

ENVIRONMENTAL CONDITION OF PROPERTY UPDATE REPORT

**RUFUS N. GARRETT, JR. USAR CENTER (AR009)
815 WEST 8TH STREET
EL DORADO, ARKANSAS 71730**



**Prepared By:
63d Regional Support Command
Directorate of Public Works, Environmental Division
230 R.T. Jones Road
Mountain View, California 94043**

April 2013

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1.0 INTRODUCTION

The 63d Regional Support Command (RSC) has prepared this Environmental Condition of Property (ECP) Update Report for a previous ECP Report that was completed at the Rufus N. Garrett, Jr. United States Army Reserve (USAR) Center (AR009) in February 2007. The facility is located at 815 West 8th Street in El Dorado, Arkansas, hereafter referred to as the "Site" or "Property".

1.1 PURPOSE OF ENVIRONMENTAL CONDITION OF PROPERTY (ECP) UPDATE REPORT

The primary purpose of the ECP Update Report is to identify any environmental conditions that may have changed materially since the completion of the original ECP Report and to identify any Recognized Environmental Conditions at the Property prior to the scheduled property disposal.

1.2 SCOPE OF SERVICES

This ECP Update Report has been performed for the Rufus N. Garrett, Jr. USAR Center (AR009) in accordance with AR 200-1 and ASTM D 6008-96 (2005), *Standard Practice for Conducting Environmental Baseline Surveys* (for excess properties). Under ASTM D 6008-96 (2005), the following components were completed: interviews, government record reviews, visual inspection of the Property and adjoining properties, and a declaration by the environmental professional responsible for the assessment.

2.0 BACKGROUND

2.1 PHYSICAL DESCRIPTION

The USAR Center is on 2.83 acres of land with two permanent buildings, a 14,400 square-foot Training Building and a 1,455 square-foot Storage Building. The Site is currently vacant and has been since 10 September 2011.

Based on a review of historical sources dating back to 1892, the Site remained undeveloped until the U.S Government purchased the Property in 1959 and the Site buildings were constructed in 1961. The USAR has historically conducted administrative and training activities at the Site. The Storage Building was originally constructed as an Organizational Maintenance Shop (OMS), where light vehicle and equipment maintenance was performed. Somewhere between 2000 and 2001, the OMS was converted into what is the present day Storage Building.

2.2 PREVIOUS ECP FINDINGS

In February 2007, Terraine-EnSafe Joint Venture (TEJV) under contract to the U.S. Army Corps of Engineers (USACE), Louisville District, completed an ECP at the Property in accordance with ASTM D 6008. The text portion of the previous ECP Report is included in Appendix A. According to the report, TEJV found no significant issues relating to the environmental condition of the property. Although no justification was given, TEJV classified the Site as an ECP Category Type 2 property, which, in accordance with

ASTM D5746-98 (2002), is defined as an area or parcel of real property where only the release or disposal of petroleum products or their derivatives has occurred.

3.0 INTERVIEWS

3.1 MR. NICK FLANNERY, 63D RSC

Mr. Nick Flannery is a contract employee for the 63d RSC and performed a site inspection of the Property and adjacent properties on 8 May 2012. He confirmed that no conditions on the Property have changed materially since the 2007 ECP Report or his previous inspection on 9 November 2011. Mr. Flannery did not provide any information that was material to recognized environmental conditions associated with the Property.

4.0 REVIEW OF REGULATORY DATABASE INFORMATION

An update of the 14 July 2006 electronic database search of environmental records for the Property and surrounding area is not necessary, because conditions on the Property and in the area surrounding the Property have not changed materially. Surrounding property includes residential housing to the west, south, and east; and a Church to the north. Activities associated with these land use types are not anticipated to impact the environmental condition of the Property. The 2007 ECP Report did not identify and “high-risk” sites within ASTM minimum search distances.

There is no evidence that Native American human remains or associated funerary objects are present on the Property. Due to the location of this Site and its developed nature, intact deposits are unlikely.

5.0 SITE RECONNAISSANCE

Site reconnaissance was performed by Mr. Flannery on 9 November 2011 and 8 May 2012 to characterize on-site conditions and assess surrounding property uses that may have affected the condition of the Property.

The USAR Center was vacant at the time of site reconnaissance and has been since 10 September 2011. Other than this, no physical changes to the Site or adjoining properties, since the 2007 ECP, were observed during the site inspection. No evidence of recognized environmental conditions was observed during the visual site inspection of the Property.

Mr. Chris Kinslow, 63d RSC Area Environmental Manager, conducted a site visit on 2 October 2012 in support of an asbestos re-inspection survey. During his site visit, Mr. Kinslow inspected the interior and exterior of both buildings and the property. Mr. Kinslow did not identify any changes to the buildings, property, or surrounding properties that would have occurred since the facility was vacated in 2011.

6.0 FINDINGS SINCE PREVIOUS ECP

This section documents supplemental investigations and/or findings associated with the Property since the April 2007 ECP. Copies of referenced documents are included in Appendix B.

- Architectural Survey, January 2011. An *Architectural Survey of 3 US Army Reserve Centers in the State of Arkansas*, dated January 2011, was prepared by Brockington Cultural Resources Consulting (Brockington) on behalf of USACE, Mobile District. According to the report, three USAR Centers, including Rufus N. Garrett, Jr. USAR Center, were evaluated for inclusion in the National Register of Historic Places (NRHP). The survey concluded that the buildings located at the Rufus N. Garrett, Jr. USAR Center were not eligible for the NRHP.
- SHPO Concurrence Letter, April 2011. The 63d RSC sent a letter to the Department of Arkansas Heritage, State Historic Preservation Office (SHPO), on April 4, 2011, summarizing an archaeological assessment that was performed at the Property in February 1997. According to the 1997 assessment, the Property was assessed as having a low archaeological sensitivity and too little potential to warrant further archaeological investigation. The Arkansas Heritage Commission concurred with this recommendation in a letter dated August 25, 1997. The April 2011 letter also included a summary of the findings of the 2011 Architectural Survey prepared by Brockington, which recommended that the buildings located at the Rufus N. Garrett, Jr. USAR Center were not eligible for the NRHP. The SHPO concurred with this finding and returned a copy of the April 2011 letter to the 63d RSC stamped with "No Affect" on May 18, 2011.
- USFWS Correspondence, June 2011. The 63d RSC, sent a letter to the U.S. Fish and Wildlife Service (USFWS), dated June 27, 2011. According to the letter, the USAR determined that the closure of Rufus N. Garrett, Jr. USAR Center will have no effect on any federally-listed threatened and endangered species or designated critical habitat. The 63d requested a response from the USFWS within 30 days and assumed concurrence if no response was received. A response letter from the USFWS was not received.
- Report on Status of Asbestos Containing Materials at AR009 Garrett USAR Center and Memorandum for Record, 4 October 2012. A re-inspection survey was conducted at the subject property on 2 October 2012 to identify the presence of asbestos containing material (ACM) and suspect ACM. The survey was conducted by Mr. Kinslow, a certified asbestos inspector, and included an inspection of both buildings. Although the 2007 ECP report and a 1997 Asbestos Building Inspection for the facility reported that no ACM was present at the facility, there were concerns stemming from an asbestos analysis lab report dated 5 December 1990. The October 2012 survey confirmed that all previously identified ACM in the Training Building had either been removed or had been incorrectly identified in the 1990 report, with the exception of roof tar located on the addition to the Training Building and four mudded, pipe elbows. There is no documentation that the addition's roof has been replaced since its original construction in 1975, so the roofing tar may contain asbestos. The four pipe elbows are located in the ceiling above the break room in the Training Building. Although visible during the inspection, they were inaccessible for the surveyor to

touch and therefore could not be confirmed as fiberglass. All other pipe fittings and thermal systems insulation that had been previously identified as ACM was field-verified to be fiberglass during the October 2012 survey. The Storage Building had not been inspected during previous surveys. No AM or suspect ACM was identified during the October 2012 survey.

- Radiological Clearance, July 2012. A Final Radiological Site Assessment Report (RSAR), Rufus N. Garrett, Jr. U.S. Army Reserve Center (AR009), El Dorado, Arkansas (December 2011); and Memorandum for Record, Subject: Results from the Radiological Survey at Rufus N. Garrett, Jr. U.S. Army Reserve Center in El Dorado, AR (23 December 2011) are included at Appendix B. According to the RSAR, there was no record that the USAR stored or used radiological commodities at the USAR Center. It was assumed that the USAR military units may have used the buildings on the Property to store and use radiological commodities typical of Army inventory, which likely contained some low-level radiological materials associated with illuminating military devices such as weapon sights, compasses, and aiming circles. The USAR Center closed in 2011. There is no evidence to suggest that any radiological commodities were improperly managed or that any radiological material was released. All radioactive materials have been removed from the property. The RSAR found no evidence of radiological contamination or radioactive material present and concluded the Property to be radiologically non-impacted. On 23 December 2011, the Department of the Army, Office of the Assistant Chief of Staff for Installation Management concluded the site is free of radiological concerns and that no further action is required.

7.0 CONCLUSIONS

The 63d RSC has performed an Environmental Condition of Property Update Report in accordance with AR 200-1 and applicable ASTM standards. Under ASTM D 6008-96 (2005), the following components were completed: interviews, government record reviews, visual inspections of the Property and adjoining properties, and the declaration by the environmental professional responsible for the assessment.

This ECP Update Report did not identify any current recognized environmental conditions at the Property during the visual site inspections or interviews with personnel knowledgeable about operations at the Property. The previous ECP (February 2007) classified the Site as an ECP Category Type 2 which, in accordance with ASTM D5746-98 (2002), is defined as an area or parcel of real property where only the release or disposal of petroleum products or their derivatives has occurred. However, TJEV provided no evidence of a petroleum release or justification for the ECP Category Type 2 designation.

Based on our review of available documents, a site reconnaissance, and interviews with persons knowledgeable of the Property, it is the opinion of this ECP Update Report that the Property be re-categorized as an ECP Category Type 1 property, which in accordance with ASTM Designation D5746-98 (2002), is defined as an area or parcel of real property where no release or disposal of hazardous substances or petroleum

products or their derivatives has occurred (including no migration of these substances from adjacent properties).

8.0 DECLARATION OF ENVIRONMENTAL PROFESSIONAL

I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in §312.10 of 40 CFR 312 and I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject Property. A copy of my resume is provided in Appendix C.

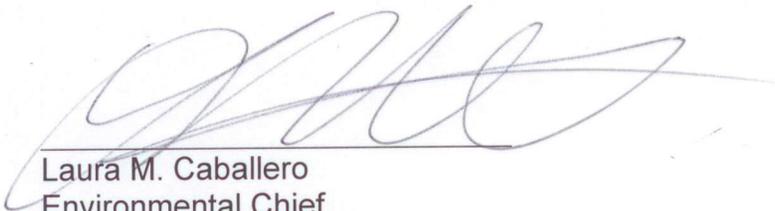


Charles Martin
Area Environmental Manager
63d Regional Support Command

April 30, 2013
Date

9.0 PRIOR ECP MEETS OR EXCEEDS ASTM REQUIREMENTS

The original ECP (February 2007) was reviewed and found to meet the requirements set forth in §4.6.2 of ASTM D 6008-96(2005) and the narrative discussion and findings of that report are incorporated by reference into this ECP Update Report as if contained here in its entirety.



Laura M. Caballero
Environmental Chief
63d Regional Support Command

April 30, 2013
Date

10.0 POINTS OF CONTACT

Please contact Mr. Charles Martin at (501) 771-8928 or Ms. Laura Caballero at (650) 279-9112 for further information.

11.0 PROPERTY CLASSIFICATION

I have reviewed this ECP Update and concur that the Property should be classified as a Type 1 property, in accordance with ASTM Designation D 5746-98 (2002), an area or parcel of real property where no release, or disposal of hazardous substances or petroleum products or their derivatives has occurred (including no migration of these substances from adjacent properties).



FOR THE COMMANDER

STEWART R. FEARON
COL, EN
Regional Engineer

7 MAY 2013
Date

APPENDIX A
PREVIOUS ECP 2007 (TEXT ONLY)

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FINAL

**ENVIRONMENTAL CONDITION OF
PROPERTY REPORT**

**RUFUS N. GARRETT, JR.
U.S. ARMY RESERVE CENTER (AR009)
815 WEST 8TH STREET
EL DORADO, ARKANSAS 71730**

Prepared For:

**U.S. Army Corps of Engineers — Louisville District
Engineering Division — Environmental Engineering Branch
600 Dr. Martin Luther King, Jr. Place
Louisville, Kentucky 40202-2232**

February 6, 2007

CERTIFICATION

All information/documentation provided accurately reflects the environmental condition of the property. This Environmental Condition of Property (ECP) Report is in general accordance with the U.S. Department of Defense (DoD) requirements for completion of an ECP.

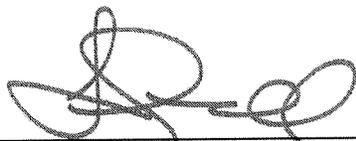


JAMES WHEELER II
Chief, Environmental Division
90th Regional Readiness Command

13 Feb 07

DATE

The undersigned certifies the contents of this report are in general accordance with DoD policies for the completion of an ECP.



LENARD P. GUNNELL, P.G.
Project Geologist
U.S. Army Corps of Engineers

February 6, 2007

DATE

EXECUTIVE SUMMARY

The Terraine-EnSafe Joint Venture (TEJV), under contract to the U.S. Army Corps of Engineers, Louisville District, has prepared this Environmental Condition of Property (ECP) Report for the Rufus N. Garrett, Jr. U.S. Army Reserve (USAR) Center (Facility ID AR009), hereafter referred to as the "Site" or "USAR Center." The Site is located at 815 West 8th Street in El Dorado, Union County, Arkansas.

This ECP Report was conducted in conformance with primary Department of Defense (DoD) and Army guidance, the DoD's Base Redevelopment and Realignment Manual, DoD 4165.77-M, Army regulations and the American Society for Testing and Materials Designation D 6008-96 (2005), *Standard Practice for Conducting Environmental Baseline Surveys*, as secondary guidance when it was not inconsistent with the primary guidance.

This ECP Report details the history of the property, including the USAR and any prior tenant uses of the Site and the resulting environmental condition of the property.

The USAR Center is on 2.83 acres of land with two permanent structures, a 14,400-square-foot Training Building and a 1,455-square-foot Storage Building. The site is currently occupied by Detachment 1 of the 321st Material Management Center.

Based on a review of aerial photographs and U.S. Geological Survey topographical maps dating back to 1936, the Site was an undeveloped lot prior to the U.S. government's purchase in 1959. The two buildings on the Site were constructed in 1961.

Areas of potential environmental concern were reviewed and the TEJV found no significant concerns relating to environmental condition of the Site. The vehicle wash rack on the Site did not have an associated oil-water separator, so the potential exists for residual petroleum products or their derivatives to have been released to the surrounding environment from this location. In accordance with DoD policy defining the classifications (see S.W. Goodman Memorandum dated October 21, 1996), the Site has been classified as Category 2. This classification does not include categorizing the property based on *de minimis* conditions that generally do not present material risk of harm to the public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

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List of Acronyms and Abbreviations

ACM	asbestos-containing material
ADEQ	Arkansas Department of Environmental Quality
AST	aboveground storage tank
ASTM	American Society for Testing and Materials
BRAC	Base Realignment and Closure Act
BRRM	Base Redevelopment and Realignment Manual
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	CERCLA Information System
CFR	Code of Federal Regulations
CORRACTS	Corrective Action Sites
DoD	Department of Defense
EBS	Environmental Baseline Survey
ECCI	Environmental, Compliance & Construction, Inc.
ECP	Environmental Condition of Property
EDR	Environmental Data Resources, Inc.
ERNS	Emergency Response Notification System
FEMA	Federal Emergency Management Agency
HUD	Housing and Urban Development
kg	kilogram
LBP	lead-based paint
LQG	large-quantity generator
LUST	leaking underground storage tank
MEP	military equipment parking
NFRAP	No Further Remedial Action Planned
NPL	National Priorities List
OMS	organizational maintenance shop
OWS	oil-water separator

PCB	polychlorinated biphenyl
pCi/L	picocuries per liter
POL	petroleum, oil, and lubricants
PMT	pole-mounted transformer
POV	privately owned vehicle
PWS	Public Water Supply
RCRA	Resource Conservation and Recovery Act
RQ	reportable quantity
RRC	Regional Readiness Command
SQG	small-quantity generator
TEJV	Terraine-EnSafe Joint Venture
TSD	treatment, storage, and disposal
USACE	U.S. Army Corps of Engineers
USACHPPM	U.S. Army Center for Health Promotion and Preventive Medicine
USAR	U.S. Army Reserve
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USGS	U.S. Geological Survey
UST	underground storage tank
VCP	Voluntary Cleanup Program
VWR	vehicle wash rack

1.0 INTRODUCTION

The Terraine-EnSafe Joint Venture (TEJV), under contract to the U.S. Army Corps of Engineers (USACE) Louisville District, was authorized to prepare an Environmental Condition of Property (ECP) Report for the Rufus N. Garrett, Jr. U.S. Army Reserve (USAR) Center (Facility ID AR009), in response to the Base Realignment and Closure Act (BRAC) 2005 legislation. The work was performed under Contract No. W912QR-04-D-0044, Delivery Order No. 0008. The facility located at 815 West 8th Street in El Dorado, Union County, Arkansas, is hereafter referred to as the "Site" or "USAR Center." In support of the ECP, a visual reconnaissance of the Site was conducted on August 16, 2006. The purpose of the reconnaissance was to visually obtain information indicating the likelihood of recognized environmental conditions in connection with the Site.

1.1 PURPOSE OF ENVIRONMENTAL CONDITION OF PROPERTY

The Military Department with real property accountability shall assess, determine, and document the environmental condition of all transferable property in an ECP Report. This ECP Report is based on readily available information. Pursuant to the Department of Defense's (DoD's) policy, set forth in the Base Redevelopment and Realignment Manual (DoD 4165.66-M, March 1, 2006) Section C8.3 (BRRM), the primary purposes of the ECP Report include the following:

- Provide the Army with information it may use to make disposal decisions.
- Provide the public with information relative to the environmental condition of the property.
- Assist in community planning for the reuse of BRAC property.
- Assist Federal agencies during the property screening process.
- Provide information for prospective buyers.
- Assist prospective new owners in meeting the requirements under U.S. Environmental Protection Agency's (USEPA) "All Appropriate Inquiry" regulations.
- Provide information about completed remedial and corrective actions at the property.
- Assist in determining appropriate responsibilities, asset valuation, and liabilities with other parties to a transaction.

The ECP Report contains the information required to comply with the provisions of 40 Code of Federal Regulations (CFR) Part 373, which require that a notice accompany contracts for the sale of, and deeds entered into, for the transfer of federal property on which any hazardous substance was stored, released or disposed of. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Section 120(h) stipulates that a notice is required if certain quantities of designated hazardous substances have been stored on the property for one year or more — specifically, quantities exceeding 1,000 kilograms (kg) or the reportable quantity (RQ), whichever is greater, of the substances specified in 40 CFR 302.4 or one kg of acutely hazardous waste as defined in 40 CFR 261.30. A notice is also required if hazardous substances have been disposed of or released on the property in an amount greater than or equal to the RQ. Army Regulation 200-1 requires that the ECP Report address asbestos, lead-based paint (LBP), radon and other substances potentially hazardous to human health.

This ECP Report used the American Society for Testing and Materials (ASTM) Designation D 6008-96 (2005), *Standard Practice for Conducting Environmental Baseline Surveys* as a guideline when not inconsistent with the BRRM, CERCLA § 120, Army regulations and other applicable Army guidance.

1.2 SCOPE OF SERVICES

This ECP covers the 2.83-acre USAR Center located at 815 West 8th Street in El Dorado, Arkansas. The property is bounded by 8th Street and a church to the north; Murphy Street, a residential area, and James Simpson's Garage to the west; 7th Street then residential areas to the south; and residential areas to the east. A general Site location map, Site map, historical topographic maps and historical aerial photographs, and a Federal Emergency Management Agency (FEMA) flood plain map are provided in Appendix A. Appendix B provides photographs taken during the August 16, 2006 Site reconnaissance. Appendix C provides chain-of-title information. Historical environmental documents and reports are provided in Appendix D. The environmental database report is provided in Appendix E.

This ECP Report classifies the property into one of seven DoD Environmental ECP categories as defined by the S.W. Goodman Memorandum dated October 21, 1996. The property classification categories are as follows:

- Category 1: Areas where no release or disposal of hazardous substances or petroleum products has occurred (including no migration of these substances from adjacent areas).
- Category 2: Areas where only release or disposal of petroleum products has occurred.

- Category 3: Areas where release, disposal, and/or migration of hazardous substances has occurred, but at concentrations that do not require a removal or remedial response.
- Category 4: Areas where release, disposal, and/or migration of hazardous substances has occurred, and all removal or remedial actions to protect human health and the environment have been taken.
- Category 5: Areas where release, disposal, and/or migration of hazardous substances has occurred, and removal or remedial actions are underway, but all required remedial actions have not yet been taken.
- Category 6: Areas where release, disposal, and/or migration of hazardous substances has occurred, but required actions have not yet been implemented.
- Category 7: Areas that are not evaluated or require additional evaluation.

1.3 ASSUMPTIONS AND LIMITATIONS

This report was prepared to permit formulation of an opinion of the environmental condition of the Site. Opinions on the environmental conditions at the Site are based on information from the visual reconnaissance, interviews, and collection and review of readily available information. New information or changes in Site use could require a review and possible modification of the findings and conclusions contained in this report.

The information obtained from the USAR, the USAR's representatives, individuals interviewed and prior environmental reports was considered to be accurate unless reasonable inquiries indicated otherwise. Conditions observed were considered representative of similar areas that were not accessible unless otherwise indicated.

This ECP Report presents a summary of readily available information on the environmental conditions of, and concerns relative to, the land, facilities, and real property assets at the USAR Center. Its findings are based on a record search of readily available documents, a thorough review of the applicable and relevant documents, a visual reconnaissance conducted on August 16, 2006, and interviews with personnel knowledgeable about the Site and its history. Extensive environmental investigations, reports, and Site historical documents were reviewed in support of this ECP. Information obtained from these other studies is reflected within this report by reference. A complete list of references is provided as Section 9.0.

All Site buildings were visually inspected during the Site reconnaissance. However, a 100% visual reconnaissance of each building (e.g., attics, crawl spaces, etc.) was not practical due to accessibility restrictions. No sampling or analysis of any media was conducted during this survey.

2.0 SITE LOCATION AND PHYSICAL DESCRIPTION

The visual Site reconnaissance included a driving tour of the facility and the surrounding area, and a walking assessment of the developed area of the Site and buildings including the Training Building and the Storage Building, which was formerly an organizational maintenance shop (OMS). The visual reconnaissance was conducted by TEJV personnel on August 16, 2006, to field-verify information produced in the document review and to identify recognized environmental conditions of property. All roads on the Site accessible by two-wheel drive vehicle were driven during the reconnaissance.

A reconnaissance of the Site perimeter was conducted to evaluate adjacent property uses that could contribute to any environmental contamination detected on the Site. TEJV personnel drove on roads along the perimeter and in the surrounding area to visually identify any contiguous properties that appear, in TEJV's professional judgment, to have contamination that could migrate to the Site. The findings of the perimeter survey are presented in Section 4.0.

2.1 SITE LOCATION

The Site address is 815 West 8th Street in El Dorado, Union County, Arkansas. As shown on Figure 1 in Appendix A, the Site is in a developed area in northwest El Dorado. The Site is bordered by James Simpson's Garage and a residential area to the west, residential areas to the south and east, and a church to the north.

2.2 ASSET INFORMATION

Facility Name and Address: Rufus N. Garrett, Jr. USAR Center
815 West 8th Street
El Dorado, Arkansas 71730

Property Owner: U.S. Government

Date of Ownership: June 18, 1959

Current Occupant: Detachment 1 of the 321st Material Management Center

Zoning: R-1, Single Family Residential

County, State: Union County, Arkansas

USGS Quadrangle: El Dorado West, Arkansas

Section/Township/Range: Section 20, Township 17 South, Range 15 West

Latitude/Longitude: 33° 13' 29.6" N; 92° 40' 30.7" W

Legal Description: All those certain pieces or parcels of land being Lots 12 through 22, Block 1 of F.L. Dumas Subdivision No. 2, situated and lying in the Southeast $\frac{1}{4}$ of the Southwest $\frac{1}{4}$ of Section 20, Township 17 South, Range 15 West in the City of El Dorado, Union County, State of Arkansas.

2.3 PHYSICAL DESCRIPTION

A Site layout of the USAR Center is provided as Figure 2 in Appendix A. Photographs are provided in Appendix B. Photographs 1 through 8 show the adjacent properties. Photographs 9 through 26 show the Training Building area, the interior and exterior of the building, and specific environmental conditions or other Site-specific features. Photographs 27 through 42 show the Storage Building area, the interior and exterior of the building, and specific environmental conditions or other Site-specific features.

The USAR Center is located on 2.83 acres of land with two permanent structures: a 14,400-square-foot Training Building and a 1,455-square-foot Storage Building. Both buildings were constructed in 1961 of concrete block with brick veneer on a concrete slab. During the Site reconnaissance, the painted surfaces were observed to be in good condition and no peeling paint was observed. The present-day Storage Building was originally constructed for use as an OMS. According to USAR personnel, the OMS was converted to the Storage Building in 2000 or 2001.

In addition to the Training Building and Storage Building, the Site also contains five privately owned vehicle (POV) parking lots and a fenced military equipment parking (MEP) area. Two steel, mobile storage container boxes within the MEP fenced area stored field cooking equipment. Approximately one-third of the Site is considered impervious (asphalt parking areas, driveways, concrete walkways, building footprints, etc.) while the remainder is covered by lawn. Vehicle access is via entrances from 7th Street and Murphy Street.

Topographically, the Site slopes from south to north. No signs of erosion, excavation, or fill were observed on the Site. According to USAR personnel, no offsite soil or fill material has been brought onto the Site nor has any significant re-grading occurred on the Site.

The Training Building includes classrooms, a kitchen, restrooms, offices, an arms storage room, and mechanical room. The interior of the building appeared to be well maintained during the August 16, 2006 Site reconnaissance. Classrooms and the kitchen occupy the southern part of the Training Building. No concerns were identified in the classrooms. The kitchen is not in use; a grease trap associated with the kitchen is by the eastern outside wall. During the Site visit, the grease trap was opened and inspected. No grease was observed in the trap and it appeared in good condition. Offices, restrooms, an arms storage room, and a mechanical room occupy the northern part of the Training Building. No concerns were identified in the offices or restrooms. The arms storage room is currently used to store infantry small arms and ammunition.

An indoor firing range was formerly located in the mechanical room of the Training Building. The range was closed in 1996 by American Asbestos, Inc. Details regarding the indoor firing range are presented in Section 3.5.4. The mechanical room is accessible from an outside door only. Four 5-gallon paint cans and 30 to 40 used fluorescent tubes were stored in the room, along with the heating and air-conditioning equipment. According to USAR personnel, used fluorescent tubes are sent offsite for recycling. Small quantities of cleaning chemicals were stored in a janitor's closet. Floor drains in the restrooms and in the kitchen collect condensate from the chillers/refrigerators and facilitate floor cleaning. The floor drains discharge into the public sanitary sewer that serves the Site. No evidence of chemical or petroleum releases was observed inside any room in the Training Building.

Northeast of the Training building is a concrete pad with a Russian anti-aircraft gun confiscated by the unit during the Persian Gulf War. East of the Training Building is a wooden gazebo that was added to the Site in 1996.

The Storage Building is a one-story, rectangular structure located within the chain-link security fencing south of the Training Building. The interior of the Storage Building is an open area separated into sections by chain-link fencing and storage shelves. During the Site visit, the area was being used to store soldiers' field equipment. A concrete block storage room is attached to the Storage Building's southern side. When the building was an OMS, this room was used as a petroleum, oil, and lubricant (POL) storage area. After the building was converted, it was used to store soldiers' field equipment. An out of service forklift and an over-pack drum filled with what appeared to be clean sand were also in this area. A restroom and flammable materials storage room are in the northeastern corner of the building. There were two flammable materials storage cabinets inside the flammable materials storage room, which were being used to store items such as bleach, brake fluid, and paint in small quantities.

