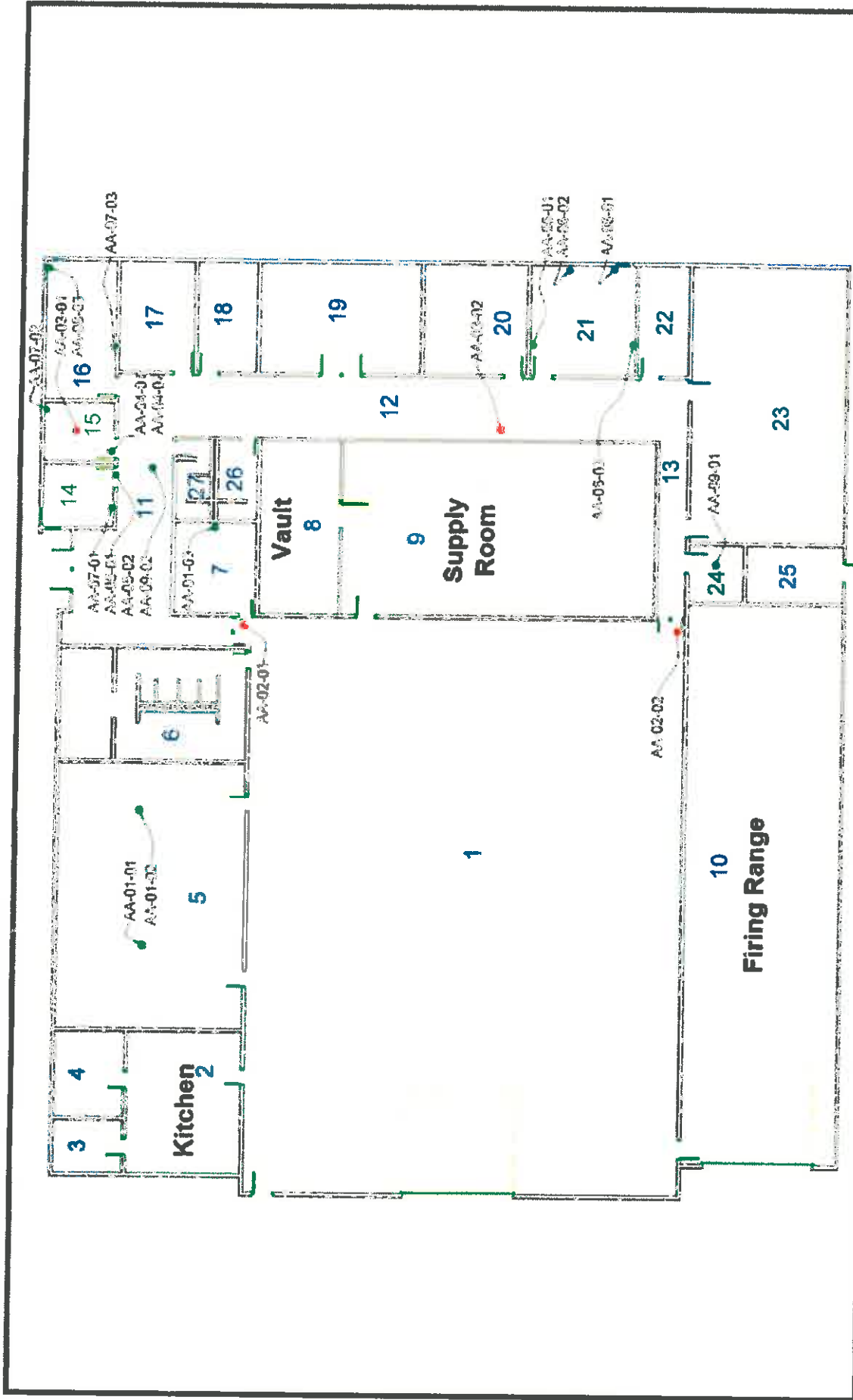
ATTACHMENT B

ATTACHMENT C





ATTACHMENT D



FJ ENERCON

**FIGURE 1
ASBESTOS SAMPLE LOCATIONS**

Project No: ENMISC2481



Legend:

