

TARGETED BROWNFIELD ASSESSMENT

For

Oklahoma Army National Guard
Former McAlester Armory
McAlester, Oklahoma

ASTM E 1527-05
Phase I Environmental Site Assessment
All Appropriate Inquiry

Prepared by:



May 8, 2013

Prepared for:

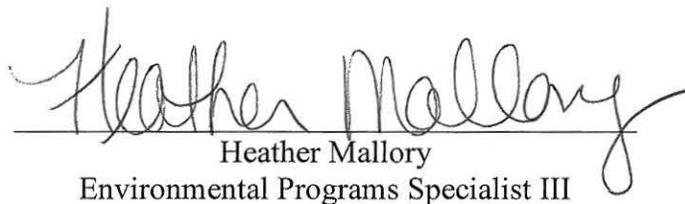
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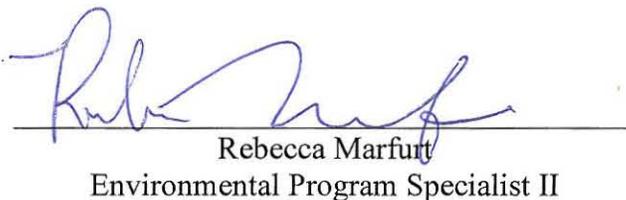

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1.0 Executive Summary

This Phase I Targeted Brownfield Assessment (TBA) of the McAlester Armory, located at 319 East Polk Avenue, McAlester, Oklahoma, was performed in accordance with the ASTM E 1527-05, for the purposes of identifying potential environmental concerns at the subject property. A site reconnaissance of the subject property was conducted by Rebecca Marfurt, Alea Smith, Liberty Galvin, and Johnathan McClary of the Oklahoma Department of Environmental Quality (DEQ) on August 5th, 2012. The subject property is located in Section 31, Township 6 North, and Range 15 East SE $\frac{1}{4}$, SW $\frac{1}{4}$, in Pittsburg County, Oklahoma. The subject property address is 319 East Polk Avenue [at the southwest corner of 3rd and Polk streets] McAlester, 74502 [latitude 34.943280, longitude -95.761202] (Ref. 4) [Appendix C].

A cursory summary of the main environmental site assessment findings is provided below. However, details are not included or fully developed in this section, and the report must be read in its entirety for a comprehensive understanding of the items contained herein.

- The McAlester Armory was built by the Works Progress Administration in 1936. It was managed and maintained by the Oklahoma Military Department (OMD) to support the military mission of the Oklahoma Army National Guard (OKARNG).
- Results of C.H. Guernsey and Company sampling on May 3, 2004 indicated lead dust concentrations ranging from 116.0 $\mu\text{g}/\text{ft}^2$ on the drill floor to 291.6 $\mu\text{g}/\text{ft}^2$ near the stairs leading to the basement indoor firing range (IFR). Two to three inches of standing water was present on the floor of the basement IFR, therefore no wipe samples were taken in that room during reconnaissance. The IFR bullet catch system did not contain sand [Appendix F].
- A lead and asbestos inspection was completed by Marshall Environmental Management, Inc. on March 8, 2012. Results of the asbestos inspection showed asbestos to be present in the floor tile and mastic in the main building. Asbestos is also present in the floor-tile, mastic, bedding mud, transite, and ceilings in outbuildings 4, 5, and 7. Lead inspection revealed lead-based paint on the armory windows, doors, parking stops, floors, stair rails, trim, and exterior siding in both the main armory building and outbuilding 3. Elevated levels of lead dust ($>40 \mu\text{g}/\text{ft}^2$) were found on most of the floors in the main armory building and on the floors of outbuildings 2, 3, and 5. Two to three inches of standing water was present on the floor of the basement IFR, therefore no wipe samples were taken in that room during reconnaissance. For a detailed description of lead and asbestos inspection results, see Appendix A.
- Review of the Oklahoma Corporation Commission (OCC's) and OMD's records indicated that two underground storage tanks (UST) had previously been present at the site [Appendix G]. One 4,000 gallon tank and one 1,000 gallon tank were installed in 1981 on the northwestern side of the property and used for the storage of gasoline. Records indicate that the tanks were removed on December 23, 1991. The tank was rendered unusable for storage of any fluids and the tank and its contents were disposed of in accordance with applicable local, state, and federal regulations. OCC's records did not

indicate that there had been an incidence of a leak in the UST at the subject property. Upon removal of the UST, soil tests were conducted for benzene, toluene, ethylbenzene, xylenes, and TPH. All of the tests results were below Environmental Protection Agency (EPA) detection limits. For the TPH test, it is undocumented as to whether this test was for diesel range organics (DRO) or gasoline range organics (GRO).

- The DEQ database of historic dry cleaners was searched and yellowpages.com was searched for present day dry cleaners within 1 mile of the subject property. 12 historic dry cleaners and 3 present day dry cleaners were found. The closest historic dry cleaner is located 0.57 miles southwest of the subject property. The closest present day dry cleaner is located 0.80 miles southwest of the subject property. The dry cleaners are considered potential environmental conditions (PECs) according to ASTM 1528-06. For more information about the dry cleaners within 1 mile of the subject property, refer to Appendix A.
- No sites on the National Priority List (NPL), deleted NPL database, active or archived Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) database, Resource Conservation and Recovery Act (RCRA) database, Emergency Response Notification System (ERNS) list, State Voluntary Cleanup Program and State Brownfield Programs lists were identified on the subject property. The subject property is on the DEQ Site Cleanup Assistance Program's (SCAP) list for investigation and cleanup of environmental hazards.

2.0 Introduction

The State of Oklahoma Department of Environmental Quality under a Brownfield Assistance Agreement (No.RP96681001-0) (Ref. 1) with the EPA conducted a Phase I Targeted Brownfield Assessment of the McAlester Armory located at 319 East Polk Avenue, McAlester, Oklahoma.

2.1 Purpose

The purpose of this assessment is to examine the environmental conditions within the target area. This information will be provided to the City of McAlester to assist in its redevelopment planning as well as meet the All Appropriate Inquiry requirement of the landowner liability protections under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA, better known as Superfund- Ref. 2), as provided in the Small Business Relief and Brownfields Revitalization Act of 2002 (Public Law 107-118, Subtitle B – Ref. 3). The purpose of a Phase I Targeted Brownfield Assessment (TBA) is to identify, to the extent feasible, recognized environmental conditions in connection with the target property through a systematic review of readily available information sources and a site reconnaissance.

DEQ is providing technical assistance to the project by evaluating the environmental condition of the property prior to the City of McAlester acquiring the property. Funding for this assessment has been provided by the EPA.

2.2 Detailed Scope-of-Services

DEQ examined the current use of the property and then identified the historical uses of the property to determine if recognized environmental conditions exist. DEQ examined historical documents, governmental databases, deed records, aerial photographs, governmental environmental files, Sanborn Fire Insurance Maps, conducted interviews with two city officials, reviewed OMD site records, and visited the site. A good faith effort was made to identify possible environmental conditions that might affect the development of the property. DEQ personnel collected a sample from the soil outside of the IFR vent fan and two samples from the oil-water separator located near Outbuilding 5 [Appendix C].

2.3 Significant Assumptions

History and knowledge of the subject property shows that the building was used as a National Guard Armory. There was once an IFR in the basement of the armory. The bullets used at the time were most likely made from lead. Because of the presence of the IFR there is a potential for lead dust to be tracked throughout the building. Lead has been used as a color carrier in paints for hundreds of years. In 1978 its use in residential paints was restricted in the United States. Because of the armory's age there is a potential for lead-based paint to be used in the building. The IFR consists of a vent fan in the exterior wall that discharges directly outside. Because of this the soil located directly outside the vent fan has the potential for lead or other heavy metal contamination.