A 1998 Historical Architectural Report contained a figure dated August 29, 1998, showing a "Vehicle Wash Rack" north of the Storage Building (former OMS). During the Site visit, no evidence of a vehicle wash rack (VWR) was observed in the location depicted in the 1998 figure. USAR personnel confirmed the VWR was north of the Storage Building and it was reportedly removed when the OMS was converted to the Storage Building. According to previous reports and USAR personnel, an oil-water separator (OWS) was not associated with the VWR. No oil stains or any other stains were observed in what was believed to be the VWR area. The dates the VWR was in place and in use are not known, but it is estimated to be from 1961 to prior to 1994 (a 1994 aerial photograph shows the VWR had already been removed).

North of the Storage Building and within the chain-link security fencing are two steel, mobile storage container boxes used to store field cooking equipment, and the MEP area. There were three vehicles in the MEP area, each with an oil drip pan positioned beneath it. No oil staining or any other staining was observed in the MEP area.

2.4 SITE HYDROLOGY AND GEOLOGY

2.4.1 Surface Water Characteristics

Appendix A provides a topographic map (Figure 1) of the Site and surrounding area. As shown on the map, the Site slopes from south to north and is approximately 234 feet above mean sea level. The Site drains toward 8th Street. Four storm water drains were observed on the Site in the following locations: one each in the northeast corner of both POV lots; one in the MEP area north of the Storage Building; and one in the northwest corner of the property near the intersection of Murphy Street and 8th Street. No surface water bodies are present on the Site or adjacent areas. The nearest surface water body is an unnamed intermittent stream 0.6 mile west. The stream flows to the Smackover Creek, 5.4 miles north-northeast of the Site.

According to the FEMA Flood Insurance Rate Map (Figure 10) for the City of El Dorado, Arkansas (Community-Panel Number 050207 0010 B, November 15, 1979), the Site is in "Zone C." Zone C is defined by FEMA as "areas of minimal flooding." The Site is outside the 100-year and 500-year flood zones.

2.4.2 Hydrogeological Characteristics

Based on the Union County soils map from the U.S. Department of Agriculture (USDA) Natural Resource Conservation Service, the predominant soil types on the Site are:

- ScC — Sacul-Sawyer complex, 1 to 8 percent slopes
- WsC — Warnock-Smithdale complex, 1 to 7 percent slopes

Sacul-Sawyer complex soils are very deep, moderately well-drained soils that formed in loamy and clayey marine sediments. Permeability is slow.

Warnock soils are deep, moderately well-drained soils that formed in loamy marine sediments. Permeability is moderate. Smithdale soils are very deep, well-drained soils that formed in loamy marine sediments.

Sacul-Sawyer complex soils are listed as hydric by the Natural Resource Conservation Service under certain circumstances such as in depressions. Because the Site is not located in a depression, it is not likely that Site soils comprised of Sacul-Sawyer complex soils are hydric. A complete discussion of the occurrence of hydric soils in Sacul-Sawyer complex soils is provided in Appendix D. Warnock-Smithdale complex soils are not listed as hydric by the Natural Resource Conservation Service.

There are three primary aquifers in the El Dorado area. They are the Cockfield, Upper Sparta, and Lower Sparta. The Cockfield aquifer is used primarily as a domestic drinking-water supply. The Upper Sparta is used for industrial and municipal purposes. The Lower Sparta (Greensand) aquifer is used for domestic supply and industrial purposes. According to an Environmental Baseline Survey (EBS) completed

for the Site in March 1995, due to the highly industrialized state of the El Dorado area there are numerous potential threats to groundwater, particularly the shallow Cockfield aquifer. The Arkansas Department of Environmental Quality (ADEQ) and the Arkansas Soil and Water Conservation Commission maintain an extensive groundwater monitoring program for the area. Because the Sparta aquifer is a major source of water supply in much of central and southern Arkansas and northern Louisiana, heavy pumpage from the Sparta aquifer has resulted in substantial drawdown of its potentiometric surface in some areas including the cities of Pine Bluff, Magnolia, and El Dorado.

No wells or springs were observed on the Site. The Site and surrounding area are served with public water by the City of El Dorado. A database search was conducted for federal U.S. Geological Survey (USGS), federal Public Water Supply (PWS) System wells, and state-registered wells within one mile of the Site (see pages A-7 to A-15 in the Environmental Data Resources [EDR] Report in Appendix E). No PWS wells were identified on databases for sites within one mile. One water supply well was reported within one mile. The well was reported to be approximately one-half mile south of the Site and 712 feet deep.

Site-specific groundwater flow direction was not available. However, based on the topography in the Site vicinity, shallow groundwater flow is expected to be generally west to northwest, toward unnamed intermittent streams.

The City of El Dorado is within the Gulf Coastal Plain Physiographic region. Information provided in environmental databases indicated that the lithology underlying the Site consists of the Tertiary-aged Claiborne Group.

2.5 SITE UTILITIES

The Site is served by public utilities. Electric power to the Site is provided by overhead lines from Entergy, Inc. Natural gas is provided by Arkla Gas Company. Potable water, sanitary sewer service, and solid waste disposal are provided by the City of El Dorado municipal services.

2.6 WATER SUPPLY WELLS AND SEPTIC SYSTEMS

As described in Section 2.4.2, there are no PWS System wells within one mile of the Site. Because the Site is served by a public sanitary sewer system, there are no septic systems on the Site, and no known systems were identified in the area.

3.0 SITE HISTORY

3.1 HISTORY OF OWNERSHIP

Land titles for the Site were reviewed back to 1892. Appendix C contains a historical Chain-of-Title Report completed for the Site. Key historical deed transfers within the last 60 years are as follows:

- June 17, 1947 — F. L. Dumas and Delva Dumas to Victor Dumas (Lots 6, 7, 16, and 17)
- August 2, 1950 — F. L. Dumas and Delva Dumas to Victor Dumas (Lots 12, 13, and 14)
- April 26, 1952 — F. L. Dumas and Delva Dumas to Victor Dumas and Augusta Dumas (Lot 15)
- June 18, 1959 — Victor Dumas and Augusta Dumas to United States of America

The Chain-of-Title Report did not identify any leases or environmental liens against the USAR Center property.

3.2 PAST USES AND OPERATIONS

Important events in the facility's development, administration, and mission are summarized in Table 1.

Year	Description
1959	Site property was acquired by the U.S. government
1961	Training Building and OMS were constructed
1996	Gazebo added
2000–2001	OMS converted to Storage Building

Historical information sources suggest that the Site was undeveloped until the U.S. government built the USAR Center in 1961.

Historic uses of the USAR Center included administrative and educational operations, maintenance of military vehicles including vehicle washing, and an indoor firing range. The Site was historically used by reservists for drill activities on various weekends throughout the year. The indoor firing range was closed in 1996 by American Asbestos, Inc. Maintenance activities and vehicle washing ceased when the OMS was converted to the Storage Building in 2000 or 2001.

Historical topographic maps and aerial photographs provide information about the Site and surrounding area. Figures 3, 4, and 5 in Appendix A present topographical maps of the Site and surrounding area dated 1951, 1981, and 1985, respectively. Figures 6 through 9 present aerial photographs of the Site and surrounding areas dated 1936, 1975, 1994, and 2000, respectively.

Pertinent observations on the historical USGS topographic maps are summarized below.

- **1951 (Figure 3).** This figure was produced at a scale of 1:100,000 and does not show sufficient detail to make any site-specific observations. The Site property is shown within the El Dorado city limits.
- **1981 (Figure 4).** This figure shows one building on the Site labeled “Armory”. The church is shown north of the Site and adjacent properties are shown as urban development. The building marked “Armory” appears in the same configuration as the Training Building. It is likely that because the Storage Building is smaller than a typical residential structure for this area, it was not specifically shown on this map. Highly urbanized areas are often designated in red (urban development) without detailing the outline of each structure.
- **1985 (Figure 5).** This figure was produced at a scale of 1:100,000 and does not show sufficient detail to make any site-specific observations.

Pertinent observations on the historical aerial photographs are summarized below.

- **1936 (Figure 6).** This figure shows the Site as an undeveloped area. Most of the Site is open field, but it cannot be determined if the land has been or is being used for agricultural purposes. Surrounding properties are undeveloped or agricultural with a few interspersed residences.
- **1975 through 2000 (Figures 7 through 9).** The 1975 aerial photograph shows construction on the Site. Otherwise, these aerial photographs show the Site, adjacent properties, and the surrounding area in the same configuration as observed during the August 16, 2006 Site reconnaissance.

Available business directories including Worley’s City Directory, Hudspeth’s City Directory, and Polk’s City Directory were reviewed by EDR (EDR’s research spanned roughly five-year intervals between 1909 through 1993). City directories did not list the Site address from 1963 to 1996. The first listing for the Site address was in 2001. In addition, TEJV reviewed Polk’s City Directories dated 1961, 1975, and 1981 at the El Dorado Tax Assessor’s office. The Site address was not listed for any of those years. City directories could not be reviewed at the local public library because it was closed due to a recent fire. Despite the first listing of the Site in 2001, other historical information shows the Site was developed in 1961.

No historical Sanborn fire insurance maps were available for this Site.

3.3 PAST USE, STORAGE, DISPOSAL, AND RELEASE OF HAZARDOUS SUBSTANCES

Information related to the past use and storage of hazardous substances at the Site was compiled through review of available Site records, search of federal and state environmental databases, and interviews with USAR personnel.

3.3.1 Past Use and Storage of Hazardous Substances

Chemicals formerly used and stored at the Site were associated with vehicle and facility maintenance activities and janitorial services. Janitorial chemicals and building maintenance-related products were stored in the designated storage area within the janitorial closet in the Training Building.

A 1998 Historical Architectural Report contained a figure (Figure 11 of the Historical Architectural Report provided in Appendix D) dated August 29, 1998. This figure shows:

- 1 — Vehicle Wash Rack north of the Storage Building (former OMS)
- 2 — Petroleum, oil, and lubricant storage area attached to the south of the Storage Building, a room now used to store field equipment
- 3 — Flammable room attached to the Storage Building and still in use for non-vehicle maintenance storage
- 4 — Indoor Firing Range in the Training Building where the mechanical room is today

The Supply Building was labeled as a "Maintenance Shop" on the same figure. POL storage and use was likely associated with items 2 and 3.

During the August 16, 2006 Site visit, no evidence of a VWR was observed in the location depicted in the 1998 figure. USAR personnel confirmed the VWR was north of the Storage Building and it was reportedly removed when the OMS was converted to the Storage Building. According to previous reports and USAR personnel, an OWS was not associated with the VWR. No oil stains or any other stains were observed in what was believed to be the VWR area. The dates the VWR was in place and in use are not known, but it is estimated to be from 1961 to prior to 1994 (a 1994 aerial photograph indicates the VWR had already been removed). Also noted on the 1998 figure is a concrete block storage room attached to the Storage Building's southern side. When the building was an OMS, this room was used as a POL storage area. After the building was converted, the

room was used to store soldiers' field equipment. No OWS was associated with the VWR, so the potential that residual petroleum products or their derivatives were released to the surrounding environment from this location is present.

Certain types of chemical products used and stored at the Site would have contained CERCLA hazardous substances and would have been stored on a rotational basis in amounts necessary to support the unit through direct-support-level maintenance. However, there is no indication that CERCLA hazardous substances were stored at the Site for one year or more in excess of corresponding RQs.

3.3.2 Past Disposal and Release of Hazardous Substances

Information related to past disposal and potential release of hazardous substances at the Site was compiled through review of available Site records, search of federal and state environmental databases, and interviews with USAR personnel. According to USAR personnel and Site records, the disposal of hazardous materials or hazardous wastes has not occurred on the Site.

No stained soil or stressed vegetation was observed during the August 16, 2006 Site visit. The MEP area and POV parking area did not show any signs of staining, and no noxious or foul odors were noted.

3.4 PAST BULK PETROLEUM STORAGE TANKS

Based upon a review of available Site records, a search of federal and state environmental databases, and interviews with USAR personnel, it does not appear that aboveground storage tanks (ASTs) and/or underground storage tanks (USTs) have ever been located on the Site.

3.5 REVIEW OF PREVIOUS ENVIRONMENTAL REPORTS

A review of Site records produced several applicable reports pertaining to the Site. The following subsections provide a brief summary of these reports. Copies of the reports, unless otherwise specified, are provided in Appendix D. Only pertinent sections of reports that addressed multiple sites are presented in Appendix D.

3.5.1 Environmental Baseline Survey Report

On behalf of the 90th Regional Readiness Command (RRC), Environmental, Compliance & Construction, Inc. (ECCI) completed an EBS for the Site in March 2005. The EBS provides summary and general information about the Site. "In accordance with the ASTM Standard D 5746-98 for *Standard Classification of Environmental Condition of Property Area Types for Defense Base Closure and Realignment Facilities*", ECCI classified the Site as an ECP Area Type 1 Property. An ECP Area Type 1 Property is an area or parcel of real property where no release or disposal of hazardous substances or petroleum products or

their derivatives has occurred, including no migration of these substances from adjacent properties.

3.5.2 Architectural Assessment Report

Parsons Engineering Science, Inc., performed a *Historic Architectural Resources Assessment of the 90th Regional Support Command Facilities in Arkansas* for the Department of the Army, 90th RRC, Office of the Engineer. The findings of the assessment were compiled in a report issued February 1998. The report concluded that the buildings on the Site were not eligible for placement on the National Register of Historical Places because they did not meet the 50-year age criteria and they did not appear to possess exceptional historical importance. No further architectural surveys were recommended for this Site until 2011. The Arkansas State Historic Preservation Officer concurred with the Parsons report recommendations in a letter dated February 2, 1998. The Architectural Assessment Report contained a figure dated August 29, 1998. This figure shows the layout of the facility prior to the conversion of the OMS to the Storage Building.

3.5.3 Lead-Based Paint Reports

Per a May 27, 1997, memorandum, the Department of the Army, Headquarters 90th RRC issued copies of LBP testing for the Site. Two samples were collected, one from each building. The testing was performed by Lewis Environmental Services, which did not find any concentrations above the established U.S. Department of Housing and Urban Development (HUD) action level of 1 milligram per cubic centimeter.

The March 2005 EBS report stated that a LBP survey was:

“. . . performed at the Site on January 11, 2005 by the Environmental Section from the 90th RRC. The survey identified LBP on a white metal support inside the OMS and on tan metal doors and frames outside the OMS. The yellow paint used for striping was also identified as LBP. LBP was found on the exterior brown metal doors, grates, and posts outside the main building mechanical room, and the tan door frames and posts on the outside of the original section of the main building. The survey indicated that no immediate action was necessary.”

3.5.4 Indoor Firing Range Report

The indoor firing range was closed in 1996 by American Asbestos, Inc. The abatement, cleanup, and encapsulation of all lead-containing dust and work items were completed in November 1996 and documented in the report titled *Final Submittals for Project 0001AB El Dorado USARC, Lead Abatement/Contract DABT 39-96-C-3047*. A formal release of the indoor firing range for re-occupancy and alternate use was issued March 8, 1997, by the 90th RRC.

3.5.5 Radon Reports

The March 2005 EBS reported that, "Testing was conducted at eight (8) areas within the two (2) USARC Buildings. The average activity reported for all of the areas was 0.70 or less. Consequently, the presence of radon is not considered a potential significant environmental concern with respect to this property."

3.5.6 Asbestos Reports

Per an October 4, 1993, memorandum, the Department of the Army, Headquarters 122D USAR Command issued copies of asbestos testing for the Site. The memorandum included the results of 22 asbestos samples. Eight of the samples tested positive for asbestos in concentrations ranging from 2 to 40%. Asbestos-containing material (ACM) was found in boiler room piping insulation, roofing tar, a crawl space and insulation, and flooring (tile and mastic).

A January 1997 asbestos report prepared by the U.S. Army 90th RRC, *Asbestos Building Inspection, Rufus N. Garrett USARC, El Dorado, AR*, indicated analysis of all samples collected from suspect building materials had asbestos concentrations less than 1%, so all suspect materials were considered to not contain asbestos. The report noted that the inspection was confined to rooms and areas accessible on the days of the survey and some rooms were not made accessible. Based on the 1997 report, there are no known asbestos containing building materials on the Site.

3.5.7 Cultural Resources Report

Parsons Engineering Science, Inc., performed an assessment and prepared a *Management Summary, Cultural Resources Assessment of 90th Regional Support Command, Facilities in Arkansas, Louisiana, New Mexico, Oklahoma and Texas* for the Department of the Army, 90th RRC. The assessments were compiled and issued February 1998. The assessments concluded that there were no architectural or archeological issues at the Site. The Site has a "low" archeological potential and is not eligible for the National Register of Historical Places.

3.5.8 Polychlorinated Biphenyls Report

The U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM) performed a *Polychlorinated Biphenyls (PCB) Assessment No. 37-08-5615-97*. The assessment was compiled and issued on September 30, 1997, and addressed six pole-mounted transformers (PMTs) on the east side of the Site and fluorescent lighting fixtures on the Site. The PMTs are owned by Entergy Corp. Three PMTs on the northeast corner of the Site were manufactured by General Electric in 1975. Three PMTs on the southeast corner of the Site were manufactured by ERMCO in 1993. According to the report, all of the transformers are listed as non-PCB and were in good condition. During the Site visit, six PMTs on two poles (three per pole) were observed on the east side of the Site and all appeared in good condition. Some of the older

fluorescent lighting fixtures on the Site were identified in the USACHPPM report as having PCB-containing ballasts. According to USAR personnel, used fluorescent tubes are sent offsite for recycling.

4.0 ADJACENT PROPERTIES

Figure 9 in Appendix A provides a 2000 aerial view of the Site and adjacent properties. The property is bounded by 8th Street and a church to the north; Murphy Street, a residential area, and James Simpson's Garage to the west; 7th Street then a residential area to the south; and a residential area to the east. Table 2 provides a list of adjacent properties with their directional location from the Site. The zoning of the adjacent parcels is also listed in Table 2.

Direction From Site	Name/Type of Property	Addresses	Zoning
North	Church	800 block of 8 th Street	C2, Commercial
West	Single family residential property from the southwest corner of the Site to James Simpson's Garage on the northwest corner of the Site	Murphy Street	R1, Single-Family Residential and C2 for James Simpson's Garage
South	Single-family residential property	800 block of 7 th Street	R1, Single-Family Residential
East	Single-family residential property	College Avenue	R1, Single-Family Residential

Appendix A provides historical aerial photographs and topographic maps and Appendix E presents an environmental database report that was used to evaluate potential environmental impacts from adjacent and surrounding properties that may have also impacted the environmental conditions at the Site. Land use at the adjacent properties does not appear to have changed significantly over the years and does not appear to have impacted the environmental conditions of the USAR Center.

5.0 REVIEW OF REGULATORY INFORMATION

A component of the ECP is the review of all reasonably obtainable federal, state, and local government records for the Site and surrounding properties where there has been a release or likely release of any hazardous substance or any petroleum product and that are likely to cause or contribute to a release or threatened release of any hazardous substance or any petroleum product on the federal real property. An environmental database summary was obtained from EDR on July 14, 2006. The environmental database summary consolidates standard federal, state, local, and tribal environmental record sources based on ASTM-recommended minimum search distances from the Site. A copy of the complete EDR report is included in Appendix E.

There were no environmental permits issued for the Site; therefore, there were no permit applications or associated permit documentation available for review. There were no known contamination events on the Site that required an environmental cleanup; therefore, the Site did not participate in the Installation Restoration Program, Military Munitions Response Program, or a Compliance Cleanup program.

TEJV interviewed local authorities and reviewed reasonably accessible USAR environmental documents, ADEQ files, City of El Dorado records, and historical aerial photographs and maps to investigate environmental conditions at the Site and surrounding area. Available information for potential environmental impacts to the Site was assessed.

TEJV conducted multiple interviews with relevant personnel to discuss general environmental interest and specific areas of interest identified during the records review and visual reconnaissance. Copies of the interview reports are included in Appendix D. Section 9.0 of this report identifies the individuals interviewed with respect to conditions and operations at the Site and the information from those interviews is incorporated into this report.

5.1 FEDERAL ENVIRONMENTAL RECORDS

5.1.1 Federal National Priorities List Sites within One Mile

The National Priorities List (NPL) is a subset of the CERCLA Information System (CERCLIS) and identifies more than 1,200 sites for priority cleanup under the Superfund Program. NPL sites are targeted for long-term remedial action under CERCLA. According to the environmental database report, the USAR Center is not an NPL site and there are no such sites within one mile of the Site.

5.1.2 Federal CERCLIS Sites within One-Half Mile

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies, and persons, pursuant to Section 103 of the Act. CERCLIS contains sites that are either proposed to be or are on

the NPL, and sites that are in the screening and assessment phase for possible inclusion on the NPL. According to the environmental database report, the USAR Center is not a CERCLIS site and there are no CERCLIS sites within one-half mile of the Site.

CERCLIS No Further Remedial Action Planned (NFRAP) sites have been removed and archived from CERCLIS sites. NFRAP status indicates that, to the best of USEPA's knowledge, assessment at a site has been completed and that no further steps will be taken to list this site on the NPL, unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with the site; it means that, based on available information, the location is not judged to be a potential NPL site. According to the environmental database report, the USAR Center is not a CERCLIS NFRAP site and there are no CERCLIS NFRAP sites within one-half mile of the Site.

5.1.3 Resource Conservation and Recovery Act Corrective Action Sites within One Mile

Resource Conservation and Recovery Act (RCRA) corrective action sites (CORRACTS) represent facilities that have generated or managed hazardous wastes and require corrective action. According to the environmental database report, the USAR Center is not a CORRACTS site. No CORRACTS sites were identified within one mile of the Site.

5.1.4 RCRA Transport, Treatment, Storage, and/or Disposal Facilities within One-Half Mile

The RCRA Information database includes selective information on sites that generate, transport, treat, store, and/or dispose (TSD) of hazardous waste as defined by RCRA. According to the environmental database report, the USAR Center is not a RCRA TSD site and there are no such sites within one-half mile of the USAR Center.

5.1.5 Federal RCRA Small- and Large-Quantity Generators List within One-Quarter Mile

Conditionally exempt small-quantity generators generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. RCRA small-quantity generators (SQGs) are defined as facilities generating between 100 kg and 1,000 kg of hazardous waste per month, while a large-quantity generator (LQG) is defined as a facility generating more than 1,000 kg of hazardous waste, or over 1 kg of acutely hazardous waste per month. According to the environmental database report, the USAR Center is not an SQG or LQG. No RCRA SQGs or LQGs are within one-quarter mile of the Site.

5.1.6 Federal Emergency Response Notification System List

The federal Emergency Response Notification System (ERNS) provides information on reported releases of oil and hazardous substances. According to the environmental database report, the USAR Center is not listed on the ERNS List.

5.2 STATE AND LOCAL ENVIRONMENTAL RECORDS

The regulatory information presented below was obtained from the environmental database report. Supplemental information was also provided from research at the ADEQ.

5.2.1 State-Registered Landfills or Solid Waste Disposal Sites within One-Half Mile

According to the environmental database report, no solid waste landfills, incinerators, or transfer stations are within one-half mile of the USAR Center. There is no solid waste landfill, incinerator, or transfer station on the Site.

5.2.2 State-Registered Leaking UST Sites within One-Half Mile

The Site itself is not listed in the state leaking UST (LUST) database. According to the environmental database report, one LUST site is within one-half mile of the USAR Center. The listed facility is an abandoned property at 714 West Grove in El Dorado. This LUST site is approximately 2,245 feet south-southeast of the Site and at a higher topographic elevation. According to the environmental database report, the LUST has been abandoned since 1973. A release was detected in 1990 due to rising groundwater levels, and tank closure procedures are under way. This LUST site represents a low potential environmental risk to the Site due to its distance from the Site.

5.2.3 State-Registered UST Sites within One-Quarter Mile

USTs are regulated under RCRA Subtitle I and must be registered with the state department responsible for administering the UST program. The Site is not listed in the state UST database. The environmental database report identified one state-registered UST site within one-quarter mile. The listed facility is Cupples Refrigeration at 1200 Harold Ellen in El Dorado. This UST site is approximately 1,200 feet west-northwest of the Site and at a lower topographic elevation. According to the environmental database report, the UST is active. There are no reported releases associated with this site and it represents a low potential environmental risk to the Site.

5.2.4 State Hazardous Waste Sites within One Mile

According to the environmental database report, no hazardous waste sites are within one mile of the USAR Center. The Site is not classified as a hazardous waste site.

5.2.5 State Solid Waste Illegal Dumps within One-Half Mile

According to the environmental database report, no illegal dumps have been identified within one-half mile of the USAR Center. There is no illegal dump on the Site.

5.2.6 State AST Sites within One-Quarter Mile

According to the environmental database report there are no state-registered ASTs within one-quarter mile of the USAR Center.

5.2.7 State Emergency Response Incidents Sites

According to the environmental database report, the USAR Center is not listed on the Arkansas emergency response incidents list.

5.2.8 State Sites with Institutional Controls within One-Half Mile

Institutional controls include administrative procedures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post-remediation care requirements intended to prevent exposure to contaminants remaining onsite. According to the environmental database report, no state-registered sites with Institutional Engineering Controls are within one-half mile of the USAR Center.

5.2.9 State Voluntary Cleanup Program Sites within One-Half Mile

There are no State Voluntary Cleanup Program (VCP) sites with one-half mile of the USAR Center. According to the environmental database report, the USAR Center is not listed on the VCP list.

5.2.10 State Brownfields Program Sites within One-Half Mile

Included in the listing are brownfields properties addressed by Cooperative Agreement Recipients and brownfields properties targeted by Targeted Brownfields Assessments. According to the environmental database report, no state-registered Brownfield Program Sites are within one-half mile of the USAR Center. According to the environmental database report, the USAR Center is not listed on the brownfields list.

5.2.11 State Enforcement Sites

According to the environmental database report, the USAR Center is not listed on the enforcement list.

5.2.12 State Poultry Sludge Permit Sites within One-Half Mile

According to the environmental database report, there are no poultry sludge permit (Sludge) sites within one-half mile of the Site. According to the environmental database report, the USAR Center is not listed on the Sludge list.

5.2.13 State Permit Data System

According to the environmental database report, the USAR Center is not listed on the state permit data system.

5.2.14 State Facility Emission and Stack Data Sites

According to the environmental database report, the USAR Center is not listed on the facility emission and stack list.

5.2.15 State Asbestos Notification of Intent Database Sites

According to the environmental database report, the USAR Center is not listed on the asbestos database.

5.3 TRIBAL ENVIRONMENTAL RECORDS

According to the environmental database report, no designated Indian Reservations are within one mile of the USAR Center.

5.4 UNMAPPED SITES

The environmental database search yielded 40 unmapped sites. Unmapped sites are those with address information sufficient only to identify as within the zip code of the target Site. Further research was conducted using maps of the Site and surrounding area. None of the Sites were estimated to be within the corresponding ASTM minimum search distance for the databases on which the sites are listed.

5.5 SUMMARY OF PROPERTIES EVALUATED TO DETERMINE RISK TO SITE

During review of environmental information summarized in this section, multiple databases and sites were reviewed to evaluate potential risks to the Site. Two sites were identified as potential risks to the Site as detailed in Sections 5.2.2 and 5.2.3. Based on an evaluation of available information and details concerning the identified sites, both sites are considered "Low Risk" sites. No "High Risk" sites were identified. "High Risk" properties are those that exhibit significant environmental conditions that have the probability of adversely affecting the environmental conditions at the Site.

6.0 SITE INVESTIGATION AND REVIEW OF HAZARDS

Findings documented in the following subsections are based on the August 16, 2006 Site and area reconnaissance, review of available Site records, and information obtained from USAR personnel.

6.1 UNDERGROUND AND ABOVEGROUND STORAGE TANKS

No USTs or ASTs were observed on the Site.

6.2 INVENTORY OF CHEMICALS/HAZARDOUS SUBSTANCES

During the August 16, 2006 Site reconnaissance, the only chemicals and hazardous substances observed on the Site were the consumer-sized quantities of cleaning supplies in the janitor's closet, four gallons of paint in the mechanical room (Training Building), and the six gallons of bleach, two gallons of brake fluid, and 30 gallons of paint in the flammable storage area (Storage Building).

6.3 WASTE DISPOSAL SITES

No signs of landfilling or illegal waste disposal activities were observed on the Site during the August 16, 2006 Site reconnaissance.

6.4 PITS, SUMPS, DRY WELLS, AND CATCH BASINS

The Site is served by a sanitary sewer system from the City of El Dorado. Wastewater from within the buildings discharges to the sanitary sewer system. Floor drains are in the Training Building kitchen and restrooms. There is a grease trap outside the kitchen; however the kitchen is not in use.

Storm water sheet-flows to one of four storm drains along the perimeter of the Site property.

6.5 ASBESTOS-CONTAINING MATERIAL

Based on the 1997 asbestos survey report discussed in Section 3.5.6, there are no known asbestos containing building materials on the Site.