- Positive Asbestos Sample Location
- Negative Asbestos Sample Location

Oklahoma Department of Environmental Quality
ALVA ARMORY
 995 Thunderbird Road
 Alva, OK

CONFIRMATION SAMPLING

CONFIRMATION SAMPLING RESULTS

On July 10, 2012, Department of Environmental Quality (DEQ) personnel sampled the Alva Armory for lead dust to confirm room floors were below the Housing and Urban Development (HUD) standard of 40 micrograms per square foot ($\mu\text{g}/\text{ft}^2$) for child occupied facilities and to confirm walls and floor of the indoor firing range (IFR) were below 200 $\mu\text{g}/\text{ft}^2$. Below is a summary of the results. Sample results are attached (**Attachment 1**).

- The room floors of the building were all below 40 $\mu\text{g}/\text{ft}^2$.
- Two samples in the IFR came back above 200 $\mu\text{g}/\text{ft}^2$.
 - DEQ determined that the walls at the back and on both sides of the sand trap had imbedded lead bullet fragments throughout the concrete. These areas were sealed with concrete construction grout (Sample locations 15 and 18).

On July 25, 2012, DEQ personnel sampled the walls and floor of the IFR for lead dust to ensure these surfaces were below the HUD standard of 40 $\mu\text{g}/\text{ft}^2$ after DEQ contractors had encapsulated walls and ceiling of the IFR with lead-based paint encapsulant and encapsulated floor of the IFR with concrete epoxy. Below is a summary of the results. Sample results are attached (**Attachment 2**).

- The IFR walls and floor were all below 40 $\mu\text{g}/\text{ft}^2$.

ATTACHMENT 1

JULY 10, 2012 SAMPLE RESULTS



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

Environmental Chemistry Analysis Report

QuanTEM Set ID: 210129
Date Received: 07/11/12
Received By: Sherrie Leftwich
Date Sampled:
Time Sampled:
Analyst: BM
Date of Report: 7/11/2012

Client: State of Oklahoma
 DEQ Land Protection
 Attn: Dustin Davidson
 707 N. Robinson
 Oklahoma City, OK 73102
Acct. No.: B486
Project: Alva Armory
Location: Alva, Oklahoma
Project No.: N/A

AIHA ID: 101352

QuanTEM ID	Client ID	Matrix	Parameter	Results	Reporting Limits	Units	Date/Time Analyzed	Method
001	1	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
002	2	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
003	3	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
004	4	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
005	5	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
006	6	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
007	7	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
008	8	Wipe	Lead	35.4	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
009	9	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
010	10	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
011	11	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
012	12	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
013	13	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
014	14	Wipe	Lead	124	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
015	15	Wipe	Lead	1,470	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
016	16	Wipe	Lead	39.3	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
017	17	Wipe	Lead	76.6	16	ug/sq. Ft.	07/11/12 15:00	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: 210129
Date Received: 07/11/12
Received By: Sherrie Leftwich
Date Sampled:
Time Sampled:
Analyst: BM
Date of Report: 7/11/2012

Client: State of Oklahoma
 DEQ Land Protection
 Attn: Dustin Davidson
 707 N. Robinson
 Oklahoma City, OK 73102
Acct. No.: B486
Project: Alva Armory
Location: Alva, Oklahoma
Project No.: N/A

AIHA ID: 101352

QuanTEM ID	Client ID	Matrix	Parameter	Results	Reporting Limits	Units	Date/Time Analyzed	Method
018	18	Wipe	Lead	510	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
019	19	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
020	20	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
021	21	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
022	22	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
023	23	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
024	24	Wipe	Lead	86.9	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
025	25	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
026	26	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
027	27	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
028	28	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
029	29	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
030	30	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
031	31	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
032	32	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
033	33	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/11/12 15:00	W NIOSH 9100
034	34	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/11/12 15:00	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.