Asbestos containing material (ACM) is material that contains one or more asbestos fibers. The U.S. began banning the use of asbestos in most building materials in the 1970s due to studies confirming the harmful health effects caused by exposure to airborne asbestos. Because of the armory's age, there is a potential for ACM in the building components (roofing materials, floor tiles, mastic, ceiling tiles, window putty, natural gas-fired heating systems, etc). DEQ hired Marshall Environmental to conduct a lead and asbestos survey on the property.

Polychlorinated biphenyls (PCB) are oils that were used in electrical equipment until their regulation in 1977. There is a potential for PCB in florescent lighting ballasts, capacitors, transformers, and other dielectric fluid filled electrical equipment at the Armory.

During a previous sampling event there was flooding that had occurred. Because of this there is a potential for mold to exist within the armory. Chlorofluorocarbons (CFCs) are compounds used in heating, ventilation, and cooling (HVAC) systems and in fire suppression systems. The use, release, and recycling of these compounds are regulated by EPA. There is a potential for CFC's to be present in the HVAC equipment and fire suppression system of the armory. Mercury is a heavy metal used in thermostats, pressure gauges, and other building and process related equipment. There is a potential for mercury containing thermostats at the armory. Lead, nickel, and cadmium are heavy metals used in batteries. There is a potential for heavy metal containing batteries in the

emergency lighting and exit signage at the armory. Other issues may be present that were not visually evident.

2.4 Limitations and Exceptions

The purpose of an environmental site assessment is to identify actual or potential “recognized environmental conditions” that may result in liability, land use restrictions, or cause delays in revitalization. The ASTM Phase I Environmental Site Assessment E 1527 – 05 (Ref. 21) is the minimum standard for environmental due diligence in the real estate industry and meets the standard for All Appropriate Inquiry under the Small Business Liability Relief and Brownfields Revitalization Act of 2002. A diligent effort in accordance with generally accepted good commercial and customary standards and practices was undertaken to identify the “recognized environmental conditions” that might affect the revitalization project. However, the identification of old hazardous waste sites is an evolving process; therefore, DEQ cannot state with absolute certainty that no other potential hazardous waste sites are located in the area. This assessment was conducted under constraints of time, cost, and scope and reflects a limited investigation and evaluation. It reflects the normal degree of care and skill that is ordinarily exercised by environmental professionals conducting business in this or similar localities. In no event shall the DEQ or its employees be liable for any damages, injury, loss, cost or expense whatsoever arising in connection with the use or reliance on the information contained in this report, except as otherwise provided by law.

The information in this report is based on a review of governmental records, information provided by the City of McAlester, the OMD, and observations made by the environmental professional. The results of this assessment, as documented in this report, are valid as of the date of this report. This assessment does not include sampling of rock, groundwater, surface water, or air. For qualifications of the environmental professional and others working on the project see Appendix I.

2.5 Special Terms and Conditions

This assessment report has been prepared for the City of McAlester by the DEQ with EPA funds. Information about this report will be provided to the EPA for its files. This report and the working file are public record and subject to the Oklahoma Open Records Act and the federal Freedom of Information Act.

3.0 Site Characterization and History

3.1 Location and Legal Description

The subject property is located at 319 East Polk Avenue, McAlester, Oklahoma. This property consists of approximately 5.29 acres of land and contains the former National Guard Armory building. A site map and topographical map depicting the property have been provided in Appendix A.

The subject property is located in Section 31, Township 6 North, and Range 15 East SE ¼, SW ¼, in Pittsburg County, Oklahoma. The subject property address is 319 East Polk Avenue [at the southwest corner of 3rd and Polk streets] McAlester, 74502 [latitude 34.943280, longitude -95.761202] (Ref. 4) [Appendix A].

The legal description of the subject property is as follows:

All of Lots 9 and 10 and the West 39 feet of Lot 11; and

The south half of Lots 6, 7, and 8 and the east 61 feet of Lot 11 and that part of the alley as follows: beginning at the southwest corner of Lot 8; thence in a southerly direction a distance of 20 feet to the northwest corner of Lot 9; thence in an easterly direction a distance of 300 feet to the northeast corner of Lot 11; thence in a northerly direction a distance of 20 feet to the southeast corner of Lot 6; thence in a westerly direction of 300 feet to the point of beginning; and

The north half of lots 6, 7, and 8, Block 99, and the south half of vacated Taylor Avenue adjacent to lots 6, 7, and 8; and

The northerly 80.50 feet of Lot 5; and

Lots 5 and 12;

All in Block 99 in the City of McAlester, Pittsburg County, State of Oklahoma;

Together with the improvements thereon and appurtenances thereunto belonging.

3.2 Site and Vicinity Characterization

The McAlester Armory was built in 1936. It was managed and maintained by the OMD to support the military mission of the OKARNG. The OKARNG is a component of the United States Army and fulfills the military mission of national security. According to Pete Stasiak, City Manager for the City of McAlester, the OMD ceased to operate at the Armory approximately in late 2009 (Ref. 4).

Natural gas is supplied to the subject property by Oklahoma Natural Gas and telephone by AT&T (Ref. 23). Electricity, water, sewer, and sanitation services are supplied by the City of McAlester (Ref. 23).

The property on which the McAlester armory stands originally belonged to the Jeff Lee Athletic Association. It was gifted to the City of McAlester for a nominal amount in 1936 for the construction of a swimming pool, a stadium, and the McAlester armory, which was built to house both National Guard units as well as recreational programs. The remainder of the property was gifted by the Jeff Lee Athletic Association in 1947. In 1967 the property containing the armory was transferred from the City of McAlester to

the State of Oklahoma via a quit claim deed, in order to ensure that the property was to be used exclusively for OKANG activities.

The OMD, through a quit claim deed, transferred ownership of the armory to DEQ on August 18, 2011 (Ref. 4). DEQ is the current owner of the facility until remediation is complete, at which time ownership will be transferred to the City of McAlester. DEQ will file a deed notice on the property following remediation of asbestos and lead in the buildings.

A review of the topographical map indicated that the surface elevation of the site is approximately 700 feet above mean sea level. The topographical gradient is to the northwest. The topographical map can be found in Appendix A.

3.3 Description of Structures, Roads, and Other Improvements

The McAlester Armory is a self-contained, one-story building constructed of locally-quarried stone with cast concrete detailing. The building measures 118 feet (east to west) by 201 feet (north to south). The McAlester Armory was built in 1936 by the Works Progress Administration (WPA). The Armory is similar to other WPA armories designed by the architect Bryan W. Nolan in that it houses a large central drill floor with a large vaulted barrel ceiling. Currently, the drill floor ceiling has been fitted with a lowered ceiling tile grid and fluorescent lighting. Because armories of this era were designed for both military training as well as for community events, a large stage area is present on the east side of the drill floor. Underneath the stage area lays a subterranean indoor firing range, which, like many other WPA basement firing ranges, contains a substantial amount of water that has seeped through the porous sandstone and cement. Site reconnaissance by Guernsey and Company in 2004 and by DEQ staff in 2012 reported standing water in the IFR, thus it is likely that there is water present on the floors of the IFR throughout the year. The remains of a bullet trap is present at the far end of the IFR. The IFR bullet trap does not contain sand. The ventilation system within the IFR is comprised of a fan located in the north wall that vented directly outside (Ref. 4) [Appendices B, C, D, and F].

The McAlester Armory was designed to house two units; therefore the armory is partitioned into two halves north and south of the drill floor. The section south of the drill floor housed cavalry offices, storage cages, supply rooms and the men's latrine. Rooms north of the drill floor housed the mess hall, infantry offices, infantry supply rooms, and the women's latrine.