6.6 PCB-CONTAINING EQUIPMENT

The USACHPPM performed a PCB assessment on the Site in 1997. Six PMTs on the east side of the Site and fluorescent lighting fixtures were assessed. The PMTs are owned by Entergy Corp. Three PMTs on the northeast corner of the Site were manufactured by General Electric in 1975. Three PMTs on the southeast corner of the Site were manufactured by ERMCO in 1993. According to the report, all of the transformers are listed as non-PCB and were in good condition. During the Site visit, six PMTs on two poles

(three per pole) were observed on the east side of the Site and all appeared in good condition. Some of the older fluorescent lighting fixtures on the Site were identified in the USACHPPM report as having PCB-containing ballasts. According to USAR personnel, used fluorescent tubes are sent offsite for recycling.

6.7 LEAD

Based on the age of construction of the building prior to 1978, when USEPA banned the use of lead in paint, LBP is likely present. The March 2005 EBS report stated that LBP was identified at the site in 2005. During TEJV's Site visit, painted surfaces were observed to be in good condition and no peeling paint was observed.

The indoor firing range was closed in 1996 by American Asbestos, Inc. The abatement, cleanup, and encapsulation of all lead-containing dust and work items were completed in November 1996. A formal release of the indoor firing range for re-occupancy and alternate use was issued March 8, 1997. During the Site visit, the mechanical room of the Training Building was inspected and there was no indication of the former indoor firing range.

6.8 RADON

According to the USEPA Map of Radon Zones for Arkansas, Union County is in an area with low propensity for radon. Areas tested were classified in Zone 3, which is less than 2 picocuries per liter of air (pCi/L). The average activity for basements was reported as 0.70 pCi/L and 0.469 pCi/L for first-floor living areas. The USEPA recommended action level is 4.0 pCi/L.

The March 2005 EBS reported that, "Testing was conducted at eight (8) areas within the two (2) USARC Buildings. The average activity reported for all of the areas was 0.70 or less. Consequently, the presence of radon is not considered a potential significant environmental concern with respect to this property."

6.9 UNEXPLODED ORDNANCE

No indications were found during the August 16, 2006 Site reconnaissance or during the review of records to indicate the presence of unexploded ordnance at the Site.

6.10 RADIOACTIVE MATERIALS

During the August 16, 2006 Site reconnaissance and records review process, no indications were found of the past storage or use of radiological commodities at the USAR Center.

7.0 REVIEW OF SPECIAL RESOURCES

7.1 LAND USE

Based on an interview with El Dorado Public Works personnel, the Site is zoned R1, which is the strictest residential zoning for single-family residences. When El Dorado voters approved zoning regulations in 1997, the USAR Center was grandfathered into the R1 zone and is allowed to remain non-residential as long as the property is actively occupied. If the USAR Center is vacant for more than one year, it will revert to R1 status and a business will no longer be allowed to occupy the Site. The church north of the Site is zoned C2, which is commercial. James Simpson's Garage is zoned C2 and it falls under the same grandfather clause applicable to the Site, meaning the property will revert to R1 status if it is vacant for more than one year. Residential properties adjacent to the Site are zoned R1. Figure 9 in Appendix A provides a 2000 aerial photograph of the USAR Center and surrounding properties and depicts current land use.

7.2 COASTAL ZONE MANAGEMENT

There is no coastal zone management plan for Arkansas.

7.3 WETLANDS

The Site is upland and well drained. No wetlands were identified in the environmental database report. A search for wetland information was also conducted online from the U.S. Fish and Wildlife Service Web site, with no digital data available for the Site. Wetland information was also requested at the USDA office, but none was available. No vegetation typical of wetlands was observed on the Site.

7.4 100-YEAR FLOODPLAIN

FEMA Flood Hazard Area map (Figure 10, Appendix A) information obtained online from the FEMA Web site at <http://www.msc.fema.gov> and the environmental database report indicates that the Site lies outside the 100-year floodplain.

7.5 NATURAL RESOURCES

No survey has been conducted at the Site for threatened and endangered species. Information obtained from the Arkansas Heritage Program for Union County lists the Red-cockaded Woodpecker as the only endangered species and the following as the only state threatened species: southern tubercled-orchid, Durand's white oak, and *Xyris baldwiniana* a yellow-eyed grass. Except for potential incidental use by migrants, the threatened and endangered species are unlikely to occur at the Site due its urban nature.

7.6 CULTURAL RESOURCES

As described in Section 3.5.7, a cultural resource assessment was performed for the Site. The conclusion was that there were no architectural or archeological issues at the Site. The Site has a “low” archeological potential and is not eligible for the National Register of Historical Places.

7.7 OTHER SPECIAL RESOURCES

There are no other known resources that could affect the Site.

8.0 CONCLUSIONS

The TEJV, under contract to the USACE, Louisville District, has prepared this ECP Report for the Rufus N. Garrett, Jr. USAR Center (AR009), at 815 West 8th Street in El Dorado, Union County, Arkansas. The Site encompasses 2.83 acres and it is currently active; Detachment 1 of the 321st Material Management Center occupies the facility. The Site contains a Training Building and a Storage Building. The Site has primarily functioned as an administrative and educational facility. However, vehicle maintenance and washing was conducted in the past.

Findings of this ECP are based on existing environmental information, including visual observations, Site records, and federal, state, and local database and file information related to the storage, release, treatment, or disposal of hazardous substances or petroleum products or derivatives on the Site. The following present the findings related to areas evaluated during the ECP process.

- **Hazardous Substances.** CERCLA hazardous substances would have been used and stored at the Site in amounts necessary to support unit-level vehicle and building maintenance activities. However, the quantities stored for one year or more would not have exceeded 1,000 kg or the RQ of designated hazardous substances, or one kg of acutely hazardous waste. There is no evidence that the chemicals used or stored were ever improperly handled, released, or disposed at the Site.
- **USTs/ASTs.** No petroleum USTs or ASTs have ever been located on the Site.
- **Non-UST/AST Petroleum Storage.** Petroleum storage would have occurred in designated areas within the OMS and POL storage shed in the OMS area. No OWS was associated with the VWR, so the potential that residual POLs were released to the surrounding environment from this location is present.
- **PCBs.** There are no known PCB-containing transformers on the Site. Some of the older fluorescent lighting fixtures on the Site were identified as having PCB-containing ballasts. According to USAR personnel, fluorescent tubes are shipped offsite for recycling.
- **ACM.** A 1993 Department of the Army memorandum included the results of 22 asbestos samples collected from Site buildings. Eight of the samples tested positive for asbestos in concentrations ranging from 2 to 40%. A January 1997 asbestos report prepared by the U.S. Army 90th RRC indicated analysis of all samples collected from suspect building materials had asbestos concentrations less than 1%, so all suspect materials were considered to not contain asbestos. Based on the 1997 report, there are no known asbestos containing building materials on the Site.

- **LBP.** A 1997 Department of the Army memorandum detailed LBP testing for the Site. Two samples were collected, one from each building. The testing was performed by Lewis Environmental Services and did not find any concentrations above the established HUD action level of 1 milligram per cubic centimeter. The March 2005 EBS report stated that a LBP survey was performed at the Site on January 11, 2005, by the Environmental Section of the 90th RRC. The survey identified LBP on a white metal support inside the OMS and on tan metal doors and frames outside the OMS. The yellow paint used for floor striping was also identified as LBP. LBP was found on the exterior brown metal doors, grates, and posts outside the main building mechanical room, and the tan door frames and posts on the outside of the original section of the main building. The survey indicated that no immediate action was necessary. During the August 16, 2006 Site visit, painted surfaces were observed to be in good condition and no peeling paint was observed.
- **Indoor Firing Range.** The indoor firing range was closed in 1996 by American Asbestos, Inc. The abatement, cleanup, and encapsulation of all lead-containing dust and work items were completed in November 1996. A formal release of the indoor firing range for re-occupancy and alternate use was issued March 8, 1997.
- **Radiological Materials.** No radiological materials were identified during the Site reconnaissance. There is no evidence of any release of radiological materials at the Site.
- **Radon.** The March 2005 EBS reported that, "Testing was conducted at eight (8) areas within the two (2) USAR buildings. The average activity reported for all of the areas was 0.70 or less. Consequently, the presence of radon is not considered a potential significant environmental concern with respect to this property." According to the USEPA Map of Radon Zones for Arkansas, Union County is in an area with low propensity for radon. Areas tested were classified in Zone 3, which is less than 2 pCi/L. The average activity for basements was reported as 0.70 pCi/L and 0.469 pCi/L for first-floor living areas. The USEPA recommended action level is 4.0 pCi/L. Based on the reported results and county averages, radon is not considered a concern at the Site.
- **Munitions and Explosives.** No evidence was found during the Site reconnaissance or records review process of the past presence of munitions and explosives of concern.
- **Surrounding Properties.** Potential environmental sites of concern, located within corresponding ASTM minimum search distances from the Site were evaluated. Land use at the adjacent properties does not appear to have changed significantly over the years and does not appear to have impacted the environmental conditions of the USAR Center.

Areas of potential environmental concern were reviewed and the TEJV found no significant concerns relating to the environmental condition of the Site. In accordance with DoD policy defining the classifications (see S.W. Goodman Memorandum dated October 21, 1996), the Site has been classified as Category 2. This classification does not include categorizing the property based on *de minimis* conditions that generally do not present material risk of harm to the public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

9.0 REFERENCES

Persons Contacted

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- Sergeant First Class Phillip Applewhite, USAR, (870) 863-5380. Meeting on August 16, 2006.
- Ralph Hasty, USAR, Facility Engineer, (903) 278-1756, Telecommunication on August 23, 2006.
- James Wheeler, 90th Regional Readiness Command, Chief, Environmental Division, (501) 771-7992.
- Doug Hunter, U.S. Department of Agriculture, Ouachita and Union County Farm Service Agency, (870) 836-2089. Meeting on August 14, 2006.
- Debbie Stinson, El Dorado Public Works, Administrative Assistant, (870) 862-7911, Telecommunication on August 23, 2006.

Resources Consulted

- Aerial Photographs dated 1979 and 1994 provided by the Ouachita and Union County Farm Service Agency.
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- NETR-Real Estate Research & Information, 2055 East Rio Salado Parkway, Tempe, Arizona, 85281. *Historical Chain-of-Title Report*. Project No. N06-4895. August 1, 2006.
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- U.S. Army Reserve Center, Detachment 1, 321st MMC, El Dorado, Arkansas Chemical Inventory. January 13, 2002.
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- U.S. Fish and Wildlife Services, Branch of Habitat Assessment, *National Wetlands Inventory Wetlands Mapper*. <http://wetlandswfs.er.usgs.gov/wtlnds/launch.html>
- U.S. Geological Survey TerraServer-USA. (March 28, 2000 aerial photograph). Retrieved from <http://www.terraserver-usa.com/>

Agencies Contacted

- Arkansas Department of Environmental Quality
- City of El Dorado Tax Assessors Office
- City of El Dorado Public Library
- U.S. Department of Agriculture, National Resources Conservation Service

Appendix A
Figures

FIGURES

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Figure 9	2000 Aerial Photograph
Figure 10	FEMA Flood Plain Map

Appendix B
Site Reconnaissance Photographs

Appendix C
Chain-of-Title Report

Appendix D
Previous Environmental Reports

PREVIOUS ENVIRONMENTAL REPORTS

1. American Asbestos, Inc. *Final Submittals for Project 0001AB, El Dorado USARC, Lead Abatement/Contract DABT39-96-C-3047 for Fort Sill Army Base.* December 16, 1996.
2. Arkansas Heritage Program Web site for rare species in Washington County, Arkansas. <http://www.naturalheritage.com/program/element-search/default.asp>
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14. USDA Soil Survey Map and Legend. (pertinent pages only)

Appendix E
Regulatory Database Search Reports

Appendix A
Figures

FIGURES

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Figure 6	1936 Aerial Photograph
Figure 7	1975 Aerial Photograph
Figure 8	1994 Aerial Photograph
Figure 9	2000 Aerial Photograph
Figure 10	FEMA Flood Plain Map

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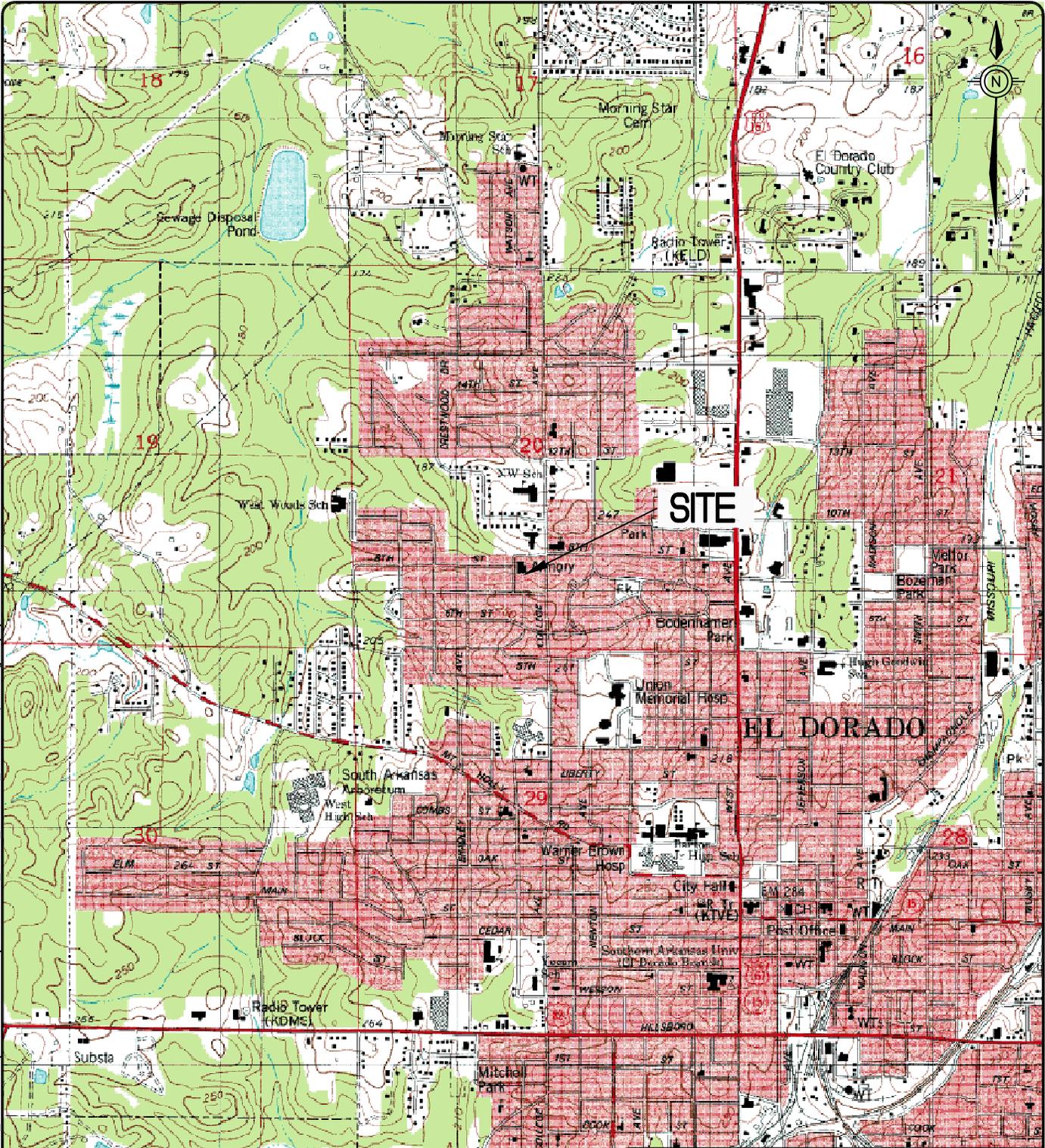
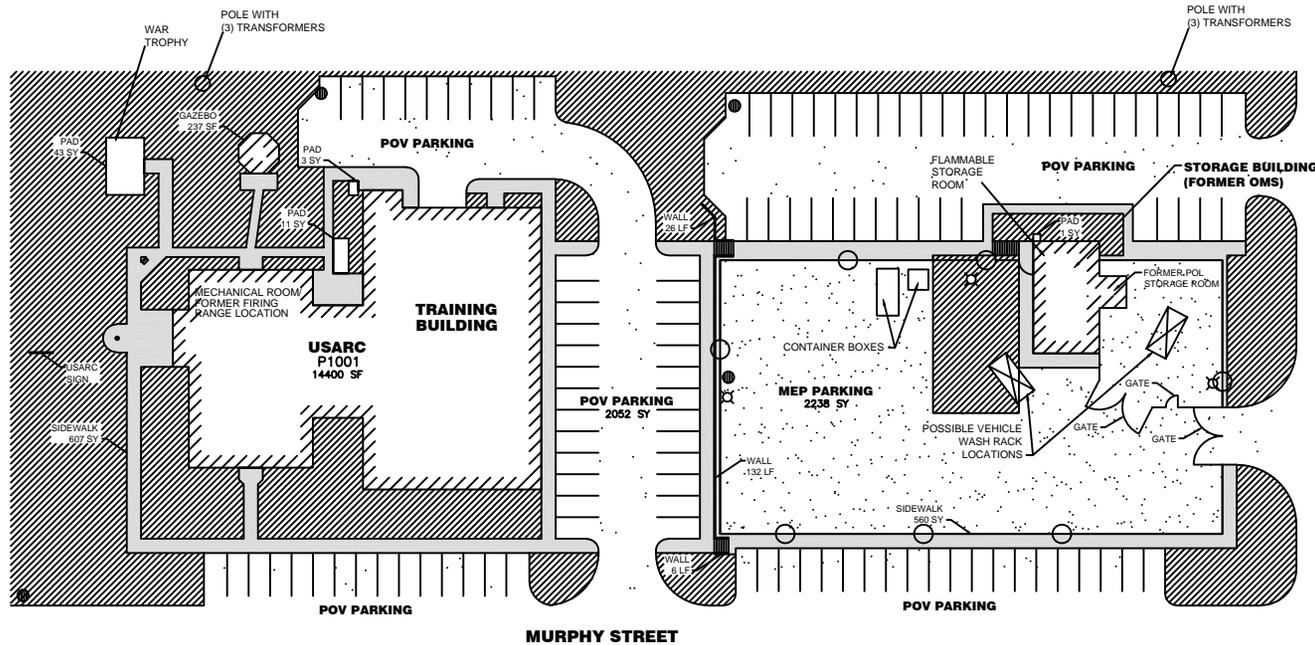
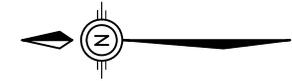


FIGURE 1
 GENERAL SITE LOCATION MAP
 ENVIRONMENTAL CONDITION OF PROPERTY
 RUFUS N. GARRETT JR. USARC
 EL DORADO, ARKANSAS

MAP SOURCE:
 U.S.G.S. 7.5 MINUTE QUADRANGLE
 EL DORADO WEST, ARKANSAS 1981

REQUESTED BY: FELTER
 DRAWN BY: BRONSON
 DWG DATE: 08/23/06
 DWG NO: 802978B035



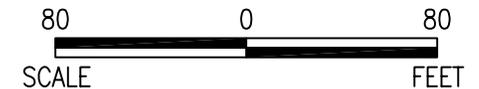


TOTALS

FENCING:	792 SY
GATES:	60 LF
SIDEWALKS:	1167 SY
EXT LIGHTING:	3
ROADS:	1661 SY
POV PARKING:	2052 SY
POV UNPAVED:	N/A
MEP PARKING:	2238 SY
MEP UNPAVED:	N/A
GRASS:	37158 SY

LEGEND

SYMBOL	DESCRIPTION	CAT_CODE
	MEP PARKING	85210
	MEP PARKING (UNPAVED)	85211
	POV PARKING	85215
	GRASS	-
	SIDEWALK	85220
	FENCE LINE	87210
	FLAG POLE	69010
	EXTERIOR LIGHTING	81230
	STORMWATER DRAIN	

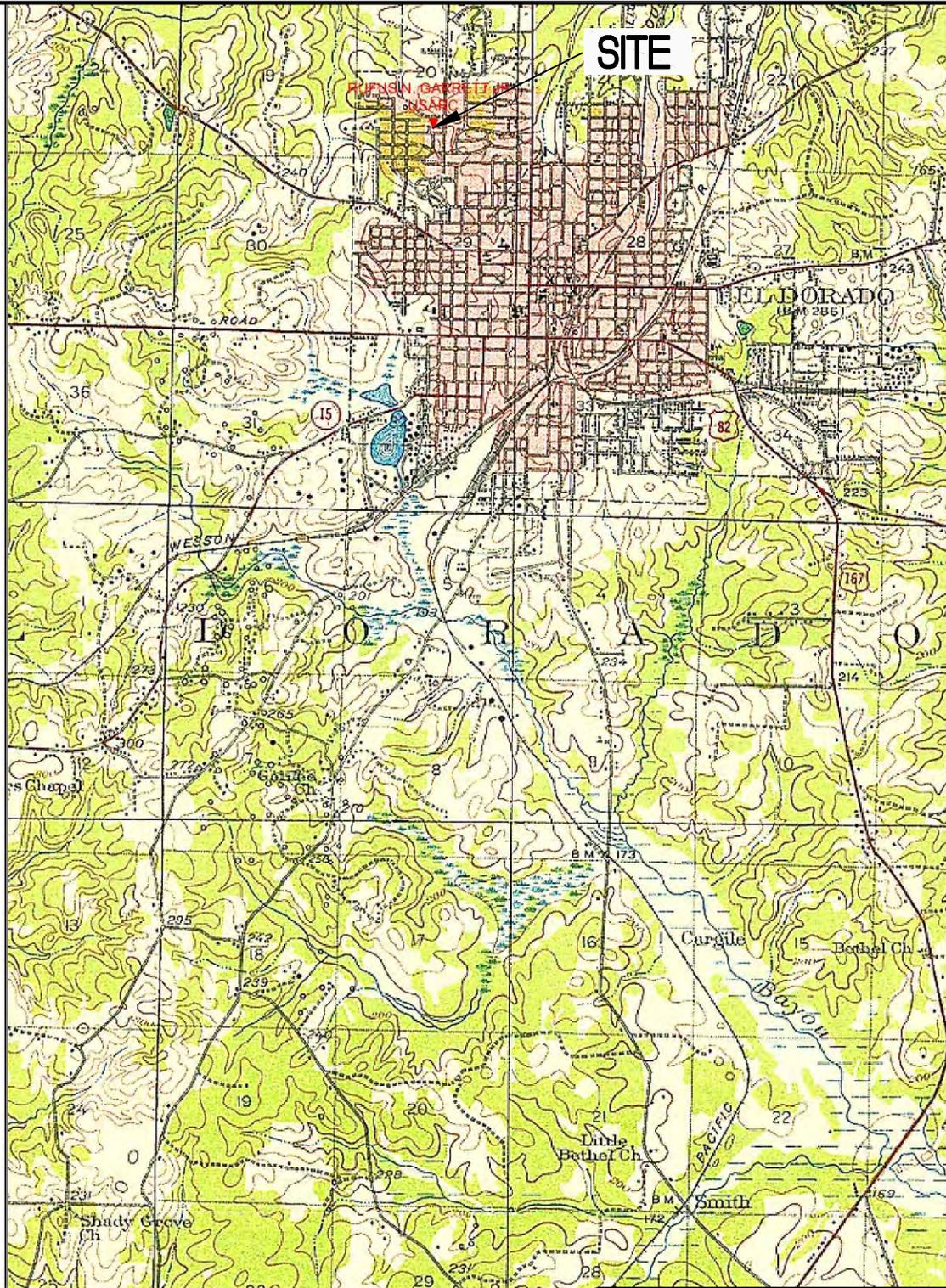


SOURCE:
MORSE CADD & SERVICES
(JULY 26, 2002)

FIGURE 2
SITE LAYOUT PLAN
ENVIRONMENTAL CONDITION OF PROPERTY
RUFUS N. GARRETT JR. USARC
EL DORADO, ARKANSAS

REQUESTED BY: FELTER
DRAWN BY: BRONSON
DWG DATE: 08/29/06
DWG NO: 802978B036





SITE

RUFUS N. GARRETT JR.
USARC

C:\draw\802978B047_AR009_1951_TOPO_EL_DORADO_AR.dwg 8/29/2006 3:12:30 PM CST

NOT TO SCALE

FIGURE 3
 1951 TOPOGRAPHIC MAP
 ENVIRONMENTAL CONDITION OF PROPERTY
 RUFUS N. GARRETT JR. USARC
 EL DORADO WEST, ARKANSAS

REQUESTED BY: D. FELTER	 8(a) joint venture
DRAWN BY: BRONSON	
DWG DATE: 08/29/06	
DWG NO: 802978B047	

MAP SOURCE:
 U.S.G.S. 7.5 MINUTE QUADRANGLE
 EL DORADO WEST, ARKANSAS

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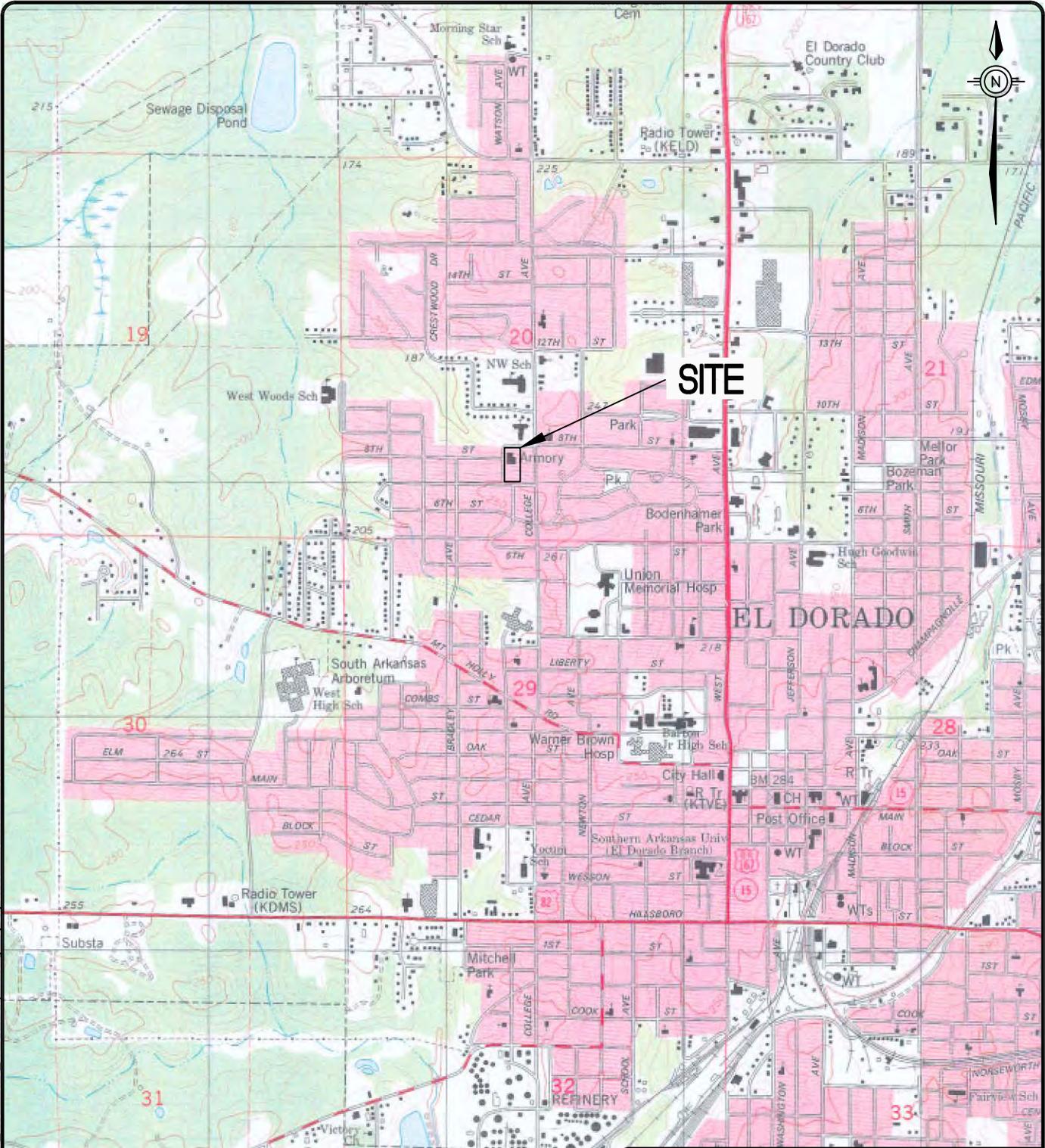