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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: 210129
Date Received: 07/11/12
Received By: Sherrie Leftwich
Date Sampled:
Time Sampled:
Analyst: BM
Date of Report: 7/11/2012

Client: State of Oklahoma
DEQ Land Protection
Attn: Dustin Davidson
707 N. Robinson
Oklahoma City, OK 73102
Acct. No.: B486
Project: Alva Armory
Location: Alva, Oklahoma
Project No.: N/A

AIHA ID: 101352

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: 10157
Test: Lead

Date: 7/11/2012
Matrix: Wipe

Lab Number: 210129
Approved By: Benton Miller
Date Approved: 7/11/2012

Notes:

Blank Data:

Type of Blank	Blank Value
FCB	0
ICB	0
Matrix Blank	0

Standards Data:

Standard	Low Limit	Obtained	High Limit
CCV	4.5	5	5.5
FCV	4.5	5.2	5.5
ICV	0.9	1	1.1
RLVS	0.256	0.348	0.384

Duplicate Data:

Recovery Data:

Sample Number	Result	Spike Level	Result + Spike	% Recovery	Dup. Result + Spike	% Dup. Recovery	% Spike RPD
MS-W2	0.000	5.178	5.623	108.6	5.572	107.6	0.9
MS-W1	0.000	5.167	5.324	103.0	5.853	113.3	9.5

Authorized Signature: _____



Benton Miller, Analyst



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Contact Information		Project Information	
Company: DER	Phone: 405-702-5115	Project Name: Alva Army	Report Results: <input checked="" type="checkbox"/> one box
Contact: Dustin Davidson	Cell Phone: 405-317-4292	Project Location: Alva, Oklahoma	Quantem Website
Account #: _____	E-mail: dustin.davidson@der-ok.com	Project ID: _____	Other

Sampled By: Dustin Davidson	Name: Dustin Davidson	Date: 7/11/12	Time: 11:00 AM	Received By: J. Mueller	Date & Time: 7/11/12 11:02
Relinquished By: Dustin Davidson	Name: _____	Date: _____	Time: _____	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					Sample Matrix Codes								
						PPM	Wt %	mg / l	µg / ft ²	µg / m ²	mg / cm ²	A	B	C	D	E			
1					C	Pb	X												
2				12" X 12"															
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			

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



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 Lab No. 21029
 Accept Reject

Report Results: one box
 Quantem Website
 Other

Project Information
 Project Name: Alva Army
 Project Location: Alva, OK
 Project ID:

Contact Information
 Company: DEQ
 Contact: Dustin Davidson
 Account #: 405-702-5115
 Phone: 405-317-4292
 Cell Phone: davidson@deq.ok.gov
 Email: davidson@deq.ok.gov
 Date: 7/10/12

RELINQUISHED BY: Dustin Davidson DATE & TIME: 7/10/12 11:00am VIA: Prof. Off
 RECEIVED BY: _____ DATE & TIME: _____

REQUESTED SERVICES (Please check 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 (check ONE box only)	mg / l	µg / ft ²	µg / m ³	mg / cm ²
1	13			12" x 12"	C	Pb	X				
2	14										
3	15										
4	16										
5	17										
6	18										
7	19										
8	20										
9	21										
10	22										
11	23										
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	X
3 - Day	
5 - Day	



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2033 Heritage Park Drive, Oklahoma City, OK 73120-7502
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Page 7 of 3

For Lab Use Only

Lab No. 210129

Accept Reject

Report Results (online box)

Quantem Website

Other

Company: DEO Project Name: Alva Academy

Contact: Dustin Davidson Project Location: Alva, OK

Account #: _____ Project ID: _____

Phone: 405-702-5115 Date: 7/10/17

Call Phone: 405-317-4292

E-mail: davidson@deolab.com

Sampled By: Dustin Davidson Date: 7/10/17

RELINQUISHED BY: Dustin Davidson DATE & TIME: 7/11/17 11:00 AM VIA: Deaf 066

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					Sample Matrix Codes	
						PPM	Wt %	mg / l	µg / ft ²	µg / m ²		mg / cm ²
1	25			12" X 12"	C	X						A
2	26											B
3	27											C
4	28											D
5	29											E
6	30											
7	31											
8	32											
9	33											
10	34											
11												
12												