The Armory has three principal facades, the main west entry from the drill floor that accesses Third Street, the North entry, and one facing south accessing Polk Street. Original metal downspouts are located on all facades. Most of the original windows have been replaced in the armory or bricked over as a result of a 1980 renovation project. WPA markers identify the building. Over west entry overhead door is a large original sign, "McAlester Armory 1936." Above the original sign is additional metal lettering

from the 1980 renovation, "George Nigh National Guard Armory, McAlester, Oklahoma." (Ref. 4) [Appendices B, C, D, and F].

The Armory covers an approximate area of 23,719 square feet. Within the lot where the armory sits there are four additional buildings that were used in conjunction with the armory. On the same lot there was previously an Army Reserve Recruiting Station, this is the concrete slab in the southeast section of the lot that can be seen in the aerial photographs in Appendix E. This building was demolished in 1990, and the area has been used as a household hazardous waste drop-off site for the community and is not affiliated with the National Guard armory. (Ref. 4). There have been no reported spills or contamination issues related to this facility.

The subject property is surrounded by paved roads that include North Third Street to the west, East Polk Avenue to the south, and North Fourth Street to the East. A paved parking lot can be found to the north of the former armory building.

3.4 Owner, Property Manager, and Occupant Information

The State of Oklahoma, acting through the OMD, transferred the subject property to the DEQ through a quitclaim deed signed on August 18, 2011. The OMD has ceased to operate from the Armory at the time of preparation of this report (Ref. 4). Mr. Mel Priddy, Community Services Director, City of McAlester currently controls access to the Armory.

3.5 Information Reported by User Regarding Environmental Lien or Specialized Knowledge or Experience

Information on AULs for the subject property was not provided by either the OMD or the City of McAlester during the preparation of this report. There were no known AULs on the subject property discovered during the record search at the county courthouse. No environmental liens or use limitations were reported for the subject property, and it does not appear in the Brownfield IC database.

3.6 Commonly Known or Reasonable Ascertainable Information

The Armory fulfilled a longstanding military need for an adequate, secure drill hall and arms storage building for use by two Oklahoma National Guard units, Headquarters Battery and Combat Train 2nd Battalion 158th Field Artillery, and Battery F 158th Field Artillery, of the 45th Infantry Division.

The property on which the McAlester armory stands originally belonged to the Jeff Lee Athletic Association. It was gifted to the City of McAlester for a nominal amount in 1936 for the construction of a swimming pool, a stadium, and the McAlester armory, which was built to house both National Guard units as well as recreational programs. The remainder of the property was gifted by the Jeff Lee Athletic Association in 1947. In

1967 the property containing the armory was transferred from the City of McAlester to the State of Oklahoma via a quit claim deed, in order to ensure that the property was to be used exclusively for OKANG activities.

The OMD, through a quit claim deed, transferred ownership of the armory to DEQ on August 18, 2011 (Ref. 4). DEQ is the current owner of the facility until remediation is complete, at which time ownership will be transferred to the City of McAlester.

3.7 Valuation Reduction for Environmental Issues

Valuation of the property is outside the scope of this assessment. A professional appraiser should be consulted to place a value on the property.

3.8 Current Use of Property

The property is currently not being used. The city would like to use the facility for emergency response services, but are waiting to begin construction until the completion of the Targeted Brownfield Assessment.

3.9 Past Use of Property

3.9.1 Review of Aerial Photos

Historic aerial photographs were searched to view the changes to the property over time. The 1995, 2004, 2011, and 2012 photos were found on Google Earth. The 1955 map was found in the aerial photograph collection on the 5th floor of DEQ. The map from 1938 was found in the archives at the Oklahoma Department of Libraries. All of these photos can be found in Appendix E. The following represents a summary of what was found at the subject property from each photograph.

1938 aerial photograph

The 1938 aerial photograph shows the newly-constructed WPA armory building standing in an open area in the north part of town. Lee Park and a swimming pool can be seen to the north of the armory. The parkland and the swimming pool still exist today. To the east of the armory property lies an athletic field, and the remainder of the area appears to be residential or agricultural.

1955 aerial photograph

The 1955 aerial photograph shows the subject property to house a new outbuilding on the east side of the main armory building (Building 7). It can be presumed that Building 7 was constructed sometime between 1947 and 1955. The Army Reserve Recruiting Station has been built to the east of Building 7. There are residential properties, but mostly rural area surrounding the subject property.

1995 aerial photograph

This aerial photograph shows a satellite view of the subject property. Six Auxiliary buildings can be seen and their location relative to the main armory building. There is a concrete pad visible that may have had a building on it at one time, but is only bare concrete at this point. It appears that there are many vehicles parked on the property, as well as a number of dumpsters.

2004 aerial photograph

This aerial photograph shows a satellite view of the subject property. Six Auxiliary buildings can be seen and their location relative to the main armory building. The concrete pad to the east of the main armory building is still intact, although there are no vehicles or dumpsters stored in that area.

2011 aerial photograph

This aerial photograph shows a satellite view of the subject property. Six Auxiliary buildings can be seen and their location relative to the main armory building. The concrete pad to the east of the main armory building is still intact, and there are vehicles and dumpsters stored along the north side of the property.

2012 aerial photograph

This aerial photograph shows a satellite view of the subject property. Six Auxiliary buildings can be seen and their location relative to the main armory building. The concrete pad to the east of the main armory building is still intact, although there are no vehicles or dumpsters stored in that area.

3.9.2 Fire Insurance Maps

Sanborn Fire Insurance maps were reviewed during the preparation of this Phase I TBA [Appendix A]. Maps used show the development of the area in which the subject property is located. The Sanborn Index shows the location of Lot 99, however there are no detailed maps of this property, as there were no insured structures built in this area at that time, being that it was primarily residential or farmland.

3.10 Current and Past Use of Adjoining Properties

The Subject Property is located at 319 East Polk Street, in a residential area. The property is bordered by Third Street and residential housing on the west, by Polk Street and residential housing on the south, Fourth Street and McAlester High School to the east, and Lee Park to the north (Ref. 4).

3.11 Environmental (Physical) Setting

Physical setting sources were obtained from the U.S. Geological Survey, Federal Emergency Management Association, United States Department of Agriculture, Natural Resources Conservation Services, and a site visit conducted by DEQ personnel on August 4, 2012.

Pittsburg County is in the southeastern part of Oklahoma. The land area of this county is about 1359 square miles. Pittsburg County consists primarily of hilly, Post oak and blackjack oak cross timbers, sandstone ridges, and lower tall grass prairies. The City of McAlester was established in 1872 by J.J. McAlester, a businessman who established a trading post at the railroad intersection between the north-south and east-west lines. J.J. McAlester was instrumental in developing the town's coal mining industry, which thrived as a result of the train intersection in the center of town. Eventually, the state prison opened west of the City of McAlester, and is still in operation today. The City of McAlester is also home to many employees of McAlester Army Ammunition Plant, which manufactures the majority of the US Army's weapons (Ref 23).

The elevation of Pittsburg county ranges from slightly more than 600 feet in the northeastern part of the county to the highest point of 1,017 feet in the southeastern part of the county. At the City of McAlester, the elevation is 700 feet. Weather records at McAlester, the county seat, reveal an average annual rainfall of 41 inches in the northwestern part of the county to 47 inches in southeastern Pittsburg County. The highest rainfall occurs primarily in May; as rainfall averages 4 to 7 inches during that month. Winter is typically the driest time of the year. The average annual temperature of Pittsburg County is 62.2 degrees Fahrenheit (°F). The average summer temperature is 82°F and the highest temperature is 116 °F (Ref 5).

3.11.1 Surface Water Characteristics

The City of McAlester is located in the northwest section of the McAlester Texarkana quadrangle (Ref. 6). Although there are no significant streams within the City of McAlester, the city lies directly south of Lake McAlester, which is the main municipal water source for the city, and directly southwest of the very large Lake Eufaula.