FIGURE 4
 1981 TOPOGRAPHIC MAP
 ENVIRONMENTAL CONDITION OF PROPERTY
 RUFUS N. GARRETT JR. USARC
 EL DORADO, ARKANSAS

MAP SOURCE:
 U.S.G.S. 7.5 MINUTE QUADRANGLE
 ENVIRONMENTAL DATA RESOURCES, INC.
 EL DORADO WEST, ARKANSAS

REQUESTED BY: D. FELTER
 DRAWN BY: BRONSON
 DWG DATE: 08/29/06
 DWG NO: 802978B048



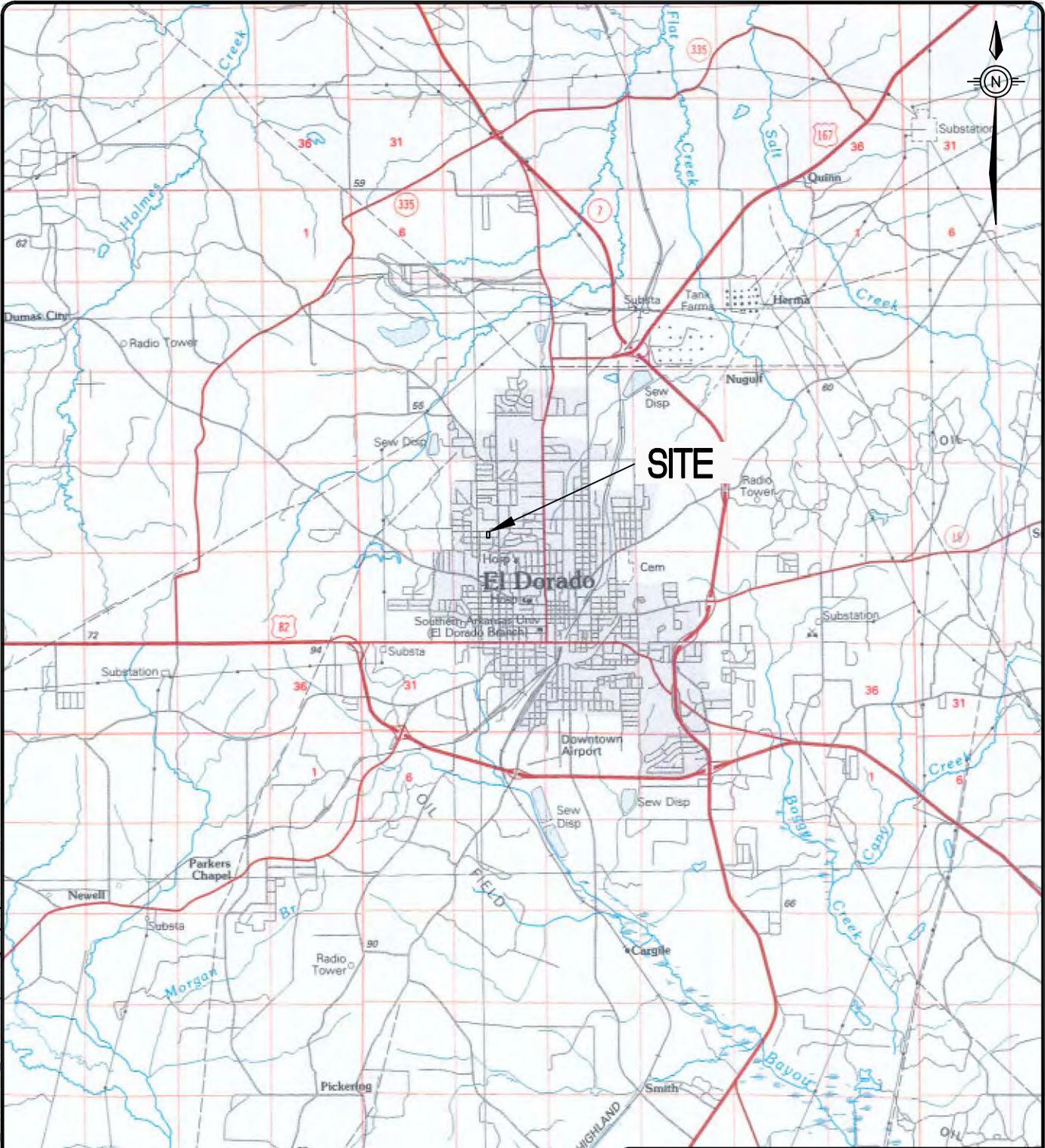


FIGURE 5
 1985 TOPOGRAPHIC MAP
 ENVIRONMENTAL CONDITION OF PROPERTY
 RUFUS N. GARRETT JR. USARC
 EL DORADO, ARKANSAS

MAP SOURCE:
 U.S.G.S. 7.5 MINUTE QUADRANGLE
 ENVIRONMENTAL DATA RESOURCES, INC.
 EL DORADO, ARKANSAS

REQUESTED BY: D. FELTER
 DRAWN BY: BRONSON
 DWG DATE: 08/29/06
 DWG NO: 802978B049





Rufus N. Garrett, Jr.
USARC

SITE



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NOT TO SCALE

SOURCE:
90TH REGIONAL READINESS COMMAND

FIGURE 6
1936 AERIAL PHOTOGRAPH
ENVIRONMENTAL CONDITION OF PROPERTY
RUFUS N. GARRETT JR. USARC
EL DORADO, ARKANSAS

REQUESTED BY: D. FELTER

DRAWN BY: BRONSON

DWG DATE: 08/29/06

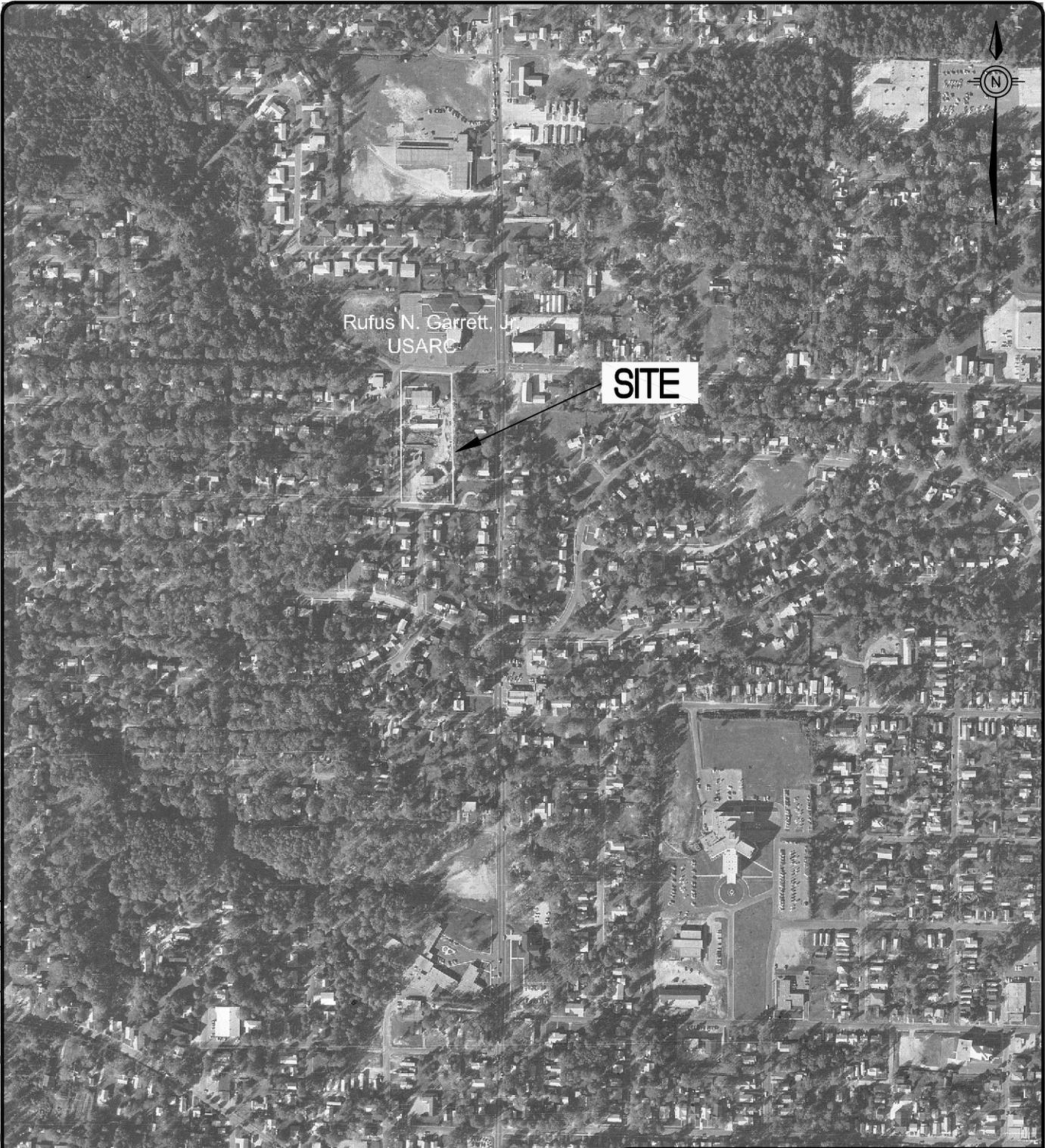
DWG NO: 802978B050



ENSAFE

8(a) joint venture

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NOT TO SCALE

SOURCE:
90TH REGIONAL READINESS COMMAND

FIGURE 7
1975 AERIAL PHOTOGRAPH
ENVIRONMENTAL CONDITION OF PROPERTY
RUFUS N. GARRETT JR. USARC
EL DORADO, ARKANSAS

REQUESTED BY: D. FELTER

DRAWN BY: BRONSON

DWG DATE: 08/29/06

DWG NO: 802978B051





NOT TO SCALE

SOURCE:
(USDA) UNITED STATES DEPARTMENT OF AGRICULTURE

FIGURE 8
1994 AERIAL PHOTOGRAPH
ENVIRONMENTAL CONDITION OF PROPERTY
RUFUS N. GARRETT JR. USARC
EL DORADO, ARKANSAS

REQUESTED BY: D. FELTER

DRAWN BY: BRONSON

DWG DATE: 08/29/06

DWG NO: 802978B053



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NOT TO SCALE

SOURCE:
EL DORADO TAX ASSESSORS OFFICE

FIGURE 9
2000 AERIAL PHOTOGRAPH
ENVIRONMENTAL CONDITION OF PROPERTY
RUFUS N. GARRETT JR. USARC
EL DORADO, ARKANSAS

REQUESTED BY:	D. FELTER
DRAWN BY:	BRONSON
DWG DATE:	08/29/06
DWG NO:	802978B054



Appendix B
Site Reconnaissance Photographs

**Rufus N. Garrett Jr. USAR Center
815 West 8th Street
El Dorado, AR**



Photo 1: The Rufus N. Garrett Jr. U.S. Army Reserve Center occupies an approximately 150,000-square-foot site at 815 West 8th Street in El Dorado, Arkansas. View of front lawn looking to the northwest.



Photo 2: View of north adjacent property which is occupied by a church and is zoned commercial.

Rufus N. Garrett Jr. USAR Center
815 West 8th Street
El Dorado, AR



Photo 3: View of east adjacent property. The eastern adjoining properties are all residential and the zoning is also residential.



Photo 4: View to the south of subject property. The southern boundary adjoining properties are residential and also zoned residential. Note, pole-mounted transformers circled in left background. Right background shows Storage Building.

Rufus N. Garrett Jr. USAR Center
815 West 8th Street
El Dorado, AR



Photo 5: View to the west along the south side of the Training Building showing residential apartments. West side of subject property is zoned commercial/residential.



Photo 6: View to the west of subject property showing a residential area.

Rufus N. Garrett Jr. USAR Center
815 West 8th Street
El Dorado, AR



Photo 7: Looking west from northwest corner of subject property at commercial garage.



Photo 8: Looking north of subject property at church parking lot. Note, fire hydrant and storm water drain occupying northwest corner of property.

Rufus N. Garrett Jr. USAR Center
815 West 8th Street
El Dorado, AR



Photo 9: View of pole mounted transformers located in northeast corner of property.



Photo 10: Looking north from gazebo. View of war trophy on the Site.

Rufus N. Garrett Jr. USAR Center
815 West 8th Street
El Dorado, AR



Photo 11: Looking south, at gazebo, from northeast corner of property. Note, Dumpster and storm water drain on left and kitchen grease trap in the right background.



Photo 12: View of Dumpster looking east from Training Building. Note, residential adjoining properties in background.

Rufus N. Garrett Jr. USAR Center
815 West 8th Street
El Dorado, AR



Photo 13: Looking north from Dumpster at storm water drain.



Photo 14: Looking north at the south side of the Training Building. The arrow points to a storm drain on the Site.

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815 West 8th Street
El Dorado, AR



Photo 17: Looking southwest at grease trap on east side of Training Building. The kitchen and this associated grease trap are not in use.



Photo 18: View of water inside the grease trap.

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815 West 8th Street
El Dorado, AR



Photo 19: View looking southwest at cooling equipment associated with the Training Building.



Photo 20: Looking north, inside Training Building boiler room. The piping insulation appeared new.

Rufus N. Garrett Jr. USAR Center
815 West 8th Street
El Dorado, AR



Photo 21: View inside boiler room in Training Building. Fluorescent tubes are stored here pending offsite recycling.



Photo 22: Typical office inside of Training Building.

Rufus N. Garrett Jr. USAR Center
815 West 8th Street
El Dorado, AR



Photo 23: View of workout equipment in Training Building.



Photo 24: View of basic household strength cleaning supplies found in janitor closet in Training Building.

Rufus N. Garrett Jr. USAR Center
815 West 8th Street
El Dorado, AR



Photo 25: View of kitchen in Training Building. The kitchen is not in use.



Photo 26: Floor drain in center of kitchen in Training Building.

Rufus N. Garrett Jr. USAR Center
815 West 8th Street
El Dorado, AR



Photo 27: Looking north from the west side of the Storage Building, note storage containers in the center, surplus motor pool vehicle on the left, and a tarp covering a forklift on the right side (see arrow) of the small container. Also, the shaded area is the former vehicle wash rack (VWR) location as indicated by the 1998 Historic Architectural Resources report.



Photo 28: View inside of larger storage container. Container holds field food preparation equipment.

Rufus N. Garrett Jr. USAR Center
815 West 8th Street
El Dorado, AR



Photo 29: View inside of smaller storage container. Container holds field food preparation equipment.



Photo 30: Looking north from Storage Building at motor pool vehicles. Adequately sized, empty, oil catch pans to prevent engine oil from leaking onto the ground surface were under each vehicle. No stains were observed on the asphalt MEP area.

Rufus N. Garrett Jr. USAR Center
815 West 8th Street
El Dorado, AR



Photo 31: View of oil catch pan under a motor pool vehicle.



Photo 32: Looking southwest at the north side (front) of the Storage Building.

Rufus N. Garrett Jr. USAR Center
815 West 8th Street
El Dorado, AR



Photo 33: View looking to the east, showing west side of Storage Building.



Photo 34: Looking north at rear of Storage Building. Note lighter colored room off back of building formerly used for petroleum, oil, and lubricants (POL) storage. Also note forklift in right foreground and salvage drum to left of former POL storage.

Rufus N. Garrett Jr. USAR Center
815 West 8th Street
El Dorado, AR



Photo 35: View of forklift behind Storage Building. This forklift is not operational.



Photo 36: Salvage drum full of sand behind Storage Building, next to former POL storage room.

Rufus N. Garrett Jr. USAR Center
815 West 8th Street
El Dorado, AR



Photo 37: Looking northwest from the south side of the Storage Building at what appeared to be a removed grease rack.



Photo 38: View inside of former POL storage room. Room now houses field equipment.

Rufus N. Garrett Jr. USAR Center
815 West 8th Street
El Dorado, AR



Photo 39: View of inside Storage Building, field equipment stored inside of locked cage (right) and on rolling shelves (left side).



Photo 40: View of shelved field equipment in Storage Building.

Rufus N. Garrett Jr. USAR Center
815 West 8th Street
El Dorado, AR



Photo 41: Looking south at front of Storage Building and flammable storage room.



Photo 42: Typical storage in cabinets in flammable storage room.

Appendix C
Chain-of-Title Report



2055 East Rio Salado Parkway, Suite 201
Tempe, Arizona 85281

Phone: (480) 967-6752

Fax Number: (480) 966-9422

Web Site: www.netronline.com

HISTORICAL CHAIN OF TITLE REPORT

**RUFUS N. GARRETT, JR. USARC
815 WEST 8TH STREET
EL DORADO, ARKANSAS**

Submitted to:

TERRAINE, INC.
4002 Sutherland Ave
Knoxville, Tennessee 37919
(800) 531-1242

Attention: James Young

Project No. N06-4895

Tuesday, August 01, 2006

NETR- Real Estate Research & Information hereby submits the following ASTM historical chain-of-title to the land described below, subject to the leases/miscellaneous shown in Section 2. Title to the estate or interest covered by this report appears to be vested in:

UNITED STATES OF AMERICA

The following is the current property legal description:

All those certain pieces or parcels of land being Lots 12 thru 22, Block 1 of F. L. Dumas Subdivision No. 2, situated and lying in the Southeast $\frac{1}{4}$ of the Southwest $\frac{1}{4}$ of Section 20, Township 17 South, Range 15 West in the City of El Dorado, Union County, State of Arkansas

Assessor's Parcel No: 0860-00009-000

1. HISTORICAL CHAIN OF TITLE

1. WARRANTY DEED:

RECORDED: 11-03-1894
GRANTOR: John H. Hays
GRANTEE: Jerry Dumas and Carrie Dumas
INSTRUMENT: Bk 88, Pg 260

2. WARRANTY DEED:

RECORDED: 11-20-1916
GRANTOR: Jerry Dumas and Carrie Dumas, husband and wife
GRANTEE: J. A. Dumas
INSTRUMENT: Bk 54, Pg 331

3. WARRANTY DEED:

RECORDED: 06-24-1926
GRANTOR: J. A. Dumas and Georgia B. Dumas
GRANTEE: F. L. Dumas
INSTRUMENT: Bk 224, Pg 220

4. WARRANTY DEED:

RECORDED: 02-07-1944
GRANTOR: F. L. Dumas and Delva Dumas, husband and wife
GRANTEE: V. Victor Dumas
INSTRUMENT: Bk 481, Pg 100
COMMENTS: As to Lots 5, 18, 19, 20, 21, and 22.

5. WARRANTY DEED:

RECORDED: 06-17-1947
GRANTOR: F. L. Dumas and Delva Dumas
GRANTEE: V. Victor Dumas
INSTRUMENT: Bk 541, Pg 458
COMMENTS: As to Lots 6, 7, 16, and 17.

6. WARRANTY DEED:

RECORDED: 08-02-1950
GRANTOR: F. L. Dumas and Delva Dumas
GRANTEE: Van Victor Dumas, Sr.
INSTRUMENT: Bk 572, Pg 307
COMMENTS: As to Lots 12, 13, and 14.

7. WARRANTY DEED:

RECORDED: 04-26-1952
GRANTOR: F. L. Dumas and Delva Dumas
GRANTEE: Victor Dumas and Augusta Dumas
INSTRUMENT: Bk 623, Pg 205
COMMENTS: As to Lot 15

8. WARRANTY DEED:

RECORDED: 06-18-1959
GRANTOR: Van Victor Dumas, Sr., also known as Victor Dumas
and V. Victor Dumas and Augusta Dumas
GRANTEE: United States of America
INSTRUMENT: Bk 872, Pg 437

2. LEASES AND MISCELLANEOUS

1. No environmental liens, institutional controls or engineering controls were found of record.

3. LIMITATION

This report was prepared for the use of Terraine, Inc., exclusively. This report is neither a guarantee of title, a commitment to insure, or a policy of title insurance. NETR- Real Estate Research & Information does not guarantee nor include any warranty of any kind whether expressed or implied, about the validity of all information included in this report since this information is retrieved as it is recorded from the various agencies that make it available. The total liability is limited to the fee paid for this report.

Appendix D
Previous Environmental Reports

PREVIOUS ENVIRONMENTAL REPORTS

1. American Asbestos, Inc. *Final Submittals for Project 0001AB, El Dorado USARC, Lead Abatement/Contract DABT39-96-C-3047 for Fort Sill Army Base*. December 16, 1996.
2. Arkansas Heritage Program Web site for rare species in Washington County, Arkansas. <http://www.naturalheritage.com/program/element-search/default.asp>
3. City Directories copied at the El Dorado Tax Assessors Office. (pertinent pages only)
4. ECCI. *Environmental Baseline Survey*. March 2005.
5. El Dorado Tax Assessors Property Record Card.
6. Environmental Section of the 90th Regional Support Command, *Report on Lead Based Paint Tests Conducted at the USARC in El Dorado, AR*. May 27, 1997.
7. Interview Records.
8. Parsons Engineering Science, Inc. *Historic Architectural Resources Assessment of the 90th Regional Support Command Facilities in Arkansas*. February 1998.
9. Parsons Engineering Science, Inc. *Management Summary, Cultural Resources Assessment of 90th Regional Support Command, Facilities in Arkansas, Louisiana, New Mexico, Oklahoma and Texas*. February 1998.
10. U.S. Army Center for Health Promotion and Preventive Medicine. *Polychlorinated Biphenyls (PCB) Assessment No. 37-08-5615-97*. September 30, 1997. (pertinent pages only)
11. U.S. Army Reserve Command. Asbestos and Radon Memo. October 4, 1993.
12. U.S. Army Reserve Center, Detachment 1, 321st MMC, El Dorado, Arkansas Chemical Inventory. January 13, 2002.

13. U.S. Army 90th Regional Support Command. *Asbestos Building Inspection, Rufus Garrett USARC, El Dorado, AR*. January 1997.

14. USDA Soil Survey Map and Legend. (pertinent pages only)

APPENDIX E
REGULATORY DATABASE SEARCH RESULTS



EDR® Environmental
Data Resources Inc

The EDR Radius Map with GeoCheck®

**Rufus N. Garrett Jr. USARC
815 West 8th Street
El Dorado, AR 71730**

Inquiry Number: 1715401.2s

July 14, 2006

The Standard in Environmental Risk Management Information

440 Wheelers Farms Road
Milford, Connecticut 06461

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

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Physical Setting Source Map	A-7
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Physical Setting Source Records Searched	A-10

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-05) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

815 WEST 8TH STREET
EL DORADO, AR 71730

COORDINATES

Latitude (North): 33.224900 - 33° 13' 29.6"
Longitude (West): 92.675200 - 92° 40' 30.7"
Universal Transverse Mercator: Zone 15
UTM X (Meters): 530265.0
UTM Y (Meters): 3676075.0
Elevation: 234 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map: 33092-B6 EL DORADO WEST, AR
Most Recent Revision: 1981

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

FEDERAL RECORDS

NPL..... National Priority List
Proposed NPL..... Proposed National Priority List Sites
Delisted NPL..... National Priority List Deletions
NPL RECOVERY..... Federal Superfund Liens
CERCLIS..... Comprehensive Environmental Response, Compensation, and Liability Information System
CERC-NFRAP..... CERCLIS No Further Remedial Action Planned
CORRACTS..... Corrective Action Report
RCRA-TSDF..... Resource Conservation and Recovery Act Information
RCRA-LQG..... Resource Conservation and Recovery Act Information

EXECUTIVE SUMMARY

RCRA-SQG	Resource Conservation and Recovery Act Information
ERNS	Emergency Response Notification System
HMIRS	Hazardous Materials Information Reporting System
US ENG CONTROLS	Engineering Controls Sites List
US INST CONTROL	Sites with Institutional Controls
DOD	Department of Defense Sites
FUDS	Formerly Used Defense Sites
US BROWNFIELDS	A Listing of Brownfields Sites
CONSENT	Superfund (CERCLA) Consent Decrees
ROD	Records Of Decision
UMTRA	Uranium Mill Tailings Sites
ODI	Open Dump Inventory
TRIS	Toxic Chemical Release Inventory System
TSCA	Toxic Substances Control Act
FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
SSTS	Section 7 Tracking Systems
ICIS	Integrated Compliance Information System
PADS	PCB Activity Database System
MLTS	Material Licensing Tracking System
MINES	Mines Master Index File
FINDS	Facility Index System/Facility Registry System
RAATS	RCRA Administrative Action Tracking System

STATE AND LOCAL RECORDS

SHWS	Hazardous Substance Remedial Action Trust Fund Priority List
SWF/LF	Solid Waste Facility Permit Database
SWID	Solid Waste Illegal Dumps Database
SWRCY	Recycling Directory
AST	Aboveground Tank Database
SPILLS	Emergency Response Incidents
INST CONTROL	Institutional Control/Land Use Restriction Sites
VCP	Voluntary Cleanup Program Sites
BROWNFIELDS	Brownfields Projects
ENF	Consent Administrative Order, Notice of Violation Information Database
AR Sludge	Poultry Sludge Permit Sites
PERMITS	Permit Data System
AIRS	Permitted Facility Emission & Stack Data
ASBESTOS	Asbestos Notification of Intent Database

TRIBAL RECORDS

INDIAN RESERV	Indian Reservations
----------------------	---------------------

EDR PROPRIETARY RECORDS

Manufactured Gas Plants	EDR Proprietary Manufactured Gas Plants
EDR Historical Auto Stations	EDR Proprietary Historic Gas Stations
EDR Historical Cleaners	EDR Proprietary Historic Dry Cleaners

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified.

EXECUTIVE SUMMARY

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.

Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STATE AND LOCAL RECORDS

LUST: LUST Notice Information.

A review of the LUST list, as provided by EDR, and dated 04/13/2006 has revealed that there is 1 LUST site within approximately 0.5 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
ABANDONED FACILITY	714 WEST GROVE	1/4 - 1/2SSE	2	10

UST: RST Owner & Facilities.

A review of the UST list, as provided by EDR, and dated 04/13/2006 has revealed that there is 1 UST site within approximately 0.25 miles of the target property.