TURNAROUND TIME

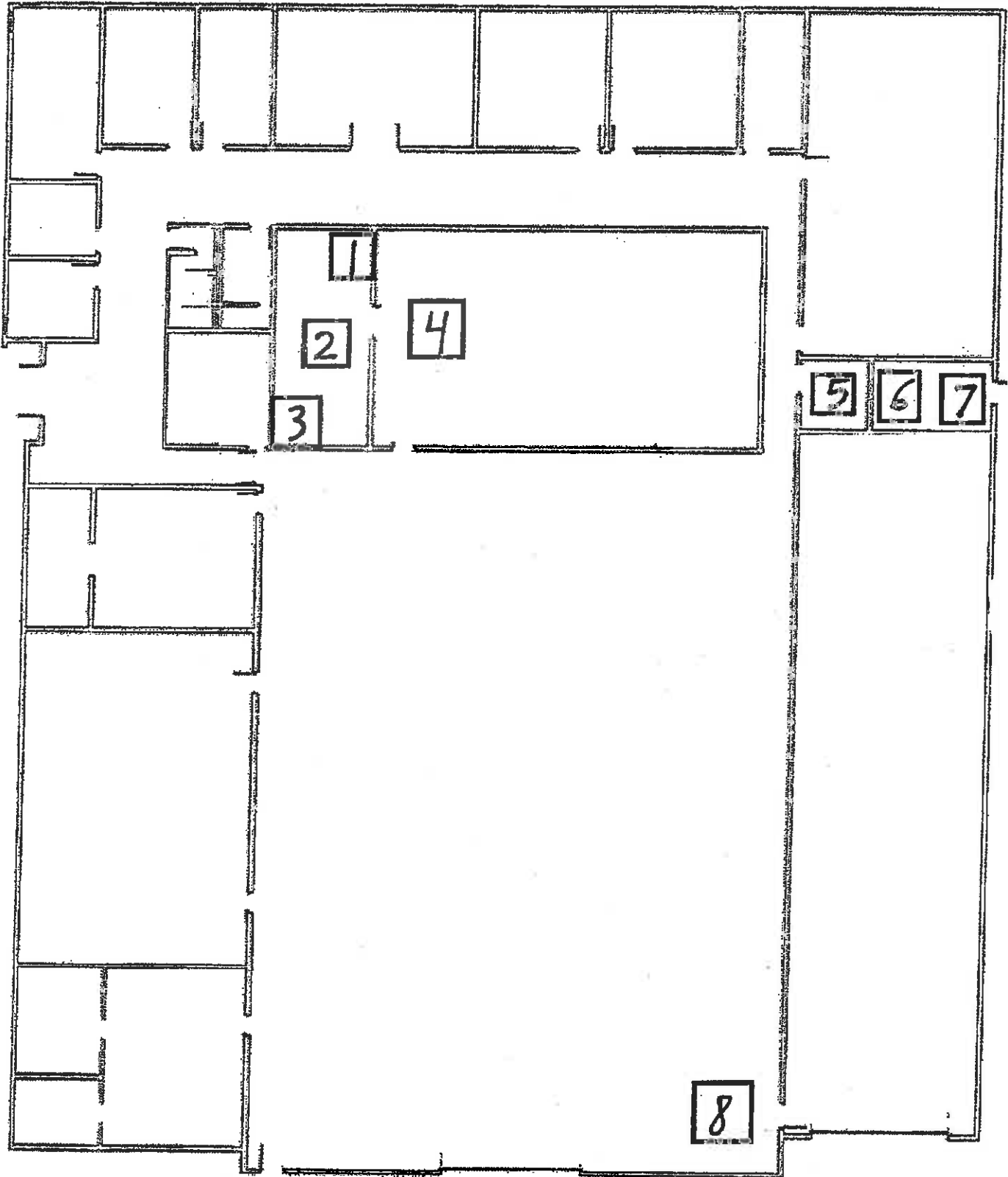
Same Day

24 - Hour

3 - Day

5 - Day

210129



ATTACHMENT 2

JULY 25, 2012 SAMPLE RESULTS



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

Environmental Chemistry Analysis Report

QuanTEM Set ID: 210750	Client: State of Oklahoma
Date Received: 07/25/12	DEQ Land Protection
Received By: Joanna Mueller	Attn: Dustin Davidson
Date Sampled:	707 N. Robinson
Time Sampled:	Oklahoma City, OK 73102
Analyst: BM	Acct. No.: B486
Date of Report: 7/26/2012	Project: Alva Armory
	Location: Alva, OK
	Project No.: N/A