3.11.2 Subsurface Geological Characteristics

General soils at the subject property belong to the Enders-Hector complex (EhE), 5 to 30 percent slopes. This complex consists of approximately 60% Enders soils and 35% Hector soils. Enders series are predominant in wooded, hilly, upland areas. This soil series consists primarily of sandy loam underlain by a layer of yellowish-red clay loam. Enders soils have slow permeability and consist primarily of weathered shale that is formed in the understories of oak, pine, hickory, and tall grasses. This Hector Series consists of soil that is formed as a result of acid sandstone weathering. As with the Enders soil series, Hector soils

are commonly formed under the coverage of timber forests. These soils consist primarily of fine brown sandy loam and fractured sandstone [Ref. 5].

3.11.3 Groundwater Characteristics

The hydrogeology as reported by the Oklahoma Water Resources Board (OWRB) indicates the subject property is located within the Pennsylvania minor groundwater basin inside the lower Canadian watershed. The aquifer vulnerability is low in the subject property area.

The OWRB well log viewer was utilized to make a map of groundwater and monitoring wells within a 1 mile radius of the subject property. The closest monitoring wells to the subject property are located 0.24 miles south from the subject property. All the water wells located within 1 mile are south of the subject property. The closest groundwater wells are within 0.42 and 0.43 miles of the subject property [Appendix A].

The Oklahoma Water Resources Board (OWRB) database consists only of information submitted to OWRB for all well data reported by licensed firms since 1982 and monitoring well data reported since 1988. There could be other wells in the area that are not included in the database. Wells drilled prior to the licensing requirements for well drillers would not necessarily have had a well log submitted to the OWRB (Ref. 20).

3.11.4 Air Characteristics

The prevailing wind is from the south. Wind speed averages about 11 miles per hour in most months, with the exception of strong March winds averaging about 13 miles per hour and calmer. August winds average about 9 miles per hour. South-southeasterly winds prevail across the County except in January and February, when winds become northerly (Ref. 5). There are no Air Quality permits located within 1.0 mile of the property.

4.0 Records Review

A regulatory database search was conducted by DEQ. This search included, at a minimum, those records and distances from the subject property dictated as appropriate in the ASTM E 1527-05 standard (Ref. 22). DEQ performed a review of available federal and state databases to assess whether the subject property or proximate properties were listed as having environmental concerns, which could have an adverse impact on the subject property. Summarized below is the information gained from the databases reviewed for the purposes of this report.

4.1 Federal National Priorities List (NPL)

The subject property is not an NPL site. There are no NPL sites reported within a 1 mile radius of the subject property (Ref. 9, 12). The subject property is not an NPL site.

The subject property does not have any deleted or partially deleted NPL sites within ½ mile (Ref. 10, 11).

4.2 Federal Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) List

The EPA database for Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Information Systems (CERLIS) was searched for active and archived CERCLIS sites on and near the subject property. The ASTM's recommended search radius for the subject property for both active and archived CERCLIS sites is ½ mile. No CERCLIS sites were found within a ½ mile radius of the site. The Property is not listed as an active CERCLIS site.

The subject property is also not listed in the archived CERCLIS site list. There are no archived sites within a ½ mile of the subject property.

4.3 Federal RCRA CORRACTS Facilities List within One Mile

The subject property does not have any federal RCRA CORRACTS facilities within one mile (Ref. 15, 19).

4.4 Federal RCRA Non-CORRACTS TSD Facilities List within One-half Mile

The subject property does not have any federal RCRA non-CORRACTS TSD facilities within one half mile (Ref. 15, 19).

4.5 RCRA Generators List (property and adjoining properties)

The subject property does not have any listed RCRIS-Large Quantity Generators (LQGs) or RCRIS-Small Quantity Generators (SQGs). There are no RCRIS LQG or SQG sites reported at the adjoining properties either (Ref. 19, 26).

4.6 Federal ERNS List (property only)

The subject property is not listed as an ERNS site. ERNS search results can be found in Appendix A (Ref. 26).

4.7 Federal Institutional Control/Engineering Control Registries (property only)

No federal Institutional Control/Engineering Control registries exist at this time. However county land records do not show any Institutional Controls or Engineering Controls in effect at the subject property.

4.8 State-Equivalent NPL

DEQ does not have a State-equivalent NPL database. Oklahoma does not have a State Superfund law to establish a State-equivalent NPL database.

4.9 State-Equivalent CERCLIS

DEQ does not have a State-equivalent CERCLIS database.

4.10 State and Tribal lists of Hazardous Waste Sites Identified for Investigation or Remediation (property only)

The subject property is listed on the Site Cleanup Assistance Program's list for investigation and cleanup (Ref. 18). No tribal lists of hazardous sites were reviewed during the preparation of this Phase I TBA. At this time, such a list was not readily available for review.

4.11 State Landfill and/or Solid Waste Disposal Sites within One-half Mile

DEQ regulates landfills and solid waste disposal sites across the State of Oklahoma. State landfills and solid waste disposal facilities were searched in the DEQ database within the ASTM required minimum distance of ½ mile from the subject property. No permitted landfills or solid waste disposal facilities are located within the search distance of the subject property. The closest municipal solid waste landfill is the City of McAlester Landfill which is 4.18 miles west of the subject property.

4.12 State Leaking Underground Storage Tank (LUST) List within One-half Mile

The OCC UST Notification Database and OWRB's Online Data viewer were searched to locate any known leaking underground storage tank (LUST) sites located within the ASTM's minimum search distance of a ½ mile of the subject property. Two LUST sites were found within a ½ mile radius. The following sites are listed and described below.

- The Handy Stop (#2), previously known as the Git-N-Go, located at 1922 N Main Street, is 0.37 miles northwest of the subject property. The tanks are listed as currently in use to store gasoline. The case status has been closed since June of 1992. When the case was open the ground water was 0.003ppm of Benzene found, and all other analyzed parameters were non-detectable. The LUST facility ID number is 61-00400.

- The Ez Mart (#533) located at 610 N Main street is 0.47 miles southwest of the subject property. The tanks are listed as permanently out of use, but previously used for gasoline storage. The case status has been closed since May of 2006. The groundwater and soil were tested for Benzene, Toluene, Ethylbenzene, Xylenes, and Naphthalene. The LUST facility ID number is 61-08266.

LUST sites within 0.5 miles of property					
Facility #	Name	Tank Capacity	# of Tanks	Status	On-going (Y/N)
61-00400	Handy Stop; Previously "Git-N-Go"	10,000 / 8,000	2 / 1	CIU	N
61-08266	E-Z Mart #533	4,000 / 6,000	1 / 2	POU	N

4.13 State Registered Storage Tank Lists (property and adjoining properties)

According to the OCC UST Notification Database, there are 6 UST sites within a one half mile of the subject property [Appendix G]. There are 16 USTs and 10 ASTs within one-half mile of the subject property. No tribal lists of storage tanks were reviewed during the preparation of this Phase I TBA. At this time, such lists are not readily available for review.

Review of OCC's and OMD's records indicated that two USTs had previously been present at the site [Appendix G]. One 4,000 gallon tank and one 1,000 gallon tank were installed in 1981 on the northwestern side of the property and used for the storage of gasoline. Records indicate that the tanks were removed on December 23, 1991. The tank was rendered unusable for storage of any fluids and the tank and its contents were disposed of in accordance with applicable local, state, and federal regulations. OCC's records did not indicate that there had been an incidence of a leak in the UST at the subject property. Upon removal of the UST, soil tests were conducted for benzene, toluene, ethylbenzene, xylenes, and TPH. All of the tests results were below EPA detection limits. For the TPH test, it is undocumented as to whether this test was for DRO or GRO.