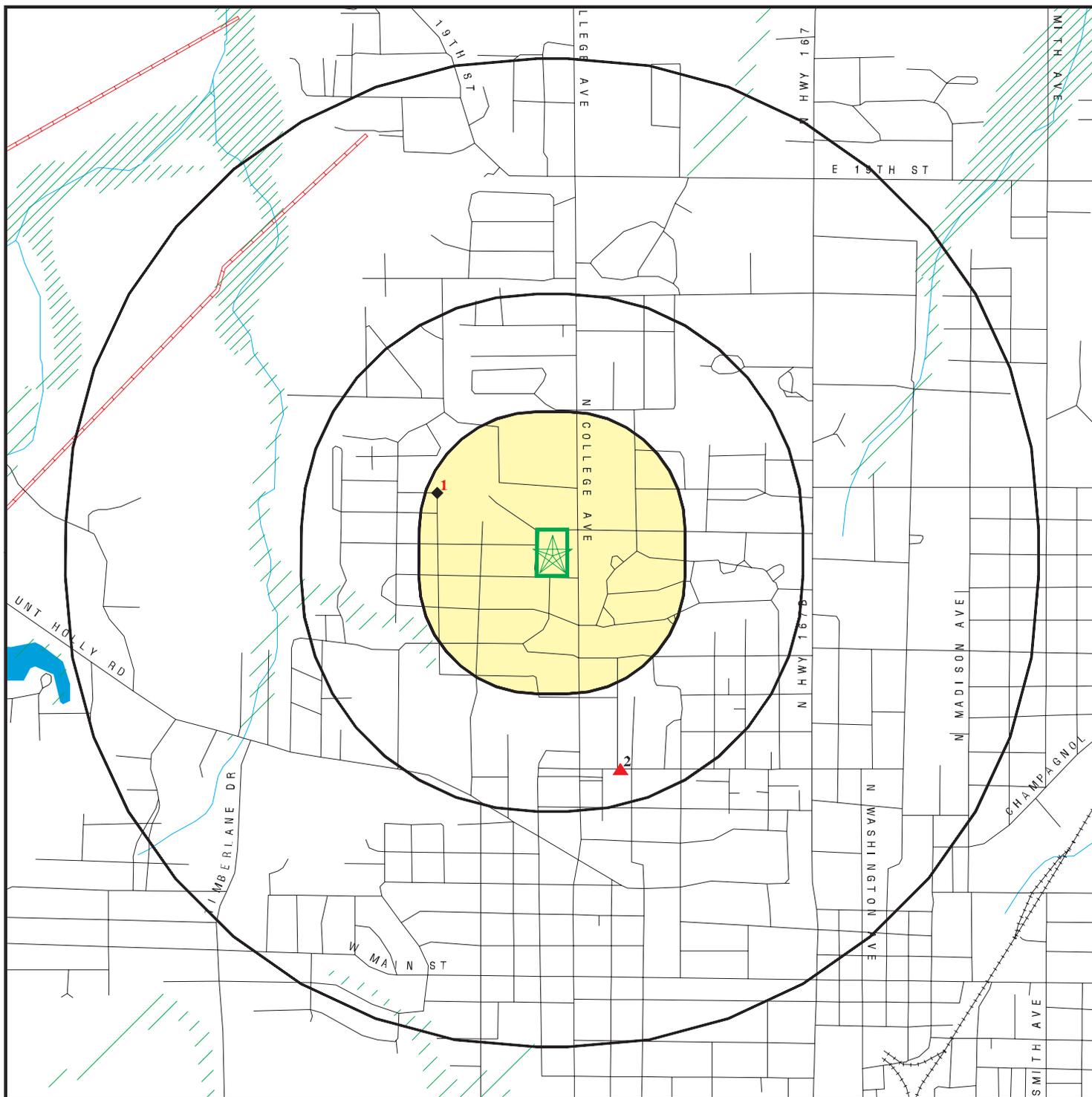
<u>Lower Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
<i>CUPPLES REFRIGERATION</i>	<i>1200 HAROLD ELLEN</i>	<i>1/8 - 1/4 WNW</i>	<i>1</i>	<i>6</i>

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped:

<u>Site Name</u>	<u>Database(s)</u>
BIG CORNIE CREEK	CERCLIS
EL DORADO CHEMICAL COMPANY TRIBUTARY	CERCLIS
GRIFFING RAILWAY REPAIR CO	CERCLIS, RCRA-SQG, FINDS
GREAT LAKES CHEMICAL CORPORATION - SOUTH	FINDS, RCRA-LQG, TRIS, CORRACTS, CERC-NFRAP
ELDORADO CHEMICAL COMPANY SITE	PADS, FINDS, SWF/LF, RCRA-LQG, TRIS, ENF, CERC-NFRAP, PERMITS
F F & N OIL COMPANY	PERMITS
GILLER MANAGEMENT CORP.	UST, PERMITS
A & D VACUUM SERVICE	UST, PERMITS
MARY HARRIS TEXACO	UST, PERMITS
TEXAS EASTERN TRANSMISSION COR	UST, PERMITS
BRUMMETT GROCERY	UST, PERMITS
A. W. CORTNEY	UST, PERMITS
MURPHY OIL USA INC -SID CAMPBE	UST, PERMITS
UNION SHOPPING CENTER	UST, PERMITS
PAPA'S GROCERY	UST, PERMITS
A-1 VACUUM SERVICE	UST, PERMITS
ARKANSAS TRANSPORT COMPANY	UST, PERMITS
O. D. GOODWIN GROCERY	UST, PERMITS
SMOKEY'S TEXACO	UST, PERMITS
ARKANSAS CHEMICALS, INC.	UST, PERMITS
B.H.P. PETROLEUM CORP.	UST, PERMITS
DUMAS CONSTRUCTION	UST, PERMITS
R & M COUNTRY STORE	UST, PERMITS
K & S GROCERY	UST, PERMITS
ARKLA WOOD	UST, PERMITS
POPILE, INC. SUPERFUND SITE	UST, PERMITS
UNION COUNTY WT COLLECTION	SWF/LF
GET RID OF IT	SWF/LF
GREAT LAKES WEST DONT CHANGE 11-94	SWF/LF
UNITED PARCEL SERVICE	UST
R - M COUNTRY STORE	UST
PIGEON HILL GRO.	AST
TRANSPORT CO INC	RCRA-SQG, FINDS
UNITED PARCEL SVC - EL DORADO	RCRA-SQG, FINDS
ENTERGY ARKANSAS EL DORADO DONAN SUB	RCRA-SQG, FINDS
A-1 VACUUM TRUCK SERVICE INC	RCRA-SQG, FINDS
HARRELLS PARKVIEW CLNRS	RCRA-SQG, FINDS
4500 N.W. AVE	ERNS
J. S. BEEBE, JR. - BEEBE, ALPHIN 6 LEASE	FINDS
J. S. BEEBE, JR. - BEEBE, ALPHIN 6 LEASE	ICIS

OVERVIEW MAP - 1715401.2s



-  Target Property
-  Sites at elevations higher than or equal to the target property
-  Sites at elevations lower than the target property
-  Manufactured Gas Plants
-  National Priority List Sites
-  Landfill Sites
-  Dept. Defense Sites

-  Indian Reservations BIA
-  Oil & Gas pipelines
-  100-year flood zone
-  500-year flood zone

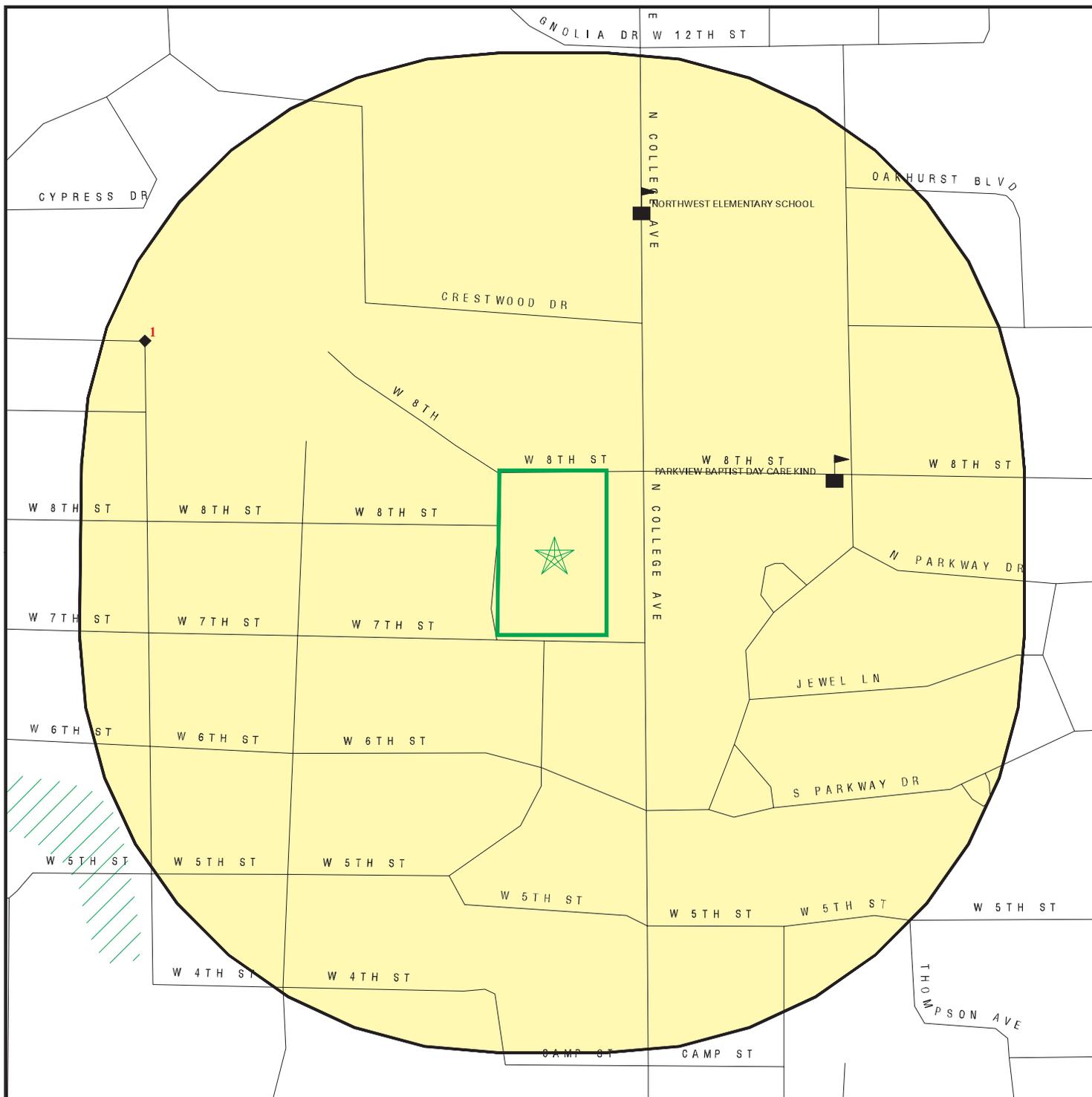


This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Rufus N. Garrett Jr. USARC
 ADDRESS: 815 West 8th Street
 EI Dorado AR 71730
 LAT/LONG: 33.2249 / 92.6752

CLIENT: ENSAFE
 CONTACT: Phil Hardy
 INQUIRY #: 1715401.2s
 DATE: July 14, 2006

DETAIL MAP - 1715401.2s



-  Target Property
-  Sites at elevations higher than or equal to the target property
-  Sites at elevations lower than the target property
-  Manufactured Gas Plants
-  Sensitive Receptors
-  National Priority List Sites
-  Landfill Sites
-  Dept. Defense Sites

-  Indian Reservations BIA
 -  Oil & Gas pipelines
 -  100-year flood zone
 -  500-year flood zone
- 0 1/16 1/8 1/4 Miles



This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Rufus N. Garrett Jr. USARC
 ADDRESS: 815 West 8th Street
 EI Dorado AR 71730
 LAT/LONG: 33.2249 / 92.6752

CLIENT: ENSAFE
 CONTACT: Phil Hardy
 INQUIRY #: 1715401.2s
 DATE: July 14, 2006

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
<u>FEDERAL RECORDS</u>								
NPL		1.000	0	0	0	0	NR	0
Proposed NPL		1.000	0	0	0	0	NR	0
Delisted NPL		1.000	0	0	0	0	NR	0
NPL RECOVERY	TP		NR	NR	NR	NR	NR	0
CERCLIS		0.500	0	0	0	NR	NR	0
CERC-NFRAP		0.500	0	0	0	NR	NR	0
CORRACTS		1.000	0	0	0	0	NR	0
RCRA TSD		0.500	0	0	0	NR	NR	0
RCRA Lg. Quan. Gen.		0.250	0	0	NR	NR	NR	0
RCRA Sm. Quan. Gen.		0.250	0	0	NR	NR	NR	0
ERNS	TP		NR	NR	NR	NR	NR	0
HMIRS	TP		NR	NR	NR	NR	NR	0
US ENG CONTROLS		0.500	0	0	0	NR	NR	0
US INST CONTROL		0.500	0	0	0	NR	NR	0
DOD		1.000	0	0	0	0	NR	0
FUDS		1.000	0	0	0	0	NR	0
US BROWNFIELDS		0.500	0	0	0	NR	NR	0
CONSENT		1.000	0	0	0	0	NR	0
ROD		1.000	0	0	0	0	NR	0
UMTRA		0.500	0	0	0	NR	NR	0
ODI		0.500	0	0	0	NR	NR	0
TRIS	TP		NR	NR	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0
FTTS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
ICIS	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
MINES		0.250	0	0	NR	NR	NR	0
FINDS	TP		NR	NR	NR	NR	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
<u>STATE AND LOCAL RECORDS</u>								
State Haz. Waste		1.000	0	0	0	0	NR	0
State Landfill		0.500	0	0	0	NR	NR	0
SWID		0.500	0	0	0	NR	NR	0
SWRCY		0.500	0	0	0	NR	NR	0
LUST		0.500	0	0	1	NR	NR	1
UST		0.250	0	1	NR	NR	NR	1
AST		0.250	0	0	NR	NR	NR	0
SPILLS	TP		NR	NR	NR	NR	NR	0
INST CONTROL		0.500	0	0	0	NR	NR	0
VCP		0.500	0	0	0	NR	NR	0
BROWNFIELDS		0.500	0	0	0	NR	NR	0
ENF	TP		NR	NR	NR	NR	NR	0
AR Sludge		0.500	0	0	0	NR	NR	0
PERMITS	TP		NR	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

<u>Database</u>	<u>Target Property</u>	<u>Search Distance (Miles)</u>	<u>< 1/8</u>	<u>1/8 - 1/4</u>	<u>1/4 - 1/2</u>	<u>1/2 - 1</u>	<u>> 1</u>	<u>Total Plotted</u>
AIRS		TP	NR	NR	NR	NR	NR	0
ASBESTOS		TP	NR	NR	NR	NR	NR	0
<u>TRIBAL RECORDS</u>								
INDIAN RESERV		1.000	0	0	0	0	NR	0
<u>EDR PROPRIETARY RECORDS</u>								
Manufactured Gas Plants		1.000	0	0	0	0	NR	0
EDR Historical Auto Stations		TP	NR	NR	NR	NR	NR	0
EDR Historical Cleaners		TP	NR	NR	NR	NR	NR	0

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

Site

Database(s)
 EDR ID Number
 EPA ID Number

1
WNW
1/8-1/4
1192 ft.

CUPPLES REFRIGERATION
1200 HAROLD ELLEN
EL DORADO, AR 71730

UST **U001905008**
PERMITS **N/A**

Relative:
Lower

PERMIT:

Actual:
221 ft.

Facility Type Desc:	Standard
Alternate Facility Name:	Not reported
Facility Status Code:	A
AFIN:	7000833
AFIN Status Date:	Not reported
AFIN Status Desc:	Active
Type Description:	STD
Owner Name:	EC HAMMOND OIL CO
Owner ID:	003151
Secondary Facility Address:	Not reported
Facility Invoice Billing Month:	Not reported
Facility Invoice Phone Number:	Not reported
Facility Invoice Comments:	Not reported
Facility Invoice Address:	Not reported
Facility Invoice City,St,Zip:	Not reported
Facility Invoice Country:	Not reported
Facility Telephone:	Not reported
Facility Fax:	Not reported
Facility Email:	Not reported
Mailing Address 1:	Not reported
Mailing Country:	Not reported
Other Identifier:	Not reported
Primary SIC Code:	Not reported
Secondary SIC Code:	Not reported
Tertiary SIC Code:	Not reported
Primary NAIC Code:	Not reported
Secondary NAIC Code:	Not reported
Tertiary NAICS Code:	Not reported
GIS Original Coordinate System:	Not reported
GIS Original Datum Code:	Not reported
GIS Current Datum Code:	Not reported
UTM Northing:	Not reported
UTM Easting:	Not reported
UTM Zone:	Not reported
Section/Township/Range:	Not reported
GIS Date Measured:	Not reported
GIS Source Name:	Not reported
GIS Collector Staff Code:	Not reported
GIS Certified Measurement:	No
GPS Receiver Type Name:	Not reported
GPS Receiver Channels:	Not reported
GIS Base Station Name:	Not reported
GIS Base Station Distance:	Not reported
GIS Min Point Positions:	Not reported
GIS Pdrop Mask:	Not reported
GIS Snr Mask:	Not reported
GIS Horizontal Accuracy:	Not reported
GIS Comment:	Not reported
GIS Huc:	Not reported
GIS Planning Segment:	Not reported
GIS Ark Sen Dist:	Not reported
GIS Ark Rep Dist:	Not reported
Created By:	Not reported

Map ID
Direction
Distance
Distance (ft.)
Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
EPA ID Number

CUPPLES REFRIGERATION (Continued)

U001905008

Record Created: 5/15/2005
Modified By: Not reported
Modified Date: Not reported
Primary SIC Desc: Not reported
Secondary SIC Desc: Not reported
Tertiary SIC Desc: Not reported
Primary NAICS Desc: Not reported
Secondary NAICS Desc: Not reported
Tertiary NAICS Desc: Not reported
Latitude Degree: Not reported
Latitude Minute: Not reported
Latitude Second: Not reported
Longitude Degree: Not reported
Longitude Minute: Not reported
Longitude Second: Not reported
Latitude Decimal: Not reported
Longitude Decimal: Not reported
Comments: New RST; RST Conversion Project 05/15/2005
Permit Number: 70000087
Permit Issued Date: Not reported
Permit Modified Date: Not reported
Permit Expiration Date: Not reported
Permit Void Date: Not reported
Permit Notice of Intent Date: Not reported
SW Div Fac Open Closed Code: Not reported
SW Div Fac Open Closed Desc: Not reported
Permit Post Closure Date: Not reported
Permit Media: R
Permit Type: Not reported
Permit Staff: Not reported
Permit Status: Not reported
Permit Status Date: Not reported
Initial Payment Fee Inventory Number: Not reported
Permit Fee Code: Not reported
Permit Fee Volume: Not reported
Permit Inventory Comment: Not reported
Permit Inv Comment Prt: N
Permit Inv Single Prt: N
Permit Inv Single Lbl: N
Permit Contact Name: E. C. HAMMOND OIL
Permit Contact Telephone: 5010000000
Permit Mail Address 1: CUPPLES REFRIGERATION
Permit Mail Address 2: 1200 HAROLD ELLEN
Permit Mail City,St,Zip: EL DORADO, AR 71730
Permit Contact Fax Number: Not reported
Permit Contact Email Address: Not reported
Permit GIS Original Coordinate System: Not reported
Permit GIS Original Datum Code: Not reported
Permit GIS Current Datum Code: Not reported
Permit UTM Northing: Not reported
Permit UTM Easting: Not reported
Permit UTM Zone: Not reported
Permit Section Township Range: Not reported
Permit GIS Date Measured: Not reported
Permit GIS Source Name: Not reported
Permit GIS Collector Staff Code: Not reported
Permit GIS Certified Measurement: Not reported

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

CUPPLES REFRIGERATION (Continued)

U001905008

Permit GPS Receiver Type Name: Not reported
 Permit GPS Receiver Cannels: Not reported
 Permit GIS Base Station Name: Not reported
 Permit GIS Base Station Distance: Not reported
 Permit GIS Min Point Positions: Not reported
 Permit GIS PDOP Mask: Not reported
 Permit GIS SNR Mask: Not reported
 Permit GIS Horizontal Accuracy: Not reported
 Permit GIS Comment: Not reported
 Permit GIS Huc: Not reported
 Permit GIS Planning Segment: Not reported
 Permit GIS Ark Sen Dist: Not reported
 Permit GIS Ark Rep Dist: Not reported
 Permit Prior Permit Number: Not reported
 Permit Other Identifier: Not reported
 Permit Primary SIC Code: Not reported
 Permit Secondary SIC Code: Not reported
 Permit Record Created: 2/22/1991
 Permit Media Description: RST
 Permit Type: Not reported
 Permit Status Description: Not reported
 Permit Fee Description: Not reported
 Permit Staff Name: Not reported
 Permit Latitude Degree: Not reported
 Permit Latitude Minute: Not reported
 Permit Latitude Second: Not reported
 Permit Longitude Degree: Not reported
 Permit Longitude Minute: Not reported
 Permit Longitude Second: Not reported
 Permit Latitude Decimal: Not reported
 Permit Longitude Decimal: Not reported
 Permit History: Not reported
 Permit Comment: Not reported

UST:

Facility ID: 70000087 Tank Status: Permanently Out of Service / / Install Date: 01/01/80 Tank Contents: Empty, Gasoline Tank Material: Steel GIS Location: 0 Hazardous: Not reported Entry Clerk: Not reported Update Clerk: Not reported Date Recieved: 4/18/1986 Latitude: Not reported Contact Name: E. C. HAMMOND OIL Contact Phone: 501-000-0000 Certified Name: RODNEY LANDES Date Signed: 4/16/1986 Above Ground: No Lust Flag: No No Bill: No Capacity in Gallons: 560 Number of Compartments: 1 Site Assesment Date: / /	Tank ID: 1 Cerclis Name: Not reported Federal Flag: Not reported Entry Date: 02/22/91 Update Date: / / Location SIC: Not reported Longitude: Not reported Contact Title: NOT LISTED Certified Title: PRESIDENT Amended: No Below Ground: Yes Leak ID Number: Not reported
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Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

CUPPLES REFRIGERATION (Continued)

U001905008

Site Assessment Leak:	Not reported
Release Detection:	Unknown
Release Detection Install Date:	/ /
Tank External Corrosion Protection:	Asphalt, / /
Tank Ext Corrosion Protection Install Date:	/ /
Pipe Material:	Galvanized Steel
Pipe Type:	Unknown
Piper Release Detection:	Unknown
Pipe Corrosion Protection:	Unknown
Tank Spill and Overfill Protection:	Unknown
Pipe Repaired:	/ /
Pipe Corrosion Protection:	Unknown
Certificate of Compliance Final Test Date:	/ /
Certificate of Compliance Test Company Licence:	Not reported
Certificate of Compliance Tester License:	Not reported
Certificate of Compliance Installation Date:	/ /
Certificate of Compliance Install Company Licence:	Not reported
Certificate of Compliance Installer License:	Not reported
Corrosion Protection:	Not reported
Spill and Overflow:	Not reported
Release Detection:	Not reported
ADEQ Facility ID:	7000833
ADEQ Facility ID (with dash):	70-00833
Date Reg. Cert. Issued:	Not reported
Active Site:	No
Aboveground in Use:	No
Underground in Use:	No
Inspection with Pix:	No
Inspection with Reports:	No
Owner ID:	003151
Owner Name:	EC HAMMOND OIL CO
Owner Address:	1007 SCHOOL ST
Owner City,St,Zip:	No
Owner County:	UNION
Owner Country:	Not reported
Owner Phone:	870-863-4274
Owner Type:	1
Tank Comments:	Not reported

AST/UST Eligible:

Date Eligible:	Not reported
Transaction Code:	Not reported
Entry Clerk:	Not reported
Entry Date:	Not reported
Update Clerk:	Not reported
Update Data:	Not reported
Eligibility Description:	Not reported

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

Site

Database(s)

EDR ID Number
 EPA ID Number

2 **ABANDONED FACILITY**
SSE **714 WEST GROVE**
1/4-1/2 **EL DORADO, AR 71730**
2245 ft.

LUST **S106571061**
N/A

Relative:
Higher

LUST:

Actual:
250 ft.

Notification Date: 4/27/1990 8:30:00 AM
 Notification Name: CONTACT: HAROLD CHANDLER
 Notification Address: Not reported
 Notification City,St,Zip: AR
 Notification Telephone: 5018627921
 Facility Address 2: Not reported
 Facility Telephone: 5018627921
 Facility County: 70
 Notice Number: 700005
 Received By: 26690
 Owner: S. E. REGIONAL HEALTH CENTER
 Leak Date: 4/27/1990
 Leak Cause: UNKNOWN. TANK ABANDONED SINCE 1973.
 Leak Damage: UNKNOWN.
 Leak Volume: 10
 Tech Branch: Not reported
 AFIN Number: 7000000
 RST Facility ID: Not reported
 Lust Tank Type: Unknown
 Lust Owner: Not reported
 Lust Discovery: Other (See Comments Tab)
 Release Status: Suspected
 Emergency Response: Not reported
 Emergency Response 2: Not reported
 Substance Stored: Unknown
 Damage Description: Not reported
 Hazard Abatement: Not reported
 Remedial Action: Not reported
 Cleanup Initiated: Not reported
 ISC Date: Not reported
 Priority Score: Not reported
 SAR Date: Not reported
 Cap Submit: Not reported
 Public Notify: Not reported
 Cap Approve: Not reported
 NFA Issued: Not reported
 Funding Source: Not reported
 Cleanup Lead: Not reported
 Gis Location: Not reported
 Lust Tank Type 2: Unknown
 RST Modified By: Not reported
 RST Modified Dt: Not reported
 Memo: METHOD OF DISCOVERY: RISING GROUNDWATER. TANK CLOSURE PROCEDURES INITIATED.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
EL DORADO	S106418647	F F & N OIL COMPANY	S13 / 14 T18S R14W	71730	PERMITS
EL DORADO	U001905033	GILLER MANAGEMENT CORP.	RT 1 BOX 197H	71730	UST, PERMITS
EL DORADO	U001904982	A & D VACUUM SERVICE	ROUTE 1, BOX 131	71730	UST, PERMITS
EL DORADO	1008377389	BIG CORNIE CREEK	HIGHWAY 15	71730	CERCLIS
EL DORADO	1001814738	TRANSPORT CO INC	HWY 15S	71730	RCRA-SQG, FINDS
EL DORADO	U001905019	MARY HARRIS TEXACO	HIGHWAY 167 NORTH	71730	UST, PERMITS
EL DORADO	U001905070	TEXAS EASTERN TRANSMISSION COR	HIGHWAY 167 NORTH	71730	UST, PERMITS
EL DORADO	1000158607	GREAT LAKES CHEMICAL CORPORATION - SOUTH	ROUTE 2 US 167	71730	FINDS, RCRA-LQG, TRIS, CORRACT CERC-NFRAP
EL DORADO	U001222467	BRUMMETT GROCERY	ROUTE 2, BOX 54-A	71730	UST, PERMITS
EL DORADO	U001222469	A. W. CORTNEY	ROUTE 2, BOX 101	71730	UST, PERMITS
EL DORADO	U001905049	MURPHY OIL USA INC -SID CAMPBE	ROUTE 2, BOX 163	71730	UST, PERMITS
EL DORADO	U001222491	UNION SHOPPING CENTER	ROUTE 3	71730	UST, PERMITS
EL DORADO	U001905043	PAPA'S GROCERY	ROUTE 3 BOX 140-B	71730	UST, PERMITS
EL DORADO	U001222414	A-1 VACUUM SERVICE	ROUTE 3, BOX 146 A	71730	UST, PERMITS
EL DORADO	U001222587	ARKANSAS TRANSPORT COMPANY	RT 3, BOX 1 (HWY 15) E. MAIN R	71730	UST, PERMITS
EL DORADO	U001905012	O. D. GOODWIN GROCERY	ROUTE 3, BOX 40-G	71730	UST, PERMITS
EL DORADO	U001222441	UNITED PARCEL SERVICE	RTE 5, BOX 305 HWY 82	71730	UST
EL DORADO	U001222485	SMOKEY'S TEXACO	ROUTE 5, BOX 95K	71730	UST, PERMITS
EL DORADO	U001222410	ARKANSAS CHEMICALS, INC.	ROUTE 6, BOX 98	71730	UST, PERMITS
EL DORADO	U001905005	B.H.P. PETROLEUM CORP.	ROUTE 6, BOX 157	71730	UST, PERMITS
EL DORADO	1000191313	ELDORADO CHEMICAL COMPANY SITE	HWY 7 SPUR NORTH	71730	PADS, FINDS, SWF/LF, RCRA-LQG, TRIS, ENF, CERC-NFRAP, PERMITS
EL DORADO	1008377390	EL DORADO CHEMICAL COMPANY TRIBUTARY	HIGHWAY 7 SOUTH BYPASS	71730	CERCLIS
EL DORADO	U001222437	DUMAS CONSTRUCTION	ROUTE 8, BOX 81	71730	UST, PERMITS
EL DORADO	1004672852	UNITED PARCEL SVC - EL DORADO	HWY 82 & PONDEROSA DR	71730	RCRA-SQG, FINDS
EL DORADO	U001222539	R - M COUNTRY STORE	HWY 82	71730	UST
EL DORADO	U001222556	R & M COUNTRY STORE	HIGHWAY 82 WEST - MAGNOLIA HWY	71730	UST, PERMITS
EL DORADO	2005618964	4500 N.W. AVE	4500 N.W. AVE	71730	ERNS
EL DORADO	S106802858	UNION COUNTY WT COLLECTION	1403 EAST HILLSBORO	71730	SWF/LF
EL DORADO	1001212503	ENTERGY ARKANSAS EL DORADO DONAN SUB	2.5M N HWY 15/167 ON 167	71730	RCRA-SQG, FINDS
EL DORADO	S107766137	GET RID OF IT	331 JOHNSTON FARM ROAD	71730	SWF/LF
EL DORADO	U001905014	K & S GROCERY	JUNCTION CITY HWY	71730	UST, PERMITS
EL DORADO	1000454159	A-1 VACUUM TRUCK SERVICE INC	MORO BAY HWY 15	71730	RCRA-SQG, FINDS
EL DORADO	A100040935	PIGEON HILL GRO.	1814 MORO BAY HWY	71730	AST
EL DORADO	1009271940	J. S. BEEBE, JR. - BEEBE, ALPHIN 6 LEASE	203 NEAL	71730	ICIS
EL DORADO	1004436740	J. S. BEEBE, JR. - BEEBE, ALPHIN 6 LEASE	203 NEAL	71730	FINDS
EL DORADO	1004672741	HARRELLS PARKVIEW CLNRS	103 N PARKWAY	71730	RCRA-SQG, FINDS
EL DORADO	1000228967	GRIFFING RAILWAY REPAIR CO	SCHOOL STREET BOX 1735	71730	CERCLIS, RCRA-SQG, FINDS
EL DORADO	U001904979	ARKLA WOOD	STATE LINE ROAD, ROUTE 1	71730	UST, PERMITS
EL DORADO	U003718721	POPILE, INC. SUPERFUND SITE	SOUTH WEST AVENUE / US. HWY 82	71730	UST, PERMITS
MARYSVILLE	S100001976	GREAT LAKES WEST DONT CHANGE 11-94	HWY 82	71730	SWF/LF