AIHA ID: 101352

QuanTEM ID	Client ID	Matrix	Parameter	Results	Reporting Limits	Units	Date/Time Analyzed	Method
001	1	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/26/12 9:30	W NIOSH 9100
002	2	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/26/12 9:30	W NIOSH 9100
003	3	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/26/12 9:30	W NIOSH 9100
004	4	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/26/12 9:30	W NIOSH 9100
005	5	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/26/12 9:30	W NIOSH 9100
006	6	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/26/12 9:30	W NIOSH 9100
007	7	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/26/12 9:30	W NIOSH 9100
008	8	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/26/12 9:30	W NIOSH 9100
009	9	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/26/12 9:30	W NIOSH 9100
010	10	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/26/12 9:30	W NIOSH 9100
011	11	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/26/12 9:30	W NIOSH 9100
012	12	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/26/12 9:30	W NIOSH 9100
013	13	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/26/12 9:30	W NIOSH 9100
014	14	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/26/12 9:30	W NIOSH 9100
015	15	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/26/12 9:30	W NIOSH 9100
016	16	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/26/12 9:30	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



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

Environmental Chemistry Analysis Report

QuanTEM Set ID: 210750
Date Received: 07/25/12
Received By: Joanna Mueller
Date Sampled:
Time Sampled:
Analyst: BM
Date of Report: 7/26/2012

Client: State of Oklahoma
DEQ Land Protection
Attn: Dustin Davidson
707 N. Robinson
Oklahoma City, OK 73102
Acct. No.: B486
Project: Alva Armory
Location: Alva, OK
Project No.: N/A

AIHA ID: 101352

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.

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.

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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

Supplemental Report QAQC Results

QA ID: 10196
Test: Lead

Date: 7/26/2012
Matrix: Wipe

Lab Number: 210750
Approved By: Benton Miller
Date Approved: 7/26/2012

Notes:

Blank Data:

Type of Blank	Blank Value
FCB	0
ICB	0
Matrix Blank	0

Standards Data:

Standard	Low Limit	Obtained	High Limit
CCV	4.5	4.8	5.5
FCV	4.5	5.3	5.5
ICV	0.9	1	1.1
RLVS	0.256	0.297	0.384

Duplicate Data:

Recovery Data:

Sample Number	Result	Spike Level	Result + Spike	% Recovery	Dup. Result + Spike	% Dup. Recovery	% Spike RPD
MS-W1	0.000	5.230	5.345	102.2	5.396	103.2	1.0

Authorized Signature: _____


Benton Miller, Analyst



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 Lab No. 216750
 Accept Reject

Report Results (one box)
 Quantem Website
 Other

Company: DEA Contact Information: Project Information
 Contact: Dustin Davidson Project Name: Alva Arroyo
 Account #: Project Location: Alvago OK
 Project ID: Project ID:

Sampled By: Dustin Davidson Date: 7/25/12 Time: 10:26
 Relinquished By: Dustin Davidson Date: 7/26/12 Time: 10:26
 Via: Drop Off Received By: J. Muller Date & Time: 7/26/12 10:26

REQUESTED SERVICES (Please check the appropriate boxes)

No.	Sample ID (10 Characters Max)	Sample Description	Volume (Liters)	Volume Area (Length x Width)	Sample Matrix (See matrix code Pg. 1)	Analysis					Sample Matrix Codes	
						PPM	Wt %	Mg / l	µg / ft ²	µg / m ³		mg / cm ²
1	1-16			12" X 12"	CX				X			A
2												B
3												C
4												D
5												E
6												
7												
8												
9												
10												
11												
12												

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