4.14 State Institutional Control/Engineering Control Registries (property only)

There are no Institutional Controls/Engineering Controls listed either in Oklahoma's Brownfields Institutional Control database or in the county land records for the subject property. No tribal institutional control/engineering control registries were reviewed while conducting this Phase I TBA of the McAlester Armory. At the time of preparation of this report, such tribal registries were not readily available for review. Following cleanup of asbestos and lead in the armory building, DEQ will file a deed notice in the county courthouse on the subject property.

4.15 State Voluntary Cleanup Sites and Brownfield Sites within One-half Mile

The subject property does not have any Brownfield sites listed in the DEQ database. There are no active VCP sites within one-half mile of the subject property, listed in the DEQ VCP tracking database. No tribal lists of VCP or Brownfield sites were reviewed during the preparation of this Phase I TBA. At this time, such lists are not readily available for review.

4.16 State Environmental Complaints and Local Services Response

The DEQ Environmental Complaints and Local Services complaint database was searched for the subject property and no complaints were found (Ref. 18).

4.17 City Directories, Property Tax Files, Building Department Records, Zoning/Land Use Records

According to the McAlester Planning Department, the subject property and surrounding properties are zoned residential (Ref. 4). Currently, there are no plans to change or adjust zoning in the area. City directories, property tax files, and building department records were not reviewed.

4.18 National Register of Historic Places

The McAlester Armory was officially registered on the National Register of Historic Places on July 25, 1988 [Appendix H]. The site application was prepared in 1984. Since that time, no major changes have taken place on the outside façade. The armory appears to be in a similar condition today as it was during the time of application process.

As a result of being listed on the National Register, there may be certain restrictions in renovating the outside of the structure if federal funds are used in the rehabilitation process. The State Historic Preservation Officer (SHPO) should be consulted prior to any external modifications.

4.19 Oil and Gas Records

A search of the Oklahoma Corporation Commission Well Data System did not reveal the presence of any oil and gas production wells on the property, adjacent property, or directly upgradient (Ref 27)

4.20 Dry Cleaners

A search of DEQ's historic dry cleaner databases was performed (Ref. 28) and a search on yellowpages.com was performed (Ref. 29) to search for present day dry cleaners within one mile of the subject property. Appendix A lists dry cleaners from the historic databases as well as present day. The closest historic dry cleaner is located 0.57 miles southwest of the subject property. Yellowpages.com was searched for dry cleaners and

laundries in McAlester, Oklahoma. Three dry cleaners located within 1 mile of the subject property were identified (see below). The closest present day dry cleaner is located 0.80 miles southwest of the subject property. The dry cleaners are considered potential environmental conditions (PECs) according to ASTM 1528-06 (Ref. 30). For more information about the dry cleaners within 1 mile of the subject property, refer to Appendix A.

Present Day Dry Cleaners:

- 89er Dry Cleaners – located at 115 S 6th Street is 0.86 miles south of the subject property and is also shown on the historic dry cleaners lists indicating that it has been in operation for some time.
- 75 Cleaners – located at 115 South 3rd Street is 0.93 miles southwest of the subject property and is shown on the historic dry cleaners lists indicating that it has been in operation for some time.
- Woodmore's Laundry – located at 218 W Washington Avenue is 0.80 miles southwest of the subject property. This dry cleaner does not appear on the historic dry cleaner lists.

5.0 Site Reconnaissance and Interview

5.1 Methodology and Limiting Conditions

A site reconnaissance of the McAlester Armory was performed by Rebecca Marfurt, Alea Smith, Liberty Galvin and Johnathan McClary of the DEQ on August 5th, 2012. The site reconnaissance consisted of a visual inspection of the Armory building and its surrounding property.

During the August 5th, 2012 site reconnaissance, one sample was collected from the vent fan outside the IFR [Appendix A]. This sample had a lead concentration of 121 mg/kg, which is below the EPA residential soil screening level for lead of 400 mg/kg. On September 11, 2012 an additional sample was collected from the oil/water separator behind the main armory building. Results showed levels below 10 mg/kg in the gasoline range, diesel range, and lube oil range [Appendix A] (Ref. 4).

5.2 General Site Conditions

The McAlester Armory is a one-story building covering approximately 23,718 square feet with decorative stonework and cast concrete detailing. The Armory was constructed in 1936 by the Works Progress Administration. The property is bordered by 3rd Street on the west, Polk Street on the south, McAlester High School on the east, and by Lee Park to the north. The Armory has three principal facades, one accessing 3rd Street on the

west, one accessing Polk Street on the south, and one facing the shop area and Lee Park to the north. The surrounding area is residential in nature. The OMD has ceased to operate from the premises, and the armory was vacant at the time of the site reconnaissance.

5.2.1 Above Ground Storage Tanks (ASTs)

No ASTs were observed on the subject property.

5.2.2 Underground Features

A review of the OCC database did not indicate the presence of USTs at the subject property. Review of the Oklahoma Corporation Commission (OCC's) and OMD's records indicated that two underground storage tanks (UST) had previously been present at the site [Appendix G]. One 4,000 gallon tank and one 1,000 gallon tank were installed in 1981 on the northwestern side of the property and used for the storage of gasoline. Records indicate that the tanks were removed on December 23, 1991. The tank was rendered unusable for storage of any fluids and the tank and its contents were disposed of in accordance with applicable local, state, and federal regulations. OCC's records did not indicate that there had been an incidence of a leak in the UST at the subject property. Upon removal of the UST, soil tests were conducted for benzene, toluene, ethylbenzene, xylenes, and TPH. All of the tests results were below Environmental Protection Agency (EPA) detection limits. For the TPH test, it is undocumented as to whether this test was for diesel range organics (DRO) or gasoline range organics (GRO).

As per information in the database, there are six UST sites, two of which are listed as LUST cases, within a one-half mile radius of the subject property [See Section 4.12 and 4.13 for further details].

No sumps were observed during the site reconnaissance (Ref. 4). The Armory is served by municipal water. A fire hydrant was observed to the south of the Armory. Water is supplied from the City of McAlester. Sewage and waste water drain to the municipal sewer system. There were several outdoor roof drains on all sides of the main building. There were floor drains observed in the kitchen, men's latrine, and women's latrine during the site reconnaissance, all of which drain to the municipal sewer system. There were no observed UST vent pipes on the subject property [Appendix C and D].

5.2.3 Landfills and/or Dumping

There are no landfills on the subject property or adjoining properties. There was no dumping observed either on-site or at the adjoining properties, during the site reconnaissance. Grass appeared to be in good health along the south side of the Armory at the time of the site reconnaissance [Appendix C]. No apparent signs of environmental contamination were observed in this area (Ref. 4).

5.2.4 Impoundments

No impoundments were observed on the subject property during the site reconnaissance (Ref. 4).

5.2.5 Monitoring Wells

No monitoring wells were observed on the property at the time of the site reconnaissance (Ref. 4). The OWRB well log viewer was utilized to make a map of groundwater and monitoring wells within a 1 mile radius of the subject property. The closest monitoring wells to the subject property are located 0.24 miles south of the subject property. All water wells located within 1 mile are south of the subject property. The closest groundwater wells are within 0.42 and 0.43 miles of the subject property [Appendix A].

5.2.6 Disturbed/Stained Soil and Seeps

No stained soils or seeps were observed at the subject property during the site reconnaissance (Ref. 4).

5.2.7 Chemical Spills

No chemical spills were observed at the subject property. No spills were reported on the subject property from the Emergency Response Notification System (ERNS) database (Ref 26).

5.2.8 Farm Waste & Known Pesticide Misapplication

No farm waste or evidence of pesticide misapplication was observed at the subject property during the site reconnaissance (Ref. 4).

5.2.9 Discharges and Runoff from Adjacent Property Affecting the Site

The entire area surrounding the armory is paved. The slope of the paved area is away from the IFR.