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

FEDERAL RECORDS

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 04/19/2006	Source: EPA
Date Data Arrived at EDR: 05/05/2006	Telephone: N/A
Date Made Active in Reports: 05/22/2006	Last EDR Contact: 05/05/2006
Number of Days to Update: 17	Next Scheduled EDR Contact: 07/31/2006
	Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 8
Telephone: 303-312-6774

EPA Region 4
Telephone 404-562-8033

Proposed NPL: Proposed National Priority List Sites

Date of Government Version: 04/19/2006	Source: EPA
Date Data Arrived at EDR: 05/05/2006	Telephone: N/A
Date Made Active in Reports: 05/22/2006	Last EDR Contact: 05/05/2006
Number of Days to Update: 17	Next Scheduled EDR Contact: 07/31/2006
	Data Release Frequency: Quarterly

DELISTED NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 04/19/2006	Source: EPA
Date Data Arrived at EDR: 05/05/2006	Telephone: N/A
Date Made Active in Reports: 05/22/2006	Last EDR Contact: 05/05/2006
Number of Days to Update: 17	Next Scheduled EDR Contact: 07/31/2006
	Data Release Frequency: Quarterly

NPL RECOVERY: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991	Source: EPA
Date Data Arrived at EDR: 02/02/1994	Telephone: 202-564-4267
Date Made Active in Reports: 03/30/1994	Last EDR Contact: 05/23/2006
Number of Days to Update: 56	Next Scheduled EDR Contact: 08/21/2006
	Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 02/01/2006	Source: EPA
Date Data Arrived at EDR: 03/21/2006	Telephone: 703-413-0223
Date Made Active in Reports: 04/13/2006	Last EDR Contact: 06/22/2006
Number of Days to Update: 23	Next Scheduled EDR Contact: 09/18/2006
	Data Release Frequency: Quarterly

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Date of Government Version: 02/01/2006	Source: EPA
Date Data Arrived at EDR: 03/21/2006	Telephone: 703-413-0223
Date Made Active in Reports: 04/13/2006	Last EDR Contact: 06/23/2006
Number of Days to Update: 23	Next Scheduled EDR Contact: 09/18/2006
	Data Release Frequency: Quarterly

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 03/15/2006	Source: EPA
Date Data Arrived at EDR: 03/17/2006	Telephone: 800-424-9346
Date Made Active in Reports: 04/13/2006	Last EDR Contact: 05/21/2006
Number of Days to Update: 27	Next Scheduled EDR Contact: 09/04/2006
	Data Release Frequency: Quarterly

RCRA: Resource Conservation and Recovery Act Information

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS). The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month. Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month. Transporters are individuals or entities that move hazardous waste from the generator off-site to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 03/09/2006	Source: EPA
Date Data Arrived at EDR: 04/27/2006	Telephone: 800-424-9346
Date Made Active in Reports: 05/30/2006	Last EDR Contact: 06/28/2006
Number of Days to Update: 33	Next Scheduled EDR Contact: 08/21/2006
	Data Release Frequency: Quarterly

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/31/2005	Source: National Response Center, United States Coast Guard
Date Data Arrived at EDR: 01/12/2006	Telephone: 202-260-2342
Date Made Active in Reports: 02/21/2006	Last EDR Contact: 04/26/2006
Number of Days to Update: 40	Next Scheduled EDR Contact: 07/24/2006
	Data Release Frequency: Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 12/31/2005	Source: U.S. Department of Transportation
Date Data Arrived at EDR: 04/14/2006	Telephone: 202-366-4555
Date Made Active in Reports: 05/30/2006	Last EDR Contact: 04/14/2006
Number of Days to Update: 46	Next Scheduled EDR Contact: 07/17/2006
	Data Release Frequency: Annually

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 03/21/2006	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/27/2006	Telephone: 703-603-8905
Date Made Active in Reports: 05/22/2006	Last EDR Contact: 07/03/2006
Number of Days to Update: 56	Next Scheduled EDR Contact: 10/02/2006
	Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 03/21/2006	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/27/2006	Telephone: 703-603-8905
Date Made Active in Reports: 05/22/2006	Last EDR Contact: 07/03/2006
Number of Days to Update: 56	Next Scheduled EDR Contact: 10/02/2006
	Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2004	Source: USGS
Date Data Arrived at EDR: 02/08/2005	Telephone: 703-692-8801
Date Made Active in Reports: 08/04/2005	Last EDR Contact: 05/12/2006
Number of Days to Update: 177	Next Scheduled EDR Contact: 08/07/2006
	Data Release Frequency: Semi-Annually

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 12/05/2005	Source: U.S. Army Corps of Engineers
Date Data Arrived at EDR: 01/19/2006	Telephone: 202-528-4285
Date Made Active in Reports: 02/21/2006	Last EDR Contact: 07/03/2006
Number of Days to Update: 33	Next Scheduled EDR Contact: 10/02/2006
	Data Release Frequency: Varies

US BROWNFIELDS: A Listing of Brownfields Sites

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Included in the listing are brownfields properties addresses by Cooperative Agreement Recipients and brownfields properties addressed by Targeted Brownfields Assessments. Targeted Brownfields Assessments-EPA's Targeted Brownfields Assessments (TBA) program is designed to help states, tribes, and municipalities--especially those without EPA Brownfields Assessment Demonstration Pilots--minimize the uncertainties of contamination often associated with brownfields. Under the TBA program, EPA provides funding and/or technical assistance for environmental assessments at brownfields sites throughout the country. Targeted Brownfields Assessments supplement and work with other efforts under EPA's Brownfields Initiative to promote cleanup and redevelopment of brownfields. Cooperative Agreement Recipients-States, political subdivisions, territories, and Indian tribes become Brownfields Cleanup Revolving Loan Fund (BCRLF) cooperative agreement recipients when they enter into BCRLF cooperative agreements with the U.S. EPA. EPA selects BCRLF cooperative agreement recipients based on a proposal and application process. BCRLF cooperative agreement recipients must use EPA funds provided through BCRLF cooperative agreement for specified brownfields-related cleanup activities.

Date of Government Version: 04/26/2006	Source: Environmental Protection Agency
Date Data Arrived at EDR: 04/27/2006	Telephone: 202-566-2777
Date Made Active in Reports: 05/30/2006	Last EDR Contact: 06/12/2006
Number of Days to Update: 33	Next Scheduled EDR Contact: 09/11/2006
	Data Release Frequency: Semi-Annually

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 12/14/2004	Source: Department of Justice, Consent Decree Library
Date Data Arrived at EDR: 02/15/2005	Telephone: Varies
Date Made Active in Reports: 04/25/2005	Last EDR Contact: 03/13/2006
Number of Days to Update: 69	Next Scheduled EDR Contact: 07/24/2006
	Data Release Frequency: Varies

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 04/13/2006	Source: EPA
Date Data Arrived at EDR: 04/28/2006	Telephone: 703-416-0223
Date Made Active in Reports: 05/30/2006	Last EDR Contact: 07/06/2006
Number of Days to Update: 32	Next Scheduled EDR Contact: 10/02/2006
	Data Release Frequency: Annually

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 11/04/2005	Source: Department of Energy
Date Data Arrived at EDR: 11/28/2005	Telephone: 505-845-0011
Date Made Active in Reports: 01/30/2006	Last EDR Contact: 06/21/2006
Number of Days to Update: 63	Next Scheduled EDR Contact: 09/18/2006
	Data Release Frequency: Varies

ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985	Source: Environmental Protection Agency
Date Data Arrived at EDR: 08/09/2004	Telephone: 800-424-9346
Date Made Active in Reports: 09/17/2004	Last EDR Contact: 06/09/2004
Number of Days to Update: 39	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2003	Source: EPA
Date Data Arrived at EDR: 07/13/2005	Telephone: 202-566-0250
Date Made Active in Reports: 08/17/2005	Last EDR Contact: 06/22/2006
Number of Days to Update: 35	Next Scheduled EDR Contact: 09/18/2006
	Data Release Frequency: Annually

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2002	Source: EPA
Date Data Arrived at EDR: 04/14/2006	Telephone: 202-260-5521
Date Made Active in Reports: 05/30/2006	Last EDR Contact: 04/12/2006
Number of Days to Update: 46	Next Scheduled EDR Contact: 07/17/2006
	Data Release Frequency: Every 4 Years

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 03/29/2006	Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Date Data Arrived at EDR: 04/26/2006	Telephone: 202-566-1667
Date Made Active in Reports: 05/30/2006	Last EDR Contact: 06/19/2006
Number of Days to Update: 34	Next Scheduled EDR Contact: 09/18/2006
	Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

Date of Government Version: 03/31/2006	Source: EPA
Date Data Arrived at EDR: 04/26/2006	Telephone: 202-566-1667
Date Made Active in Reports: 05/30/2006	Last EDR Contact: 06/19/2006
Number of Days to Update: 34	Next Scheduled EDR Contact: 09/18/2006
	Data Release Frequency: Quarterly

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2004	Source: EPA
Date Data Arrived at EDR: 05/11/2006	Telephone: 202-564-4203
Date Made Active in Reports: 05/22/2006	Last EDR Contact: 03/06/2006
Number of Days to Update: 11	Next Scheduled EDR Contact: 07/17/2006
	Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 02/13/2006	Source: Environmental Protection Agency
Date Data Arrived at EDR: 04/21/2006	Telephone: 202-564-5088
Date Made Active in Reports: 05/11/2006	Last EDR Contact: 04/11/2006
Number of Days to Update: 20	Next Scheduled EDR Contact: 07/17/2006
	Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 12/27/2005	Source: EPA
Date Data Arrived at EDR: 02/08/2006	Telephone: 202-566-0500
Date Made Active in Reports: 02/27/2006	Last EDR Contact: 06/28/2006
Number of Days to Update: 19	Next Scheduled EDR Contact: 08/07/2006
	Data Release Frequency: Annually

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/12/2006	Source: Nuclear Regulatory Commission
Date Data Arrived at EDR: 04/26/2006	Telephone: 301-415-7169
Date Made Active in Reports: 05/30/2006	Last EDR Contact: 07/03/2006
Number of Days to Update: 34	Next Scheduled EDR Contact: 10/02/2006
	Data Release Frequency: Quarterly

MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 02/09/2006	Source: Department of Labor, Mine Safety and Health Administration
Date Data Arrived at EDR: 03/29/2006	Telephone: 303-231-5959
Date Made Active in Reports: 05/30/2006	Last EDR Contact: 06/28/2006
Number of Days to Update: 62	Next Scheduled EDR Contact: 09/25/2006
	Data Release Frequency: Semi-Annually

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 04/27/2006	Source: EPA
Date Data Arrived at EDR: 05/02/2006	Telephone: N/A
Date Made Active in Reports: 05/30/2006	Last EDR Contact: 04/03/2006
Number of Days to Update: 28	Next Scheduled EDR Contact: 07/03/2006
	Data Release Frequency: Quarterly

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995	Source: EPA
Date Data Arrived at EDR: 07/03/1995	Telephone: 202-564-4104
Date Made Active in Reports: 08/07/1995	Last EDR Contact: 06/05/2006
Number of Days to Update: 35	Next Scheduled EDR Contact: 09/04/2006
	Data Release Frequency: No Update Planned

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/31/2003
Date Data Arrived at EDR: 06/17/2005
Date Made Active in Reports: 08/04/2005
Number of Days to Update: 48

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 06/30/2006
Next Scheduled EDR Contact: 09/11/2006
Data Release Frequency: Biennially

STATE AND LOCAL RECORDS

SHWS: Hazardous Substance Remedial Action Trust Fund Priority List

A partial prioritized listing of sites at which remedial actions and/or investigations shall be provided by the Hazardous Substance Remedial Action Trust Fund.

Date of Government Version: 12/02/2005
Date Data Arrived at EDR: 01/09/2006
Date Made Active in Reports: 02/07/2006
Number of Days to Update: 29

Source: Department of Environmental Quality
Telephone: 501-682-0850
Last EDR Contact: 07/12/2006
Next Scheduled EDR Contact: 10/09/2006
Data Release Frequency: Annually

SWF/LF: Solid Waste Facility Permit Database

Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 06/06/2006
Date Data Arrived at EDR: 06/07/2006
Date Made Active in Reports: 06/29/2006
Number of Days to Update: 22

Source: Department of Environmental Quality
Telephone: 501-682-0597
Last EDR Contact: 06/07/2006
Next Scheduled EDR Contact: 09/04/2006
Data Release Frequency: Quarterly

SWID: Solid Waste Illegal Dumps Database

Date of Government Version: 06/05/2006
Date Data Arrived at EDR: 06/07/2006
Date Made Active in Reports: 06/29/2006
Number of Days to Update: 22

Source: Department of Environmental Quality
Telephone: 501-682-0600
Last EDR Contact: 06/07/2006
Next Scheduled EDR Contact: 09/04/2006
Data Release Frequency: Quarterly

SWRCY: Recycling Directory

A listing of recycling facilities.

Date of Government Version: 06/05/2006
Date Data Arrived at EDR: 06/07/2006
Date Made Active in Reports: 06/29/2006
Number of Days to Update: 22

Source: Department of Environmental Quality
Telephone: 501-682-0865
Last EDR Contact: 06/07/2006
Next Scheduled EDR Contact: 09/04/2006
Data Release Frequency: Semi-Annually

LUST: Leaking Underground Storage Tank Data

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 04/13/2006
Date Data Arrived at EDR: 04/14/2006
Date Made Active in Reports: 05/17/2006
Number of Days to Update: 33

Source: Department of Environmental Quality
Telephone: 501-682-0984
Last EDR Contact: 04/14/2006
Next Scheduled EDR Contact: 07/17/2006
Data Release Frequency: Quarterly

UST: Underground Storage Tank Data

Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 04/13/2006
Date Data Arrived at EDR: 04/14/2006
Date Made Active in Reports: 05/24/2006
Number of Days to Update: 40

Source: Department of Environmental Quality
Telephone: 501-682-0984
Last EDR Contact: 04/14/2006
Next Scheduled EDR Contact: 07/17/2006
Data Release Frequency: Quarterly

AST: Aboveground Tank Database
Aboveground storage tank locations.

Date of Government Version: 04/13/2006
Date Data Arrived at EDR: 04/14/2006
Date Made Active in Reports: 05/24/2006
Number of Days to Update: 40

Source: Department of Environmental Quality
Telephone: 501-682-0984
Last EDR Contact: 04/14/2006
Next Scheduled EDR Contact: 07/17/2006
Data Release Frequency: Quarterly

SPILLS: Emergency Response Incidents
Spills and releases notified to the Department of Environmental Quality

Date of Government Version: 05/07/2006
Date Data Arrived at EDR: 05/09/2006
Date Made Active in Reports: 06/05/2006
Number of Days to Update: 27

Source: Department of Environmental Quality
Telephone: 501-682-0716
Last EDR Contact: 05/09/2006
Next Scheduled EDR Contact: 08/07/2006
Data Release Frequency: Quarterly

INST CONTROL: Institutional Control/Land Use Restriction Sites
Sites that have institutional controls and/or land use restrictions in place.

Date of Government Version: 12/01/2005
Date Data Arrived at EDR: 01/03/2006
Date Made Active in Reports: 02/07/2006
Number of Days to Update: 35

Source: Department of Environmental Quality
Telephone: 501-682-0867
Last EDR Contact: 06/16/2006
Next Scheduled EDR Contact: 09/11/2006
Data Release Frequency: Varies

VCP: Voluntary Cleanup Program Sites
A listing of Voluntary Cleanup Program projects.

Date of Government Version: 01/12/2006
Date Data Arrived at EDR: 01/23/2006
Date Made Active in Reports: 02/27/2006
Number of Days to Update: 35

Source: Department of Environmental Quality
Telephone: 501-682-0867
Last EDR Contact: 07/12/2006
Next Scheduled EDR Contact: 09/11/2006
Data Release Frequency: Varies

BROWNFIELDS: Brownfields Projects
Projects that the Department of Environmental Quality has received Brownfields applications for.

Date of Government Version: 12/01/2005
Date Data Arrived at EDR: 01/03/2006
Date Made Active in Reports: 02/07/2006
Number of Days to Update: 35

Source: Department of Environmental Quality
Telephone: 501-682-0867
Last EDR Contact: 06/16/2006
Next Scheduled EDR Contact: 09/11/2006
Data Release Frequency: Varies

ENFORCEMENT: Consent Administrative Order, Notice of Violation Information Database
Violations issued to facilities in various Department of Environmental Quality programs, including Air, Hazardous Waste, Storage Tanks, Solid Waste and Water.

Date of Government Version: 04/13/2006
Date Data Arrived at EDR: 04/14/2006
Date Made Active in Reports: 05/17/2006
Number of Days to Update: 33

Source: Department of Environmental Quality
Telephone: 501-682-0892
Last EDR Contact: 04/14/2006
Next Scheduled EDR Contact: 07/17/2006
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

SLUDGE: Poultry Sludge Permit Sites

Broiler fryer roast chickens, chicken eggs, poultry hatcheries, poultry and egg processing sites.

Date of Government Version: 04/10/2006
Date Data Arrived at EDR: 04/11/2006
Date Made Active in Reports: 05/17/2006
Number of Days to Update: 36

Source: Department of Environmental Quality
Telephone: 501-682-0673
Last EDR Contact: 07/12/2006
Next Scheduled EDR Contact: 10/09/2006
Data Release Frequency: Quarterly

PERMITS: Permit Data System

A list of sites permitted by the Department of Environmental Quality, including Air, Mining, Solid Waste and Water.

Date of Government Version: 04/10/2006
Date Data Arrived at EDR: 04/11/2006
Date Made Active in Reports: 05/17/2006
Number of Days to Update: 36

Source: Department of Environmental Quality
Telephone: 501-682-0673
Last EDR Contact: 07/12/2006
Next Scheduled EDR Contact: 10/09/2006
Data Release Frequency: Quarterly

AIRS: Permitted Facility Emission & Stack Data

Permitted facility emissions and stack data for the state.

Date of Government Version: 04/24/2006
Date Data Arrived at EDR: 05/01/2006
Date Made Active in Reports: 06/05/2006
Number of Days to Update: 35

Source: Department of Environmental Quality
Telephone: 501-682-0726
Last EDR Contact: 05/01/2006
Next Scheduled EDR Contact: 07/24/2006
Data Release Frequency: Quarterly

ASBESTOS: Asbestos Notification of Intent Database

The database contains all properties/facilities that have submitted a Notice of Intent for renovation or demolition activities.

Date of Government Version: 05/21/2006
Date Data Arrived at EDR: 05/22/2006
Date Made Active in Reports: 06/29/2006
Number of Days to Update: 38

Source: Department of Environmental Quality
Telephone: 501-682-0717
Last EDR Contact: 05/22/2006
Next Scheduled EDR Contact: 08/21/2006
Data Release Frequency: Quarterly

TRIBAL RECORDS

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2004
Date Data Arrived at EDR: 02/08/2005
Date Made Active in Reports: 08/04/2005
Number of Days to Update: 177

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 05/12/2006
Next Scheduled EDR Contact: 08/07/2006
Data Release Frequency: Semi-Annually

EDR PROPRIETARY RECORDS

Manufactured Gas Plants: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Historical Auto Stations: EDR Proprietary Historic Gas Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Historical Cleaners: EDR Proprietary Historic Dry Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data

Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 12/31/2004
Date Data Arrived at EDR: 02/17/2006
Date Made Active in Reports: 04/07/2006
Number of Days to Update: 49

Source: Department of Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 06/14/2006
Next Scheduled EDR Contact: 09/11/2006
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data

Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 05/02/2006
Date Data Arrived at EDR: 05/31/2006
Date Made Active in Reports: 06/27/2006
Number of Days to Update: 27

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 05/31/2006
Next Scheduled EDR Contact: 08/28/2006
Data Release Frequency: Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

PA MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 05/04/2006
Date Made Active in Reports: 06/06/2006
Number of Days to Update: 33

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 06/12/2006
Next Scheduled EDR Contact: 09/11/2006
Data Release Frequency: Annually

RI MANIFEST: Manifest information

Hazardous waste manifest information

Date of Government Version: 09/30/2005
Date Data Arrived at EDR: 05/09/2006
Date Made Active in Reports: 05/24/2006
Number of Days to Update: 15

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 06/19/2006
Next Scheduled EDR Contact: 09/18/2006
Data Release Frequency: Annually

WI MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 03/17/2006
Date Made Active in Reports: 05/02/2006
Number of Days to Update: 46

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 07/11/2006
Next Scheduled EDR Contact: 10/09/2006
Data Release Frequency: Annually

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

Electric Power Transmission Line Data

Source: PennWell Corporation
Telephone: (800) 823-6277

This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:

Source: American Hospital Association, Inc.
Telephone: 312-280-5991

The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing

Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000

A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes

Source: National Institutes of Health
Telephone: 301-594-6248

Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools

Source: National Center for Education Statistics
Telephone: 202-502-7300

The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Private Schools

Source: National Center for Education Statistics

Telephone: 202-502-7300

The National Center for Education Statistics' primary database on private school locations in the United States.

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetlands, Swamps, or Marshes

Source: Center for Advanced Spatial Technologies, University of Arkansas

Telephone: 605-594-6933

Scanned Digital USGS 7.5' Topographic Map (DRG)

Source: United States Geologic Survey

A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

STREET AND ADDRESS INFORMATION

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GEOCHECK[®] - PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

RUFUS N. GARRETT JR. USARC
815 WEST 8TH STREET
EL DORADO, AR 71730

TARGET PROPERTY COORDINATES

Latitude (North):	33.22490 - 33° 13' 29.6"
Longitude (West):	92.6752 - 92° 40' 30.7"
Universal Tranverse Mercator:	Zone 15
UTM X (Meters):	530265.0
UTM Y (Meters):	3676075.0
Elevation:	234 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	33092-B6 EL DORADO WEST, AR
Most Recent Revision:	1981

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

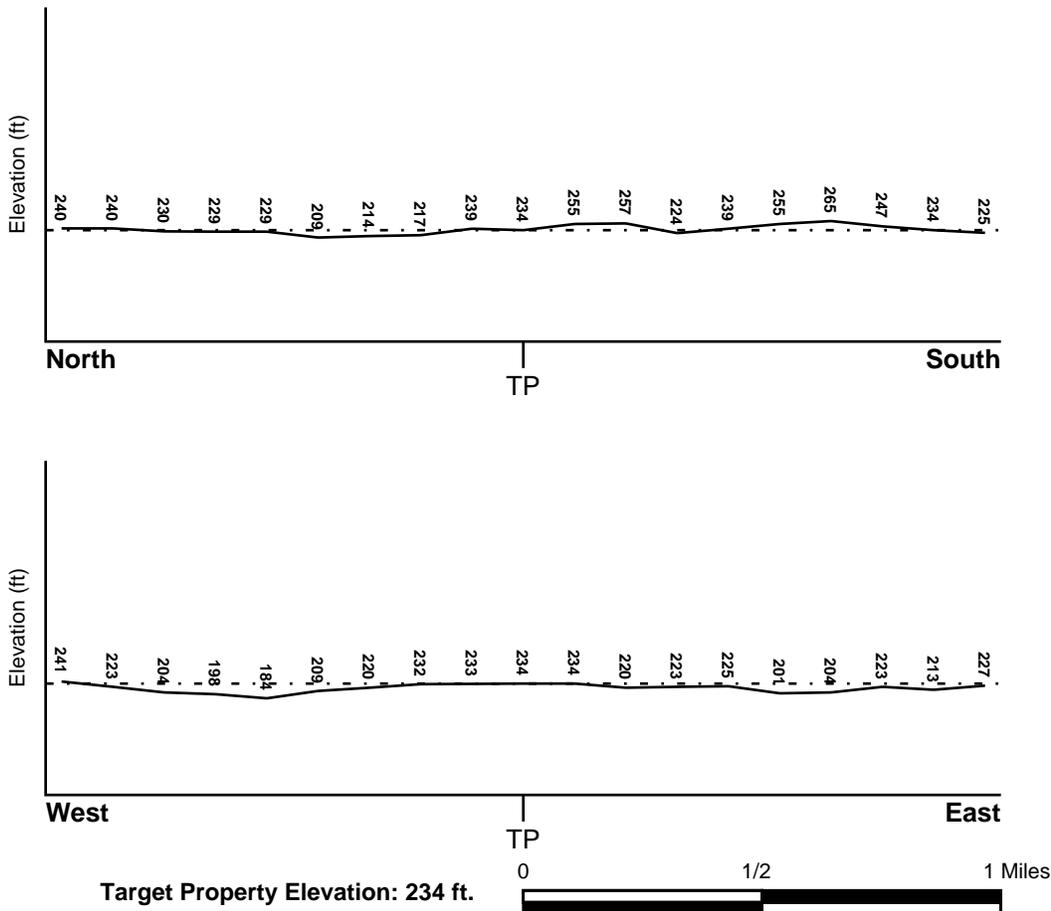
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General North

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

<u>Target Property County</u> UNION, AR	<u>FEMA Flood Electronic Data</u> YES - refer to the Overview Map and Detail Map
Flood Plain Panel at Target Property:	0502070010B
Additional Panels in search area:	0502070005B 0502050006A

NATIONAL WETLAND INVENTORY

<u>NWI Quad at Target Property</u> NOT AVAILABLE	<u>NWI Electronic Data Coverage</u> Not Available
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HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

<u>MAP ID</u>	<u>LOCATION FROM TP</u>	<u>GENERAL DIRECTION GROUNDWATER FLOW</u>
Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

Era: Cenozoic
System: Tertiary
Series: Eocene Claiborne Group
Code: Te2 (*decoded above as Era, System & Series*)

GEOLOGIC AGE IDENTIFICATION

Category: Stratified Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps. The following information is based on Soil Conservation Service STATSGO data.

Soil Component Name: SACUL

Soil Surface Texture: fine sandy loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Moderately well drained. Soils have a layer of low hydraulic conductivity, wet state high in the profile. Depth to water table is 3 to 6 feet.

Hydric Status: Soil does not meet the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel: HIGH

Depth to Bedrock Min: > 60 inches

Depth to Bedrock Max: > 60 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Permeability Rate (in/hr)	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	5 inches	fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 2.00 Min: 0.60	Max: 6.00 Min: 4.50
2	5 inches	9 inches	very fine sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 2.00 Min: 0.60	Max: 6.00 Min: 4.50
3	9 inches	41 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 0.20 Min: 0.06	Max: 5.50 Min: 3.60
4	41 inches	80 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 0.60 Min: 0.20	Max: 5.50 Min: 3.60

OTHER SOIL TYPES IN AREA

Based on Soil Conservation Service STATSGO data, the following additional subordinant soil types may appear within the general area of target property.

Soil Surface Textures: silt loam
loam

Surficial Soil Types: silt loam
loam

Shallow Soil Types: silt loam
fine sandy loam
sandy clay loam
clay loam

Deeper Soil Types: silty clay
loam
silt loam
fine sandy loam
sand
sandy clay loam
very gravelly - sandy loam
sandy loam
stratified

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

<u>DATABASE</u>	<u>SEARCH DISTANCE (miles)</u>
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
1	USGS2552703	1/2 - 1 Mile SSE

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

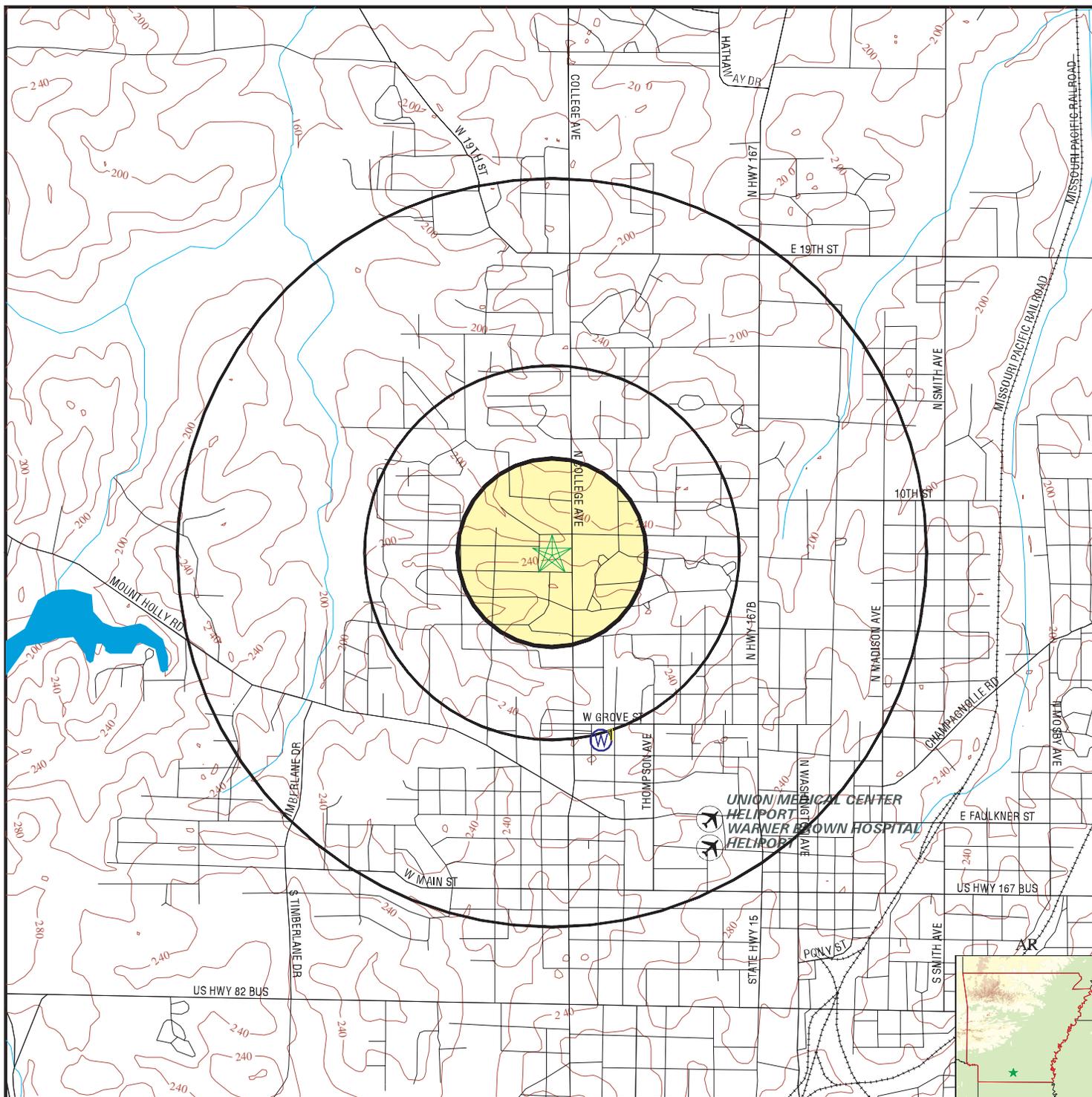
<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

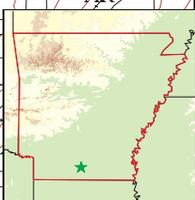
<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
No Wells Found		

PHYSICAL SETTING SOURCE MAP - 1715401.2s



- County Boundary
- Major Roads
- Contour Lines
- Airports
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons

- Groundwater Flow Direction
- Indeterminate Groundwater Flow at Location
- Groundwater Flow Varies at Location
- Closest Hydrogeological Data



SITE NAME: Rufus N. Garrett Jr. USARC
 ADDRESS: 815 West 8th Street
 EI Dorado AR 71730
 LAT/LONG: 33.2249 / 92.6752

CLIENT: ENSAFE
 CONTACT: Phil Hardy
 INQUIRY #: 1715401.2s
 DATE: July 14, 2006

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
 Direction
 Distance
 Elevation

Database EDR ID Number

1		
SSE	FED USGS	USGS2552703
1/2 - 1 Mile		
Higher		

Agency cd:	AR008	Site no:	331303092402201
Site name:	17S15W29AD1		
Latitude:	331303		
Longitude:	0924022	Dec lat:	33.21762966
Dec lon:	-92.67293443	Coor meth:	M
Coor accr:	T	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	05
State:	05	County:	139
Country:	US	Land net:	NESES 29T 17S R 15W 5
Location map:	EL DORADO WEST, AR	Map scale:	24000
Altitude:	Not Reported	Altitude method:	Not Reported
Altitude accuracy:	Not Reported	Altitude datum:	Not Reported
Hydrologic:	Lower OuachitaSmackover. Arkansas. Area = 1810 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	CST
Local standard time flag:	Y		
Type of ground water site:	Interconnected wells, also called connector or drainage wells		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	712	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	00700
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS RADON

AREA RADON INFORMATION

Federal EPA Radon Zone for UNION County: 3

Note: Zone 1 indoor average level > 4 pCi/L.
 : Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
 : Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 71730

Number of sites tested: 29

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.503 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	0.900 pCi/L	100%	0%	0%

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)

Source: United States Geologic Survey

EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Scanned Digital USGS 7.5' Topographic Map (DRG)

Source: United States Geologic Survey

A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetlands, Swamps, or Marshes

Source: Center for Advanced Spatial Technologies, University of Arkansas

Telephone: 605-594-6933

HYDROGEOLOGIC INFORMATION

AQUIFLOW^R Information System

Source: EDR proprietary database of groundwater flow information

EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit

Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Services

The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Services (NRCS)

Telephone: 800-672-5559

SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Services, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)

This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Arkansas Community Public Water Systems

Source: Health Department

Telephone: 501-661-2623

OTHER STATE DATABASE INFORMATION

RADON

Area Radon Information

Source: USGS

Telephone: 703-356-4020

The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones

Source: EPA

Telephone: 703-356-4020

Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities

Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater

Source: Department of Commerce, National Oceanic and Atmospheric Administration

PHYSICAL SETTING SOURCE RECORDS SEARCHED

STREET AND ADDRESS INFORMATION

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"Linking Technology with Tradition"®

Sanborn® Map Report

Ship To: Phil Hardy

ENSAFE

5724 Summer Trees Drive

Memphis, TN 38134

Order Date: 7/14/2006 **Completion Date:** 7/14/2006

Inquiry #: 1715401.3

P.O. #: 0888802978 0003 TS01

Site Name: Rufus N. Garrett Jr. USARC

Address: 815 West 8th Street

City/State: El Dorado, AR 71730

Cross Streets:

Customer Project: TEJV-ECP Proj.

1013941ERN

901-372-7962

This document reports that the largest and most complete collection of Sanborn fire insurance maps has been reviewed based on client supplied information, and fire insurance maps depicting the target property at the specified address were not identified.

NO COVERAGE

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EDR® Environmental
Data Resources Inc

EDR Historical Topographic Map Report

**Rufus N. Garrett Jr. USARC
815 West 8th Street
El Dorado, AR 71730**

Inquiry Number: 1715401.4

July 14, 2006

The Standard in Environmental Risk Management Information

**440 Wheelers Farms Road
Milford, Connecticut 06461**

Nationwide Customer Service

Telephone: 1-800-352-0050

Fax: 1-800-231-6802

Internet: www.edrnet.com

EDR Historical Topographic Map Report

Environmental Data Resources, Inc.'s (EDR) Historical Topographic Map Report is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR Historical Topographic Map Report includes a search of available public and private color historical topographic map collections. For more than a century, the USGS has been creating and revising topographic maps for the entire country at a variety of scales. There are about 60,000 U.S. Geological Survey (USGS) produced topographic maps covering the United States.

References

To meet the prior use requirements of ASTM E 1527-05, Section 8.3.2, the following *standard historical sources* may be used: aerial photographs, fire insurance maps, property tax files, land title records (although these cannot be the sole historical source consulted), topographic maps, city directories, building department records, or zoning/land use records. ASTM E 1527-05, Section 8.3 on Historical Use Information, identifies the prior use requirements for a Phase I environmental site assessment. ASTM E 1527-05 requires *"All obvious uses of the property shall be identified from the present, back to the property's first developed use, or back to 1940, whichever is earlier. This task requires reviewing only as many of the standard historical sources as are necessary and both reasonably ascertainable and likely to be useful."* (ASTM E 1527-05, Section 8.3.2) *Reasonably ascertainable means information that is publicly available, obtainable from a source within reasonable time and cost constraints, and practically reviewable.*

EPA's Standards and Practices for All Appropriate Inquiries (AAI), Section § 312.24, identifies the historical sources of information necessary to achieve the objectives and performance factors of § 312.20. According to AAI, *"historical documents and records may include, but are not limited to, aerial photographs, fire insurance maps, building department records, chain of title documents, and land use records."*

References

In order to address data gaps, additional sources of information may be consulted. According to the AAI, Section § 312.20 (g), *"to the extent there are data gaps (as defined in § 312.10) in the information developed...that affect the ability of persons (including the environmental professional) conducting the all appropriate inquiries to identify conditions indicative of releases or threatened releases...such persons should identify such data gaps, identify the sources of information consulted to address such data gaps, and comment upon the significance of such data gaps."* According to ASTM E 1527-05, Section 8.3.2.3, *"historical research is complete when either: (1) the objectives in 8.3.1 through 8.3.2.2 are achieved; or (2) data failure is encountered. Data failure occurs when all of the standard historical sources that are reasonably ascertainable and likely to be useful have been reviewed and yet the objectives have not been met....If data failure is encountered, the report shall document the failure and, if any of the standard historical sources were excluded, give the reasons for their exclusion."*

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The EDR Aerial Photo Decade Package

**Rufus N. Garrett Jr. USARC
815 West 8th Street
El Dorado, AR 71730**

Inquiry Number: 1715401.5

July 14, 2006



**EDR® Environmental
Data Resources Inc**

The Standard in Environmental Risk Management Information

440 Wheelers Farms Road
Milford, Connecticut 06461

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

EDR Aerial Photo Decade Package

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDRs professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

This document reports that EDR searched its own collection or select outside repository collections of aerial photography, and based on client-supplied target property information, aerial photography, including the target property was not deemed reasonably ascertainable by Environmental Data Resources, Inc. (EDR). This no coverage determination reflects a search only of aerial photography repository collections that EDR accessed. It can not be concluded from this search that no coverage for the target property exists anywhere, in any collection.

NO COVERAGE

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EDR® Environmental
Data Resources Inc

The EDR-City Directory
Abstract

Rufus N. Garrett Jr. USARC
815 West 8th Street
El Dorado, AR 71730

Inquiry Number: 1715401.6

Monday, July 17, 2006

**The Standard in
Environmental Risk
Management Information**

440 Wheelers Farms Road
Milford, Connecticut 06461

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

EDR City Directory Abstract

Environmental Data Resources, Inc.'s (EDR) City Directory Abstract is a screening report designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Abstract includes a search and abstract of available city directory data. For each address, the directory lists the name of the corresponding occupant at five year intervals.

Thank you for your business.

Please contact EDR at 1-800-352-0050
with any questions or comments.

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SUMMARY

- ***City Directories:***

Business directories including city, cross reference and telephone directories were reviewed, if available, at approximately five year intervals for the years spanning 1963 through 2006. (These years are not necessarily inclusive.) A summary of the information obtained is provided in the text of this report.

Date EDR Searched Historical Sources: July 17, 2006

Target Property:

815 West 8th Street
El Dorado, AR 71730

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1963	Address Not Listed in Research Source	Polk's City Directory
1966	Address Not Listed in Research Source	Polk's City Directory
1971	Address Not Listed in Research Source	Polk's City Directory
1976	Address Not Listed in Research Source	Polk's City Directory
1981	Address Not Listed in Research Source	Polk's City Directory
1986	Address Not Listed in Research Source	Polk's City Directory
1991	Address Not Listed in Research Source	Polk's City Directory
1996	Address Not Listed in Research Source	Polk's City Directory
2001	U S Army Reserve Center	Polk's City Directory
	U S Governmentn MMC	Polk's City Directory
2006	U S Army Reserve Center	Polk's City Directory

Adjoining Properties

SURROUNDING

Multiple Addresses
El Dorado, AR 71730

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1963	<u>** WEST 8TH STREET **</u>	Polk's City Directory
	Saint Paul United Methodist Church (700)	Polk's City Directory
	Address not listed in research source (905)	Polk's City Directory
	Address not listed in research source (909)	Polk's City Directory
	Address not listed in research source (910)	Polk's City Directory

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1963	No other addresses in 700- 905 block West 8Th Street	Polk's City Directory
	<u>** N MURPHY AVE **</u>	Polk's City Directory
	Address not listed in research source (1220)	Polk's City Directory
1966	<u>** WEST 8TH STREET **</u>	Polk's City Directory
	Saint Paul United Methodist Church (700)	Polk's City Directory
	Residence (905)	Polk's City Directory
	Residence (909)	Polk's City Directory
	Residence (910)	Polk's City Directory
	No other addresses in 700- 905 block West 8Th Street	Polk's City Directory
	<u>** N MURPHY AVE **</u>	Polk's City Directory
	Address not listed in research source (1220)	Polk's City Directory
1971	<u>** WEST 8TH STREET **</u>	Polk's City Directory
	Saint Paul United Methodist Church (700)	Polk's City Directory
	Residence (905)	Polk's City Directory
	Residence (909)	Polk's City Directory
	Residence (910)	Polk's City Directory
	No other addresses in 700- 905 block West 8Th Street	Polk's City Directory
	<u>** N MURPHY AVE **</u>	Polk's City Directory
	Simpson's Garage (1220)	Polk's City Directory
1976	<u>** WEST 8TH STREET **</u>	Polk's City Directory
	Saint Paul United Methodist Church (700)	Polk's City Directory
	Residence (905)	Polk's City Directory

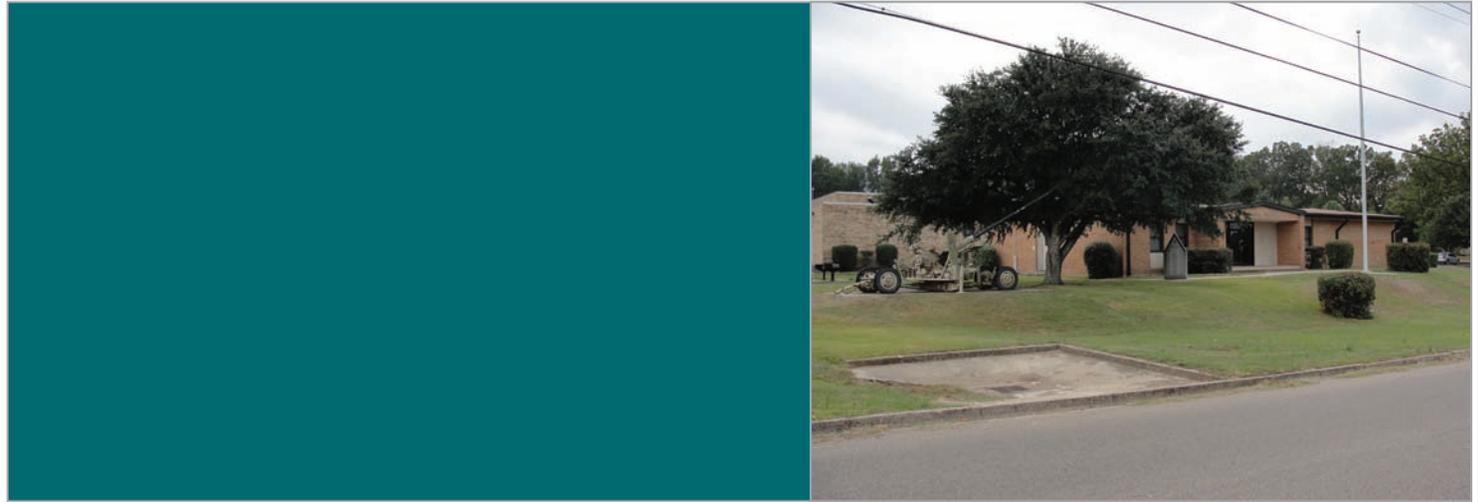
<u>Year</u>	<u>Uses</u>	<u>Source</u>
1976	Residence (909)	Polk's City Directory
	Residence (910)	Polk's City Directory
	No other addresses in 700- 905 block West 8Th Street	Polk's City Directory
	<u>** N MURPHY AVE **</u>	Polk's City Directory
	Simpson's Garage (1220)	Polk's City Directory
1981	<u>** WEST 8TH STREET **</u>	Polk's City Directory
	Saint Paul United Methodist Church (700)	Polk's City Directory
	Residence (905)	Polk's City Directory
	No Return (909)	Polk's City Directory
	Residence (910)	Polk's City Directory
	No other addresses in 700- 905 block West 8Th Street	Polk's City Directory
	<u>** N MURPHY AVE **</u>	Polk's City Directory
	Simpson's Garage (1220)	Polk's City Directory
1986	<u>** WEST 8TH STREET **</u>	Polk's City Directory
	Saint Paul United Methodist Church (700)	Polk's City Directory
	Residence (905)	Polk's City Directory
	Residence (909)	Polk's City Directory
	Residence (910)	Polk's City Directory
	No other addresses in 700- 905 block West 8Th Street	Polk's City Directory
	<u>** N MURPHY AVE **</u>	Polk's City Directory
	Simpson's Garage (1220)	Polk's City Directory
1991	<u>** WEST 8TH STREET **</u>	Polk's City Directory

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1991	Saint Paul United Methodist Church (700)	Polk's City Directory
	Residence (905)	Polk's City Directory
	Residence (909)	Polk's City Directory
	Residence (910)	Polk's City Directory
	No other addresses in 700- 905 block West 8Th Street	Polk's City Directory
	<u>** N MURPHY AVE **</u>	Polk's City Directory
	Simpson's Garage (1220)	Polk's City Directory
1996	<u>** WEST 8TH STREET **</u>	Polk's City Directory
	Saint Paul United Methodist Church (700)	Polk's City Directory
	Residence (905)	Polk's City Directory
	Not Verified (909)	Polk's City Directory
	Residence (910)	Polk's City Directory
	No other addresses in 700- 905 block West 8Th Street	Polk's City Directory
	<u>** N MURPHY AVE **</u>	Polk's City Directory
	Simpson's Garage (1220)	Polk's City Directory
2001	<u>** WEST 8TH STREET **</u>	Polk's City Directory
	No address listings prior to the Target Property	Polk's City Directory
	Residence (905)	Polk's City Directory
	Residence (909)	Polk's City Directory
	Residence (910)	Polk's City Directory
	<u>** N MURPHY AVE **</u>	Polk's City Directory
	Simpson's Garage (1220)	Polk's City Directory

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2006	<u>** WEST 8TH STREET **</u>	Polk's City Directory
	No address listings prior to the Target Property	Polk's City Directory
	Residence (905)	Polk's City Directory
	Residence (909)	Polk's City Directory
	Residence (910)	Polk's City Directory
	<u>** N MURPHY AVE **</u>	Polk's City Directory
	Simpson's Garage (1220)	Polk's City Directory

APPENDIX B
SUPPORTING DOCUMENTATION

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Architectural Survey Of 3 US Army Reserve Centers in the State of Arkansas

Contract No. W91278-07-D-0111

Task Order No.0033

ARKANSAS

January 2011

Architectural Survey Of 3 US Army Reserve Centers in the
State of Arkansas

Contract No. W91278-07-D-0111
Task Order No.0033

Prepared for the:

US Army Corps of Engineers, Mobile District
and the
US Army Reserve, 63d Regional Support Command

Prepared By:

Charles F. Philips
Architectural Historian

Under the Direction of



Patricia Stallings
Principal Investigator

January 2011

MANAGEMENT SUMMARY

In July 2010, Brockington and Associates, Inc. (Brockington) contracted with the US Army Corps of Engineers (USACE, Mobile District) to conduct an architectural inventory and evaluation of 28 US Reserve Center (USARC) buildings in New Mexico, Arkansas, Oklahoma and Texas. This work was performed on behalf of the US Army Reserve, 63d Regional Support Command (63d RSC). All the US Army Reserve (USAR) Centers included in this contract were selected for closure under 2005 Base Realignment and Closure (BRAC). The purpose of this study is to establish whether historic properties are present under the National Historic Preservation Act (NHPA).

This report evaluates the architectural resources at three sites in the state of Arkansas. These include: Camden USARC in Camden; the Rufus N. Garrett, Jr. USARC in El Dorado; and the Samuel S. Stone, Jr. USARC in Pine Bluff. The architectural survey was conducted in compliance with Section 106 of the NHPA of 1966, its implementing regulations (36 CFR Part 800), and Army Regulation (AR) 200-1. All research, fieldwork, and reporting associated with this project conforms to the standards and guidelines set forth by the Arkansas Historic Preservation Office.

The project historian conducted an architectural survey and evaluation of six buildings at three facilities in Arkansas. All structures at the three facilities do not retain sufficient architectural integrity, do not possess a high degree of architectural design or merit, do not possess significant historical associations, or do not meet the 50-year age consideration as outlined by the National Register of Historic Places (NRHP). We recommend the structures at all three facilities listed in Table 1-1 as not eligible for the NRHP and requiring no further management considerations.

ACKNOWLEDGEMENTS

The author is grateful for several individuals who contributed to the successful completion of this project. The project was funded by the US Army Corps of Engineers, Mobile District. Mr. Joseph S. Murphey at the USACE, Ft. Worth District, provided technical assistance and served as the primary point of contact for all work. At the 63d Regional Support Command, Mr. Jim Wheeler offered logistical support and Mr. Kendall Rasberry provided engineering drawings.

At the three facilities several individuals provided available written documentation and acted as a tour guides to their centers. This included interior inspection to nearly all structures. We wish to thank Mrs. Illinois Williams at Camden; Mr. Timothy Bastien at El Dorado; and Sergeants Debra Rulle, Eric May and Gerald Price (Retired) at Pine Bluff. Ms. F. Patricia Stallings served as principal investigator and offered technical assistance throughout the project and Ms. Paige Wagener reviewed the manuscript, aided the author and also offered technical assistance.

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1.0 INTRODUCTION AND METHODS OF INVESTIGATION

In September 2010 Brockington and Associates, Inc., conducted an intensive architectural survey of six buildings at three US Army Reserve Centers in Arkansas (see Table 1.1, Figures 1.1-1.4). This survey was conducted in compliance with Section 106 of the National Historic Preservation Act (NHPA), its implementing regulations (36 CFR Part 800), and Army Regulation (AR) 200-1. The primary goal of this investigation was to identify all architectural resources on the USARC properties, assess the potential significance of these resources based on National Register of Historic Places (NRHP) criteria, and develop management recommendations for any historic properties. The archival research and fieldwork were tailored to meet these goals.

1.1 METHODS OF INVESTIGATION

1.1.1 *Archival Research*

The project historian conducted primary research tasks by contacting resource management personnel at each of the facilities. As a result of these inquiries, a limited number of archival records were located at the facilities. Previous reports and comprehensive studies on Army Reserve Centers were consulted to attain the history, evolution and design of post war Army Reserve facilities. Documents reviewed include the Historic Architectural Resources Assessment of the 90th Regional Support Command Facilities in Arkansas (Parsons 1998) and Blueprints for the Citizen Soldier: A Nationwide Historic Context of United States Army Reserve Centers (Moore, et al. 2008). We also reviewed facility engineering drawings including original drawings if available.

1.1.2 *Architectural Survey*

As part of the inventory and evaluation process for the Arkansas Reserve Center facilities, the project historian documented all historic architectural resources located on the USARC properties. This aspect of the survey consisted of an interior and exterior pedestrian inspection of all potentially historic buildings and structures. Each building was photographed digitally

and notes were taken as to construction methods, materials, alterations, additions and character defining features. The survey recorded all buildings meeting the 50-year age requirement for inclusion in the NRHP. In addition, because the buildings are being transferred from USAR possession through BRAC, we inventoried resources less than 50 years old. According to NRHP criteria, resources less than 50 years of age may be eligible if they are of “exceptional significance.” Architectural resources described in this report were recorded according to the standards of the Arkansas Historic Preservation Program.

The buildings located at the Arkansas facilities were broadly categorized into two property types: administrative and training buildings and support buildings. This latter category is routinely found on all military installations. Administrative and training buildings are defined as those buildings that are associated with military function of the facility, specifically command operations as well as classroom training. Support buildings are categorized as those which provide logistical support to the military functions and activities. These buildings include the storage and repair of motor vehicles and ordnance as well as the general storage of military items. Table 1.1 provides a full list of all the buildings at the various centers we surveyed. It also lists the NRHP Eligibility recommendation we made at each location.

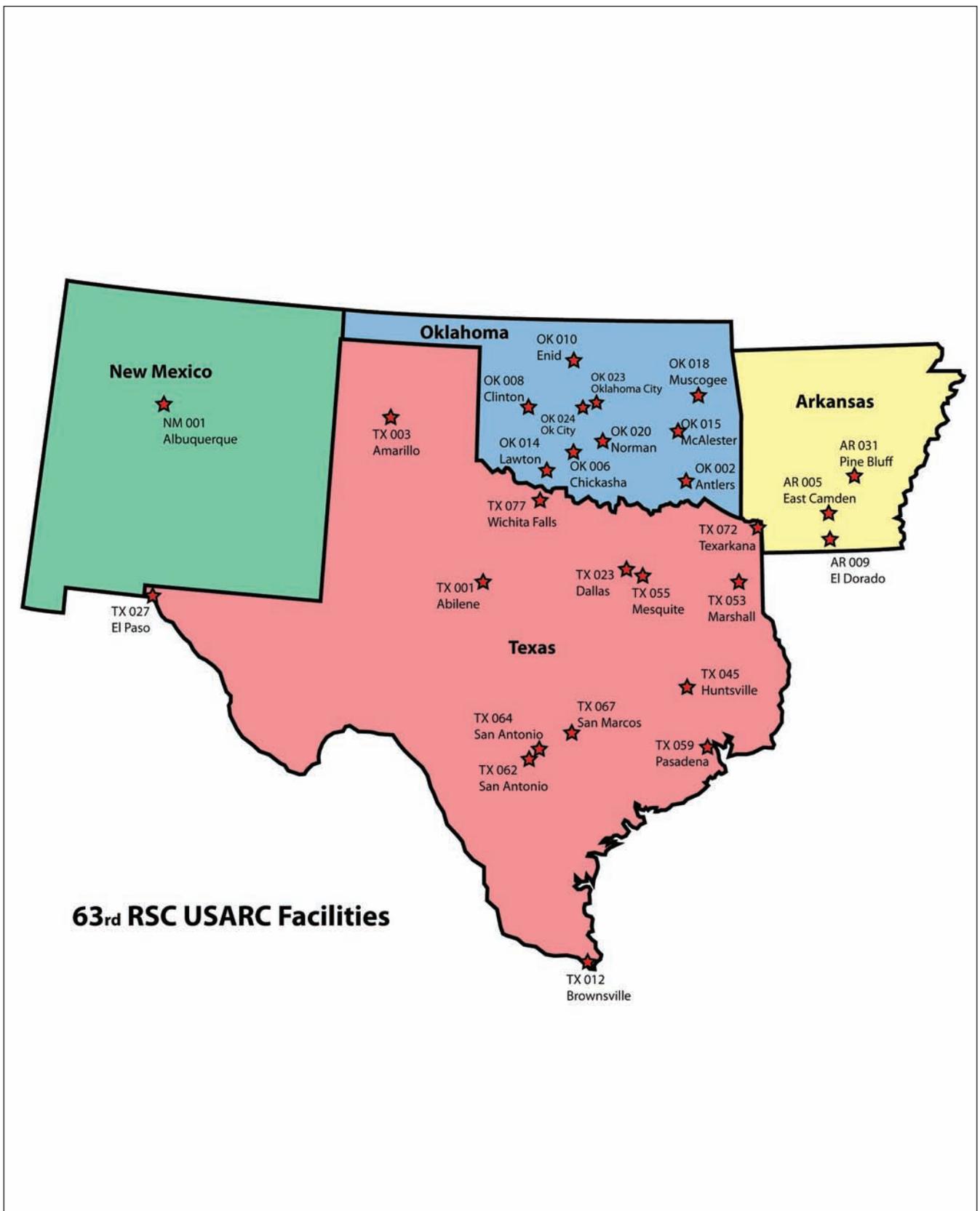


Figure 1.1 Map of the US Army Reserve Center locations in Arkansas that were surveyed in this report (Courtesy of the US Army Reserve).