5.2.10 Petroleum Products and Oil and Natural Gas Exploration

On September 11, 2012, samples were taken from the oil/water separator behind the main armory building and analyzed for Total Petroleum Hydrocarbons. Results showed levels below 10 mg/kg in the gasoline range, diesel range, and lube oil range [Appendix A]

A search of the Oklahoma Corporation Commission Well Data System did not reveal the presence of any oil and gas production wells on the property, adjacent property, or directly upgradient (Ref 27).

5.2.11 Asbestos

An asbestos inspection was completed at the subject property by Marshall Environmental Management, Inc. on March 8, 2012. Results of the asbestos inspection showed asbestos to be present in the floor tile and mastic in the main building. Asbestos is also present in the floor-tile, mastic, bedding mud, transite, and ceilings in outbuildings 4, 5, and 7. For a detailed description of the asbestos inspection results, see Appendix A.

5.2.12 Lead

A statewide sampling event for lead was conducted by C.H. Guernsey & Company for the OKARNG on all Armories containing IFRs (Ref 19). These sampling events led to the preparation of the "Indoor Firing Range Lead Issues Report" [Appendix F]. According to the report, the McAlester Armory was surveyed on May 4, 2005. Guernsey personnel collected wipe samples from the IFR on May 3, 2004. A sample was collected from the drill floor and one from the stairs leading to the IFR. No wipe samples were taken within the IFR as a result of the standing water on the floors. The IFR bullet catch system did not contain sand [Appendix F]. Lead contamination levels found in the samples are listed below:

- 291.6 ug/ft² of lead at the stairs leading to the IFR (sampled 5/3/2004).
- 116.0 ug/ft² of lead was found on the drill floor (sampled 5/3/2004).

The "Indoor Firing Range Lead Issues Report" for the McAlester Armory has been included in Appendix F. The IFR and the rooms indicated as having lead dust contamination exceeding the 40 µg/ft² standard constitute a recognized environmental condition (REC) for the purposes of this report.

A lead inspection was completed at the subject property by Marshall Environmental Management, Inc. on March 8, 2012. The lead inspection revealed lead-based paint on the armory windows, doors, parking stops, floors, stair rails, trim, and exterior siding in both the main armory building and outbuilding 3. Elevated levels of lead dust (>40 µg/ft²) were found on most of the floors in the main armory building and on the floors of outbuildings 2, 3, and 5. Two to three inches of standing water was present on the floor of the basement IFR, therefore no wipe samples were taken in that room during reconnaissance. For a detailed description of the lead inspection results, see Appendix A.

DEQ collected samples from two locations at the subject property. The first soil sample was collected outside of the IFR vent fan on August 23, 2012. Additional

samples were collected from the oil/water separator behind the main armory building on September 11, 2012. These samples were analyzed for Total Petroleum Hydrocarbons at the DEQ laboratory. Soil collected from the IFR vent fan area contained 121 mg/kg of lead, which is below the EPA residential soil screening level of 400 mg/kg. In addition, TPH levels in the oil/water separator were less than 10 mg/l, which is below the DEQ residential cleanup level for TPH of 50 mg/kg.

5.2.13 Transformers/PCB Equipment/Mercury

Five pole-mounted transformers were present on the northeast side of the main building. Three of the transformers appeared to be new, while the remaining two are in relatively poor condition and are most likely the same age of the original building structure. It is not clear whether any of the five pole-mounted transformers contain PCBs. Fluorescent light fixtures were observed in all rooms of the building during the site reconnaissance. These could potentially contain PCBs (polychlorinated biphenyls) in their ballast.

All fluorescent bulbs contain mercury and should be handled as Universal Waste unless documentation and/or sampling demonstrate they are not hazardous. In addition, dial-type thermostats are present in the building and may contain small amounts of liquid mercury. They should also be handled as Universal Waste if mercury is present.

5.2.14 Air Emissions and Wastewater Discharge

There are no current air emissions or waste water discharges from the subject property (Ref. 4, 18).

5.2.15 Industrial Activities

There are no industrial activities currently being conducted on the subject property. (Ref. 4) [Appendix C].

5.2.16 Hazardous Chemicals

There were no hazardous chemicals observed during site reconnaissance (Ref 4).

5.2.17 Unidentified Substance Containers

There were no unidentified substance containers observed during site reconnaissance (Ref 4).

5.3 Exterior Observations

The McAlester Armory is constructed of locally-quarried square-cut stone. Main entryways and overhead doors are arched, and art-deco style stone and cast concrete details are present in the facade. The main building entrance faces west and enters into the central drill floor. Above the arched doorway metal lettering spells "McAlester Armory 1936." Above this lettering is a sign that was installed after the 1980 armory renovation that says, "George Nigh National Guard Armory." Large stone parapets and original downspouts can be found on all sides of the building. Only one overhead garage bay door remains on the west-facing main entrance of the building. The remaining six garage bays were bricked in during the 1980 renovation, as well as all of the west-facing ground floor windows. No obvious signs of environmental contamination were observed on the building's exterior. The Armory is surrounded by residences, parks, and schools, consistent with the local zoning (Ref. 4).

The McAlester armory contains five additional outbuildings that are located on state property. One outbuilding (numbered Building 6 on the outbuilding floor plan of the inspection report) was not given to the OMD through the 1967 Quit Claim Deed, thus they remain property of the City of McAlester and will not be included in this report.

Building 7 is the largest of the outbuildings and is located directly east of the main armory building. This building likely originated as a garage in the 1940s, as the front single-door entrance is has been installed in a bricked-over bay door. A hallway leads directly from the front entrance of the building to eleven separate rooms. Walls in these rooms are largely painted drywall, painted brick, and wood veneer paneling. Brick mortar throughout the exterior walls of the building has been heavily worn or damaged, creating large gaps of 1-2 inches between bricks leading to the building's interior. This exposure has also created visible damage to the carpet, tiling, drywall, and wooden structures throughout the outbuilding.

Building 2 is a metal building located directly north of the main armory building and is currently being used as evidence storage for the McAlester Police Department. Building 3 is a cement garage east of Building 2. It consists of one large garage area on the east side of the building, with two smaller rooms connected on the west side of the building. Vinyl wall paneling in this building is in very poor condition.

Building 5 is a small cinder block construction building that was likely used for weapons, artillery, chemical, or fuel storage. There is a sign posted on the front of the building that reads, "No smoking, matches, open flame, or spark producing devices allowed within 50 feet." The interior of the building appears to be clean and empty.

Building 4 is located on the far east portion of the property. It is constructed of wood and transite paneling with overhead doors. The side paneling is in very poor condition. The lead and asbestos inspection completed by Marshall Environmental Management, Inc. on March 8, 2012 revealed the building to contain asbestos in the transite paneling. All painted surfaces in the building contain lead-based paint [Appendix A.]

5.4 Interior Observations

The armory is divided into three functional sections: a central drill floor area, the north Calvary unit wing of offices and classrooms, and the south infantry unit offices, classrooms, and storage areas. The drill floor is characterized by a very high vaulted ceiling. In the 1980s a drop ceiling was added, but the lower portion of the steel trusses is still exposed. The renovated drill floor walls are a combination of drywall coated with a painted vinyl veneer and brick masonry, which covers the original stone work. This continues throughout the main hallways of the building leading to the north and south entrances. The original wood block flooring has been removed and currently consists of a poured cement floor. At the east end of the drill floor stands a stage area that has been built out of brick and wood. Stairwells flank both sides of the stage area and lead to several rooms behind, including a weight room and offices. Original metal doors are present in these rooms, although the windows have been replaced. A mercury thermostat and furnace are also present in these rooms. Underneath the stage area lies the subterranean indoor firing range which contains about 1-2 inches of standing water. On the west side of the drill floor is the main entrance to the building, which consists of an overhead garage door flanked by two glass doors which had been replaced during the 1980 remodel. To the south of the drill floor is a large hallway which leads directly to the south entrance of the building facing Polk Street. This wing of the building also contains a vault and equipment storage area. The walls in this room consist of the original native stone and a window air conditioning unit that has been installed in the equipment room window. Rooms bordering the front of the south side of the building are covered with painted vinyl wall coverings from the 1980 remodel, and have carpet that has been installed over 9x9 floor tile. The remaining rooms on the south wing contain wood veneer wall paneling, 9x9 tile, and some carpeting. The men's latrine is in the far south end of the building and contains two floor drains.

To the north, a hallway leads directly to the remainder of the armory. The doors and door frames leading from the hallway to the rooms of the armory are original and have been painted with lead-based paint. A vault is also present in the north portion of the armory, as well as a main storage room. A window air conditioning unit is present in the room containing the vault. Original windows are present in the former garage room on the northeast side of the building, as well as 9x9 floor tile and an original door. The offices on the northwest side of the armory have windows that were installed during the 1980 renovation, as well as a window air conditioning unit installed in a closet. A women's latrine on the far north end of the building contains one floor drain. Double doors lead from the drill floor north to the former garage, which has been renovated to be the mess hall. It appears that the double doors at the entry to the mess hall have been built in a location of a former bay door. There is a floor drain in the preparation area of the kitchen.

During the site reconnaissance, no piping insulation was observed, although an inspection into areas not easily accessible was not completed. This type of piping, along with window mastic and specific tiles often used in armories of this age may contain asbestos and may exist within this armory. A specialized asbestos inspection was not completed

during this site visit. However, Marshall Environmental Management conducted an asbestos inspection of the buildings on the subject property on December 27, 2011.

5.5 Interviews

5.5.1 Interviews with Past and Present Owners of the Property

DEQ has had several conversations regarding environmental and safety issues at the armories, with various employees of the military department. The Oklahoma Military Department provided an "Indoor Firing Range Lead Issues Report" to the DEQ [Appendix F]. OMD also provided DEQ with access to their files on the McAlester Armory.

5.5.2 Interviews with Key Site Manager

There is no current key site manager for the property. Mr. Mel Priddy, Community Services Director, and Pete Stasiak, City Manager, City of McAlester, currently control access to the property. They were interviewed in order to gain the appropriate information for this report. The property is occasionally entered by city employees who use the subject property for storage.

5.5.3 Interviews with Operators and Occupants of the Property

An interview was not conducted with a prior operator or occupant of the property, as one was not available during the time in which this Phase I TBA was being conducted.

5.5.4 Interviews with State and/or Local Government Officials

On August 5, 2012, Rebecca Marfurt, Alea Smith, Liberty Galvin, and Johnathan McClary of the DEQ met Mel Priddy, Community Services Director for the City of McAlester, at the McAlester Armory. Mr. Priddy introduced Marfurt, Smith, Galvin, and McClary to the subject property and answered questions to the best of his knowledge on the subject property. Priddy led DEQ personnel inside the building and outbuildings and gave his knowledge about what the building was used for and what kinds of activities occurred there in the past. All areas of the building were observed noting any environmental conditions that might need.

- All sewage and waste water drain to the City of McAlester's sewage system.
- To Mr. Priddy's knowledge, no underground storage tanks were present onsite.
- The military had vacated the Armory in the latter part of 2010.
- It was unknown as to what type of vehicle work was done in the motor pool areas.

6.0 Findings

This Phase I Targeted Brownfield Assessment of the McAlester Armory was performed in accordance with the ASTM E 1527-05, a guide for conducting Environmental Site Assessments. The subject property is located in Section 31, Township 6 North, and Range 15 East SE ¼, SW ¼, in Pittsburg County, Oklahoma. The subject property address is 319 East Polk Avenue [at the southwest corner of 3rd and Polk streets] McAlester, 74502 [latitude 34.943280, longitude -95.761202] Summarized below are the major environmental findings of this Phase I TBA [See relevant sections of this report for further details on each finding].

- Review of OCC's and OMD's records indicated that two USTs had previously been present at the subject property [Appendix G]. One 4,000 gallon tank and one 1,000 gallon tank were installed reportedly in 1981 on the northwestern side of the property and used for the storage of gasoline. Records indicate that the tank was removed on December 23, 1991. The tank was rendered unusable for storage of any fluids and the tank and its contents were disposed of in accordance with applicable local, state, and federal regulations. OCC's records did not indicate that there had been an incidence of a leak in the UST at the subject property. Upon removal of the UST, soil tests were conducted for benzene, toluene, ethylbenzene, xylenes, and TPH. All of the tests results were below EPA detection limits. For the TPH test, it is undocumented as to whether this test was for DRO or GRO.
- No sites on the NPL, deleted NPL database, active or archived Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) database, RCRA database, ERNS list, State Voluntary Cleanup Program and State Brownfield Programs lists were identified on the subject property. The subject property is on the DEQ Site Cleanup Assistance Program's list for investigation and cleanup of environmental hazards.
- The DEQ database of historic dry cleaners was searched and yellowpages.com was searched for present day dry cleaners within 1 mile of the subject property. 12 historic dry cleaners and 3 present day dry cleaners were found. The closest historic dry cleaner is located 0.57 miles southwest of the subject property. The closest present day dry cleaner is located 0.80 miles southwest of the subject property. The dry cleaners are considered potential environmental conditions (PECs) according to ASTM 1528-06. For more information about the dry cleaners within 1 mile of the subject property, refer to Appendix A.
- Five pole-mounted transformers were present on the northeast side of the main building. Three of the transformers appeared to be new, while the remaining two are in relatively poor condition and are most likely the same age of the original building structure. It is not clear whether any of the five pole-mounted transformers contain PCBs. Fluorescent light fixtures were observed in all rooms of the building during the site reconnaissance. These could potentially contain PCBs (polychlorinated biphenyls) in their ballast.

- Fluorescent lighting ballasts are located throughout the building. The lighting ballasts are all in good condition. The lighting ballasts as well as dial type thermostats may be a source of mercury.
- There were no areas of stained soil, pits, ponds or lagoons, wells, septic systems, wells, pump jacks, storage tanks, drums observed on the subject property during the site reconnaissance (Ref. 4).
- The Armory is immediately bound by residential structures on all sides (Ref. 4)

7.0 Opinion and Recommendations

Due to the past use of the property and potential contamination found on the subject property, the environmental professionals working on this site believe that cleanup of lead and asbestos will be necessary.

8.0 Data Gaps

Property tax files, city directories, and building development records for the subject property were not reviewed during the preparation of this report. No tribal records were reviewed for this report.

9.0 Conclusions

DEQ has performed a Phase I Targeted Brownfield Assessment in conformance with the scope and limitations of ASTM Practice E 1527-05 of the McAlester Armory, located at 319 East Polk Ave., McAlester, Oklahoma (Section 15, Township 16N, Range 7W I.M., in McAlester County, Oklahoma), the property. Any exceptions to, or deletions from, this practice are described in Sections 8.0 and 11.0 of this report. This assessment has revealed no evidence of recognized environmental conditions in connection with the property except for the following: lead-based paint, lead dust, and asbestos.

The information provided in this assessment is to assist the City of McAlester in its revitalization planning as well as meet the All Appropriate Inquiry requirement of the landowner liability protections under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA, better known as Superfund – Ref. 2), as provided in the Small Business Relief and Brownfields Revitalization Act of 2002 (Public Law 107-118, Subtitle B – Ref. 3).

10.0 Additional Services

Additional services provided for this Phase I Targeted Brownfield Assessment include sampling of soil outside of the IFR vent fan, the oil/water separator, potential asbestos, lead-based paint, and lead dust sources including the remediation of the building [Appendix A].

11.0 Deviations

The following deviations from ASTM Practice E 1527-05 occur in this Phase I Targeted Brownfield Assessment. Tribal environmental lists, property tax files, city directories, and building development records for the subject property were not reviewed during the preparation of this report.

12.0 References

1. U.S. Environmental Protection Agency. (2006). Oklahoma Brownfields Assistance Agreement (No. RP96681001-0). Oklahoma City, State of Oklahoma. Unpublished Document.
2. U.S. Environmental Protection Agency. (1980). Comprehensive Environmental Response, Compensation, and Liability Act. (Public Law 96-510). Washington, DC: U.S. Government Printing Office.
3. U.S. Environmental Protection Agency. (2002). Small Business Liability Relief and Brownfields Revitalization Act. (Public Law 107-118, Subtitle B). Washington, DC: U.S. Government Printing Office.
4. Liberty Galvin, Rebecca Marfurt (2012). Field Notes for Site Reconnaissance of the McAlester Armory. August 28, 2012 and September 11, 2012. Unpublished Document.
5. C. F. Fisher, G. E. Williams, J.R. Culver, F.W. Clark, J.V. Chelf. (1970). U.S. Department of Agriculture, Soil Conservation Service: Soil Survey, Pittsburg County, Oklahoma. Series 1959, No. 12. Issued May 1971.
6. R.H. Bingham, R.L. Moore (1983). Oklahoma Geological Survey. Reconnaissance of the Water Resources of the McAlester and Texarkana Quadrangles, Southeastern Oklahoma, Hydrological Atlas 9. The University of Oklahoma, Norman, OK. [Scale 1:250,000]. 1983.
7. Federal Emergency Management Agency (FEMA). FEMA Issued Flood Maps. Last accessed April 9, 2013. <https://msc.fema.gov>.
8. U.S. Environmental Protection Agency. EPA NPL list. Last accessed April 9, 2013. <http://www.epa.gov/superfund/sites/npl/locate.htm>.
9. U.S. Environmental Protection Agency. EPA Deleted NPL list. Last accessed April 9, 2013. <http://www.epa.gov/superfund/sites/query/queryhtm/npldel.htm#Oklahoma>
10. U.S. Environmental Protection Agency. EPA Partially Deleted NPL list. Last accessed April 9, 2013. <http://www.epa.gov/superfund/sites/query/queryhtm/nplpdel.htm#Oklahoma>
11. U.S. Environmental Protection Agency. EPA Proposed NPL. Last accessed April 9, 2013. <http://www.epa.gov/superfund/sites/query/queryhtm/nplprop.htm#Oklahoma>

12. U.S. Environmental Protection Agency. EPA CERCLIS current and archived sites. Last accessed April 9, 2013. <http://cfpub.epa.gov/supercpad/cursites/srchsites.cfm>.
13. National Response Center. Emergency Response Notification System. Last accessed April 9, 2013. <http://www.nrc.uscg.mil/foia.html>.
14. U.S. Environmental Protection Agency. RCRA Info. Last accessed April 9, 2013. http://www.epa.gov/enviro/html/rcris/rcris_query_java.html.
15. Oklahoma Department of Environmental Quality. RCRA NOTIFIERS sorted by county and then city. Last accessed April 9, 2013. <http://www.deq.state.ok.us/LPDnew/HW/Notifiers/notifiersbycountycity.pdf>.
16. Oklahoma Department of Environmental Quality. State Landfill site list. Last accessed April 9, 2013. <http://www.deq.state.ok.us/LpDnew/swindex.html>.
17. DEQ SCAP website: <http://www.deq.state.ok.us/LPDnew/scapIndex.htm>.
18. DEQ Dataviewer: <http://maps.scigis.com/deq%5Fwq/>.
19. Guernsey, C.H. & Company (2005), Oklahoma Army National Guard. Indoor Firing Range Lead Issues Report. Unpublished Document.
20. Oklahoma Water Resources Board. <http://www.owrb.state.ok.us/wd/search/search.php>.
21. ASTM International. (2005). Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process. E 1527 – 05.
22. Oklahoma Corporation Commission. Public Utilities Division List of Regulated Companies. <http://www.occeweb.com/divisions/pud/utbycity.htm>.
23. City of McAlester: <http://www.cityofmcalester.com/index.aspx?nid=190>
24. USGS National Geochemical Survey: <http://tin.er.usgs.gov/geochem/doc/averages/countydata.htm>.
25. U.S. Environmental Protection Agency, Geographic Information System Data Set: http://www.epa.gov/region6/gis/data/kml_files/index.htm.
26. National Response Center. *Emergency Response Notification System*. <http://www.nrc.uscg.mil/foia.html>.
27. Oklahoma Corporation Commission Oil and Gas New Well Browse Database: www.occeweb.com.

28. Oklahoma Department of Environmental Quality. *DEQ historical dry cleaner databases*. DEQ Archives.
29. YP Intellectual Property LLC. *YP -Yellowpages.com*. Last accessed April 17, 2013. <http://www.yellowpages.com/>
30. ASTM International. (2006). Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process. E 1528-06.

13.0 Appendices

I Qualifications of Environmental Professional and Others Working on the Project

Rebecca Marfurt – Rebecca Marfurt holds a Bachelor’s Degree in Environmental Sciences from Southwestern University at Georgetown, Texas, a Master’s Degree in Aquatic Resources from Texas State University – San Marcos, and a Postbaccalaureate Certificate in Geographic Information Systems from Penn State University. She has three and a half years of experience at DEQ as an Environmental Programs Specialist in Water Quality Division and Land Protection Division.

Liberty Galvin – Liberty Galvin is finishing her Bachelor’s degree in Environmental Sciences at Oklahoma State University. During her time at the DEQ she has attended and completed the course on Phase I-II Environmental Site Assessments, and has the knowledge needed to perform targeted brownfield assessments.

Johnathan McClary – Johnathan McClary is an undergraduate student at the University of Oklahoma. Mr. McClary has two years of experience at the Oklahoma Department of Environmental Quality. He is a Technical Assistant with the Land Protection Division of the Oklahoma Department of Environmental Quality.

Alea Thacker – Alea Thacker holds a Masters Degree in Environmental Science from the University of Oklahoma. She served as a Technical Assistant for the Land Protection Division of the DEQ for several months. She currently worked in the DEQ Air Quality Division as an Environmental Programs Specialist.

Heather Mallory – Heather Mallory holds a Bachelor’s and Master’s Degree in Environmental Science from the University of Oklahoma. Mrs. Mallory has nine years of experience in environmental sampling and remediation. She is an Environmental Programs Specialist with the Land Protection Division of the DEQ. Her responsibilities include: Brownfields Revolving Loan Fund and Grant Coordinator, Targeted Brownfield Assessment Coordinator, project management of various Voluntary Cleanup sites across the state, conducting and reviewing Targeted Brownfield Assessments, serving on agency-wide GIS policy making committee, and training DEQ Land Protection Division staff on GPS receivers.

14.0 Background and Disclaimer

The purpose of an environmental site assessment is to identify actual or potential “recognized environmental conditions” that may result in liability or land use restrictions. The ASTM Phase I Environmental Site Assessment E 1527 – 05 is the minimum standard for environmental due diligence in the commercial real estate industry and meets the standard for All Appropriate Inquiry under the Small Business Liability Relief and Brownfields Revitalization Act of 2002. A diligent effort in accordance with generally accepted good commercial and customary standards and practices was undertaken to identify the “recognized environmental conditions” that might affect the redevelopment project. However, the identification of old hazardous waste sites is an evolving process; therefore, DEQ cannot state with absolute certainty that no other potential hazardous waste sites are located in the area. In no event shall the DEQ or its employees be liable for any damages, injury, loss, cost or expense whatsoever arising in connection with the use or reliance on the information contained in this report, except as otherwise provided by law.