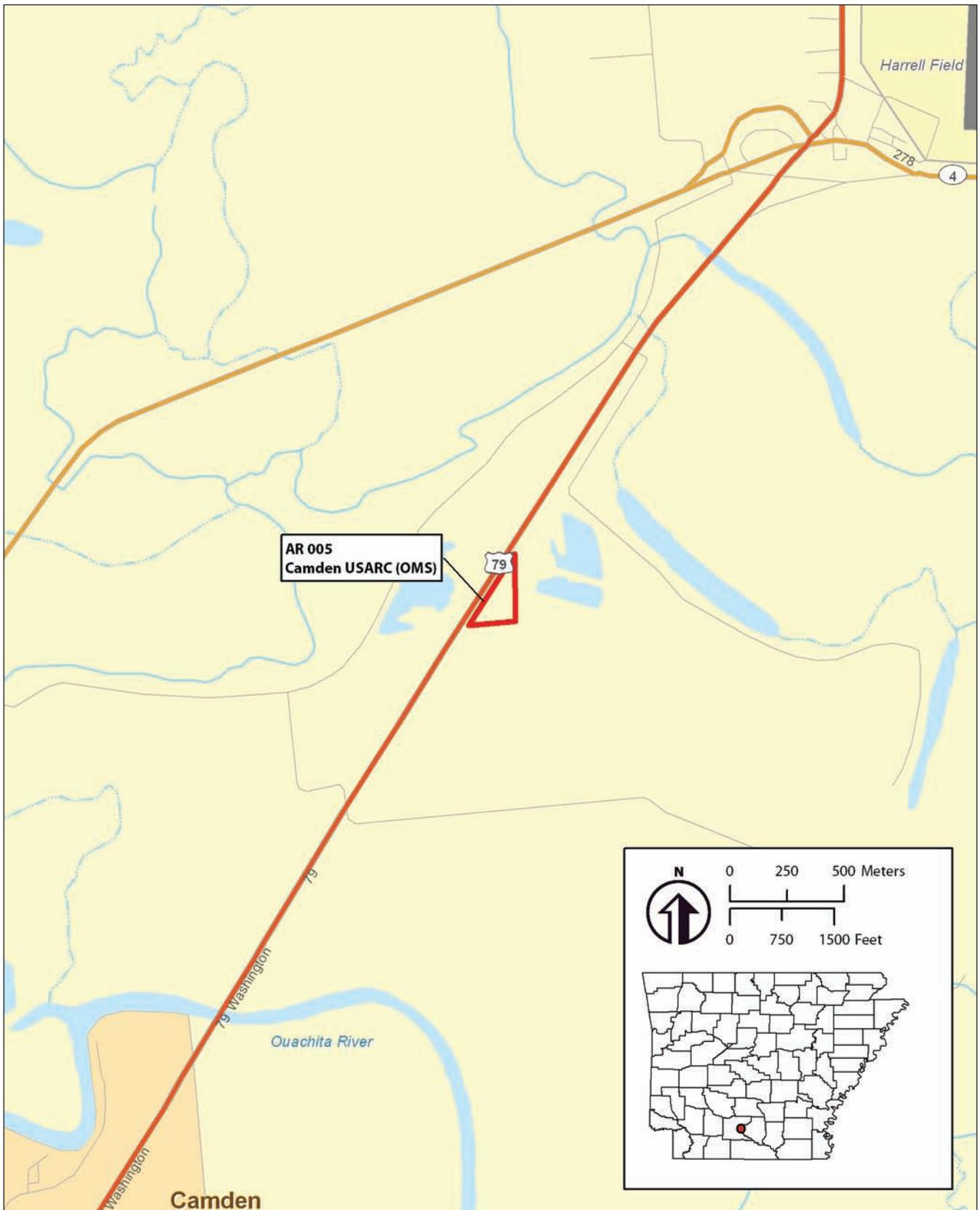


Figure 1.2 Location map of the US Army Reserve Center in Camden (Courtesy of the US Army Reserve).

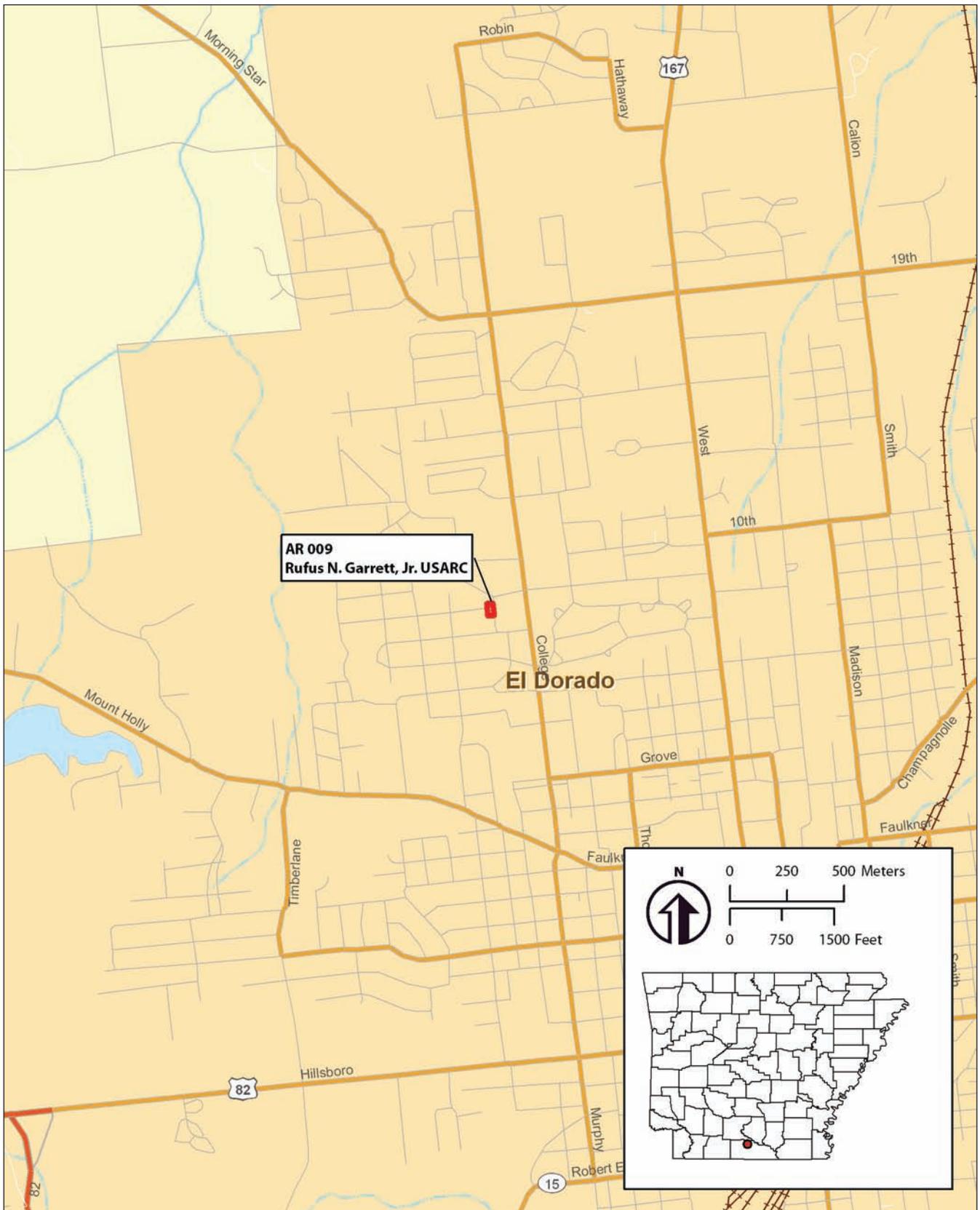


Figure 1.3 Location map of the Garrett US Army Reserve Center in El Dorado (Courtesy of the US Army Reserve).



Figure 1.4 Location map of the Stone US Army Reserve Center in Pine Bluff (Courtesy of the US Army Reserve).

Table 1.1 List of Buildings and Structures Surveyed on the three Arkansas USAR Centers

Facility ID	Facility Name and Location	Building Number	Building Type	NRHP Eligibility Recommendation
AR005	Camden	P1001	Main Admin and Train	Not Eligible
AR005	Camden	P1002	OMS Bldg	Not Eligible
AR009	El Dorado	P1001	Main Admin and Train	Not Eligible
AR009	El Dorado	P1002	OMS Bldg	Not Eligible
AR0031	Pine Bluff	P1001	Main Admin and Train	Not Eligible
AR0031	Pine Bluff	P1002	OMS Bldg	Not Eligible

1.2 EVALUATING HISTORIC RESOURCES: DETERMINING SIGNIFICANCE

The following are guidelines for determining whether a property is significant under the three criteria that usually apply to historic buildings and structures (adapted from NR Bulletin #16) (NPS 1991).

Event: Under Criterion A, the building or structure must be documented to have existed at the time of the event or pattern of events and to have been importantly associated with those events. The association must be conclusive and not tenuous and the documentation must be through accepted means of historical research.

It should be noted that a number of military installations are in some way or another are associated with important events in United States history. However these resources are only eligible for listing on the NRPH if they are deemed significant.

Person: Under Criterion B, a building or structure must be associated with a person’s productive life, reflecting the time when he or she achieved significance. Properties that pre- or post-date the individual’s significant accomplishments are usually not eligible unless there are no other properties that might qualify. The documentation must be through accepted means of historical research such as written or oral history. Properties associated with an important individual should be compared with other properties associated with the same individual to determine which best represent the person’s historic contributions.

Design/construction: Under Criterion C, properties are eligible for the NRHP if they are significant for their physical design or construction, including such elements as architecture, landscape architecture, engineering, and artwork. To qualify under this criterion, a property must satisfy at least one of the following: “Embody the distinctive characteristics of a type, period, or method of construction.” Under this requirement, the property must reflect the way it was conceived, designed, or fabricated by a people or culture in past periods of history. “Distinctive characteristics” are the physical features or traits that are repeatedly encountered in individual types, periods, or methods of construction. “Type, period, and methods of construction” refer to the way certain properties are related to one another by cultural tradition or function, by dates of construction or style, or by choice or availability of materials and technology.

“*Represent the work of a master.*” A master is an individual who is generally recognized as “great” in a field, a craftsman of consummate skill, or an anonymous craftsman whose work is distinguishable from others by its characteristic style and quality. The property must express a particular phase in the development of the master’s career, an aspect of his/her work, or a particular idea or theme in his/her craft.

“*Possess high artistic values.*” Under this requirement, a property is eligible if it articulates a particular concept of design such that it expresses an aesthetic ideal.

“Represent a significant and distinguishable entity whose components may lack individual distinction.”

This requirement refers to districts. A district may be composed of a variety of resources but derives its importance from constituting a unified entity. Its varied resources are consequently interrelated, conveying a visual sense of the overall historic environment or arrangement of historically or functionally related properties. As for individual buildings or structures, a district must be significant as well as identifiable and must be important for historical, architectural, archaeological, engineering, or cultural values. Districts will usually achieve significance under the last requirement of Criterion C plus Criterion A, B, additional portions of Criterion C, or D. A district may have both features that lack individual distinction and individually distinctive features that are focal points. None of the components may be distinctive provided that the grouping is significant as a whole within its historical context. Most of the components however, must have integrity, as well as the district as a whole. The district can also contain noncontributing elements, the number depending on how the noncontributing elements affect the integrity of the district as a whole.

Information potential: Under Criterion D, resources may be eligible for the National Register if they have yielded, or may be likely to yield, information important in prehistory or history. Although most often applied to archeological districts and sites, this criterion can also apply to buildings, structures, and objects that contain important information. For these types of properties to be eligible, they themselves must be, or must have been, the principal source of the important information.

As this criterion relates to military installations, both former and active installations may possess above or belowground resources which are likely to yield information relating to the installations history or any former activity or use of the site.

Exceptional Importance: Criteria Consideration G relates to properties achieving significance within the past 50 years and qualifies as eligible if it is of exceptional importance. Properties which have not reached 50 years of age are typically excluded from the National Register

because they have not developed sufficient time to accrue historical perspective.

Most permanent buildings associated with World War II and Cold War era construction were built during the initial years of military mobilization and during the initial years of war declaration. Therefore, most of these properties have reached the 50-year mark. However, other buildings constructed during the latter half of the Cold War have yet to reach 50 years of age and may be evaluated under Criteria Consideration G.

2.0 ARCHITECTURAL CONTEXT FOR THE US ARMY RESERVE

2.1 OVERVIEW

In preparing the following historical and architectural overview of the US Army Reserve the author consulted *Blueprints for the Citizen Soldier: A Nationwide Historic Context Study of United States Army Reserve Centers* (Moore and Payne 2008). That study provides a framework for evaluating the relative significance of Army Reserve Centers from a national perspective and provides the basis for assessing the eligibility of Army Reserve Centers for inclusion in the NRHP.

2.2 POSTWAR ARMY RESERVE FACILITY CONSTRUCTION

Immediately following World War II, the Army and the other military branches faced important decisions regarding reserve policy. Army mobilization plans, developed in 1946, outlined the size and scope of the postwar Organized Reserve Corps (ORC). To achieve the ambitious postwar troop strengths, the Army relied heavily on the assumed passage of universal military training (UMT) legislation. The reality of a large postwar reserve force necessitated Army planners to address the need for adequate reserve training facilities. While the National Guard provided armories for its units before World War II, ORC units did not have facilities set aside for their use. Thus, after the war, the Army ambitiously started its expanded reserve program without facilities to house training activities.

The Army initially looked to National Guard armories as potential sites for ORC training. However, the 1946 mobilization plans called for a large number of National Guard units as well, which limited the space available for ORC units. To solve the immediate training needs for its rapidly forming units, the ORC relied on the leasing of federal facilities or properties of the joint utilization of facilities with other military branches. In addition, the ORC also began efforts to persuade Congress to provide funding for the construction of temporary or, preferably, permanent facilities. Besides addressing immediate needs to provide training centers for these units, the Army, in partnership with the

National Guard began to redefine and design post war reserve training facilities, due to the belief that pre-war armory configuration would not suit a modern, post-war reserve force.

2.2.1 Federally Owned and Leased Facilities

To aid in the immediate need for training space, the Army provided the ORC with funds to procure suitable space through federally owned buildings and lease arrangements. As a result, the Army arranged training space in a variety of federal, state, and privately owned buildings, including post offices, Army camps and stations, and community centers. Army planners viewed the use of federal buildings and leases as a temporary measure rather than a permanent solution. By 1948, the ORC occupied five million square feet of federal and leased space, almost four million of which was in federal buildings. A year later, the amount of federal space had increased to eight million square feet.

The problems associated with lease arrangements and federal buildings quickly became apparent to the assigned units as well as Army planners. In reference to training, the leased and federal buildings were ill-suited for reserve demands. As one Army report stated, “leased facilities are generally improvisations which provide classroom and administrative space but are not entirely adequate for specific training and storage needs.” For example, facilities without storage space could not receive the necessary equipment training needed for full organizational status. In addition, some temporary training facilities that had equipment available to them were often located at a distance from their original equipment storage areas. Aggravating this issue was a change in Army policy shortly after World War II that limited the amount of funding available for expanding leased facilities, a development most likely related to the cost-cutting agendas of the President and Congress in post-war America.

In addition to training problems, federally owned buildings and lease arrangements were expensive and difficult to obtain. In some areas, rental costs prevented

the procurement of adequate space, as commercial competition greatly increased the price per square foot in the years following World War II. Despite the obvious shortcomings of leasing space and use of federal buildings, the Army continued the practice due to a lack of viable options. Army planners were well aware that such a course of action did not serve the long-term interests of the ORC. The problems associated with the lease arrangements, however, played an integral role in convincing Congress in 1950 to address the facilities problem for the Army's reserve forces.

2.2.2 *Joint Utilization*

In addition to leasing arrangements the Army relied heavily on joint utilization as a solution for reserve training space. Because the National Guard possessed armories built prior to World War II, the Army attempted to work out an arrangement that would allow the ORC units to drill at these existing facilities. Joint utilization offered several benefits: financial savings, cooperation between federal and state governments, and a reduction in the need for federally-leased buildings. In particular, the savings associated with joint utilization appealed to the military branches, as overall defense budgets decreased in the years immediately following World War II. The War Department issued a memo as early as July 1946 advocating the advantages of joint utilization of National Guard armories.

The Army's joint utilization efforts, however, achieved limited success in solving the facility shortage. The increased number of National Guard units in the postwar era strained the already limited supply of training spaces within the existing armories and left minimal amounts of space for ORC units. In addition, joint utilization required cooperation between the military branches, which often proved to be a challenge given that the branches had traditionally competed for War Department funds. Many Navy planners, for instance, viewed their facility program as only for naval training purposes; in fact, the Army eventually declined to share training space with the Navy because of the different training requirements between the two branches. Nevertheless, military reserve planners quickly realized that until all available armory space was economically and wisely allocated, Congress would

never provide funding for new, permanent construction of training facilities.

2.2.3 *Initial Efforts to Standardize Organized Reserve Corps*

The selection of the National Guard to oversee the development of standardized plans for training centers came as a result of past experience with armory construction prior to World War II. Because the ORC did not receive federal funding before World War II, the organization had no experience constructing facilities. In addition, the National Guard anticipated that new training facilities would be needed in the postwar era and prepared interim prerequisites for their construction as early as 1946. These guidelines included a statement recognizing the limited resources and funding available for the construction of training facilities.

In developing minimum standards for training facilities, the National Guard considered the changing needs of postwar units. In some cases, this provoked an internal debate over how facilities should adapt to different training needs. In response to preparations for an armory construction bill in 1947, Lieutenant General C.P. Hall, Director of Organization and Training for the National Guard Bureau, emphasized that modern armories would need to incorporate new training priorities distinct from previous examples.

Colonel Edward Geesen, Acting Chief of the National Guard Bureau, concurred with Lieutenant General Hall's assessment for the new armory designs. However, Geesen argued that "certain fundamental features" should be incorporated into new plans. For example, while a drill floor was not crucial, space should be provided for formations and roll call, assembly of equipment essential to drill, a miniature artillery range, and a sub-caliber small arms range. Colonel Geesen also stated that new armory facilities should incorporate classrooms, libraries, radio and telepathy rooms, fireproof storage vaults, supply rooms, and administrative space for instructors. The rising importance of classroom space over drill halls for reserve training emerged due to the growth of military technology during and following World War II. To adequately support active units in the postwar environment, reserve units needed training in multiple areas including communication and

mechanical repair. As a result, classroom space was vital to the success of reserve units.

To prepare the standardized drawings, the National Guard (representing the needs of the ORC) and the Corps of Engineers selected the Chicago architectural firm Skidmore, Owings and Merrill. The specifications, plans, and drawings were completed by January 1948 and included two different one-unit facilities (Models A & B), a 5-unit, and a 10-unit facility. The new designs included an assembly hall, office space, classrooms, library, locker rooms, storage space for equipment, and an area for weekly armory drills. Though the plans did not include hangars, shops, and other storage buildings, the board recommended that new facility sites include a minimum of 20 acres of outdoor training contiguous to the building.

In June 1948, an additional modified one-unit facility (Type D) was designed by the firm Bail, Horton & Associates and was intended as an interim solution for small communities. Drawings of the modified type provide a sense of the early stages of standardized drawings developed by the National Guard with the US Army Corps of Engineers (USACE). The design depicts a two-story, flat roof building with a central front door and cantilevered concrete slabs forming belt courses. Assuming a T-shaped plan, the building included a head house measuring 80 feet across by 26 feet deep, and a one-story rear protrusion measuring 32 feet across and 22 feet deep. The modified type was able to be converted to a two-unit facility with the addition of a duplicate administrative wing, which would result in an “H” type footprint.

Considering the established troop strengths and cost projected for training facilities, the Fenn Board (the committee charged with making recommendations for military reserve training programs) estimated the overall cost of construction to be \$944 million. With individual states’ financial contributions for armory construction totaling \$45 million, the remaining funds were seen as a federal responsibility. Indeed, the report cited that in the previous 30 years, states had spent over \$500 million for armory construction and facilities for the National Guard and ORC, with an additional \$25 million spent on support and maintenance. The board recommended that states provide 25 percent of funds with 75 percent

contributed by federal appropriations for new armory construction with the above fund.

2.2.4 Development of Standard Architectural Plans

To meet their need for numerous functional facilities quickly and efficiently, the Army Reserve commissioned standardized architectural plans, similar to those developed by the National Guard and USACE. The Army developed the standardized plans in advance of seeking funding for construction. This enabled them to present their plans in Congressional hearings as evidence that the proposed centers would be practical, economical, and attractive.

The Army needed to develop a standard plan not only to construct buildings, but also to promote the Defense Facilities Act of 1950 in Congress. In contrast to previous standard plans developed by the National Guard and USACE, the new plans would be more customized to meet the specific needs of the ORC— in terms of space, program, and function. USACE then contracted the New York City architectural firm of Reisner and Urbahn to create a new set of plans based on standard armory plans previously developed by the architectural firms Skidmore, Owings and Merrill and Bail, Horton and Associates for the National Guard. The newly adapted plans would be based on space criteria developed by the Committee on Facilities and Services’ Reserve Facilities Survey. Reisner and Urbahn were experienced in governmental construction and had a reputation for designing simple, modern buildings that minimized cost by using modern construction techniques and materials. Little is known about Reisner, but Max O. Urbahn (1912-1995) was a well-known and prolific architect who practiced from 1938 until 1978. Before forming Reisner and Urbahn in 1946, the German-born architect worked with the offices of John Russell Pope and Holabird and Root. Reisner and Urbahn’s early work designing resorts and schools gave them a reputation for master planning, which translated well into their design for Army Reserve Center campuses. Some of their most important commissions include the Vehicle Assembly Building and Launch Control complex at Cape Canaveral, a 42-story skyscraper located at 909 Third Avenue in Manhattan, and a number of public

schools in the New York City area, including the first using poured-in-place concrete construction.

Under their 1950 contract with USACE, Reisner and Urbahn completed a series of seven standard plans of varying sizes: a 10-unit plan, a 3-unit plan, two versions of a 4-unit plan, and two versions of a 5-unit plan. All plans called for concrete masonry unit (CMU) or block construction with brick veneer, pre-cast concrete sills and lintels, and a concrete foundation. Each plan separated classroom spaces and assembly spaces, with the classrooms arranged in a U-shaped plan that surrounded the assembly hall. The classroom wing would be either one- or two-story, depending on the capacity of building. The classrooms opened directly onto the central assembly space, which eliminated the need for halls and lowered construction costs. A partial basement under the classroom wing contained an indoor rifle range and possibly lockers, showers, and a boiler room. All classroom wings had flat roofs. The assembly hall included an open, double-height space constructed using a prefabricated steel truss, creating a low-pitched roofline. Clerestory windows opened onto the assembly hall and provided a natural source of lighting. Some larger versions included mezzanine space with additional classrooms or offices in the assembly wing. The firm also developed plans for an Operational Maintenance Shop (OMS), which was a separate, free standing building used for storage and repair of vehicles and other large equipment. In design, the OMS was very basic, with rolling overhead doors and a flat roof. Despite their variations, all sets of plans developed by Reisner and Urbahn featured a distinctive layout and configuration, which included a two-story central core and flanking classroom wings.

In promoting the Reisner and Urbahn designs to Congress, the Army Reserve frequently touted that their architectural style was influenced by the 1950s contemporary movement, and that their designs resembled prevailing trends in school design at that time. The choice of an architectural style influenced by Modernism was both practical and fashionable. Pressing manpower needs for national defense dictated that Army Reserve training centers needed to be constructed quickly and economically. At the same time, the appealing and approachable architectural style

used in the design of the centers enhanced recruiting efforts. The Army adopted the Modern architectural style as the solution to bringing together these various needs. By incorporating a few key character-defining architectural elements, they could reinterpret a purely utilitarian building into a symbol of American technological superiority.

Reisner and Urbahn's standard plans stripped down the influences of the 1950s American contemporary style architecture using only a few character defining elements. These included technologically advanced building materials, clear articulation of building tectonics, steel or reinforced concrete framing, asymmetrical massing of spaces, open floor plan, flat roofs, and smooth, unadorned exterior wall surfaces. Additionally, they used fenestration patterns that demonstrated to the viewer that the exterior wall is not load-bearing (such as horizontal ribbons of windows, corner windows, or large plate glass windows) and cantilevered eaves or balconies. Each of these elements visually expressed how new materials—such as steel framing and reinforced concrete construction—enabled the design of more open interior spaces and non-load bearing exterior façades.

Before World War II, buildings that represented the official face of the Army in a community continued to use a traditional, monumental architectural style. Even during the war, when materials were scarce and expedient construction was a top priority, the Army still on occasion constructed more stylish buildings rather than the relying strictly on utilitarian designs usually associated with temporary buildings of World War II. For example, housing in Virginia was constructed with red brick in a Colonial Revival style. Until the post-world War II era, the Colonial Revival style was considered to be the quintessentially American national style. It represented freedom in its association with the American Revolution and its derivation from classical Greek architecture, two themes associated with the birth of democracy. After World War II, though, critics protested that the style was too derivative of European architecture and out of touch with an era being defined by technology and industry.

A simplified utilitarian style influenced by 1950s contemporary architecture was accepted as efficient

and economical, but it was not universally perceived as appealing and approachable. In order to recruit and retain reservists, the Army needed to convince the American public that 1950s contemporary architecture truly represented American values and patriotism. Architects and critics frequently argued that society had moved into a rational, technologically advanced era that was best expressed by simple, efficient architecture. The Army grasped onto this argument and adopted the official position that unadorned architecture and modern construction materials projected an image of technical superiority over Cold War foes.

As a testament to the success of Reisner and Urbahn's 1950 design for standard plans, in 1952 USACE again contracted Reisner and Urbahn to develop revised standardized plans for Army Reserve Centers. The Army Reserve hoped that the revised plans would provide more classroom space and provide for easy expansion. The 1952 iteration of the standardized plans included three basic series:

- 400 Men, Expansible 400 to 600, 800 either with or without basement;
- 600 Men, Expansible 400 to 600, 1,000, either with or without basement; and
- 1,000 Men, Expansion 1,000 to 2,000, either with or without basement. (One unit is equivalent to 200 men).

These plans also included more corridor space for less awkward circulation, as well as a more pronounced and visible main public entry. A full-depth lobby off of the entry was planned, lit by a full-height, metal, door-transom-sidelight assembly. The roof truss for the open assembly space was modified to create a more flat profile. The largest series of plans used a concrete block CMU exterior rather than brick veneer. Reisner and Urbahn designed the plans so that the buildings could be expanded as needed by adding a new wing that would connect to the original classroom wing using a hyphen with a separate entry. Otherwise, though, the plans were very similar to the 1950 plans.

In 1953, USACE contracted Reisner and Urbahn to revise their standardized plans yet again. This round of revisions aimed to reduce the costs of the 400-600-

800 man series of plans by providing a portable rifle range rather than integrating a permanent range into the building, thereby eliminating the arms vault and reducing the size of assembly space. Additionally, the 1953-54 revisions provided for a small 200-man, or 1-unit, Army Reserve Center. In the 200-man version, assembly would take place in a multi-use classroom space, and one bay of the center could be used as a vehicle shop, if needed. Like the 1,000-man expansible center designed in 1952, the 200-man center would use a CMU exterior rather than brick veneer.

In 1956, the Army Reserve identified a need to revise the space criteria for Army Reserve Centers. In anticipation of these new space criteria, USACE again contracted Max O. Urbahn for architectural services for revised standard plans. By 1956, though, the firm Reisner and Urbahn had morphed into Urbahn, Brayton, and Burrows. Richard Mark Brayton and John Shoker Burrow both had worked with Reisner and Urbahn. The new firm continued to work on governmental projects— like Army Reserve Centers— that Reisner and Urbahn had designed, but they also included more elementary schools, recreational buildings, and homes in their practice.

The standardized plans of 1956 included a 100-man, or one-half unit, “pilot” model intended for small communities. The design used an asymmetrical T-plan. The front wing included a double-loaded corridor with classrooms and storage, while the rear wing housed the assembly hall. The main entrance opened onto the front wing, but the assembly hall was also accessible through a separate entrance in the hyphen connecting the front wing to the assembly wing.

In contrast to the tightly compacted plans that Reisner and Urbahn developed in 1950, the series of standard plans developed in 1952, 1953, and 1956 shared many common design concepts and physical characteristics. Since these designs featured a more irregular configuration, the sets of plans have been grouped within a single category known as the Sprawling Plan for the purposes of this report. Again, these designs are distinct and recognizable from those of different eras.

Soon after the 1956 generation of standard plans was completed, the Army began to reconsider whether

the space criteria guiding standard plans reflected the Army Reserve's needs. The first version of new space criteria went into effect 15 November 1957. Prescribed square footages were:

- 1-unit (Authorized strength between 55-100)-13,000 sq ft;
- 1-unit (over 100)-15,960 sq ft;
- 2-unit (200 man capacity/unit)-18,960 sq ft;
- 3-unit (200 man capacity/unit)-24,310 sq ft;
- 4-unit (200 man capacity/unit)-28,445 sq ft; and
- 5-unit (200 man capacity/unit)-36,795 sq ft.

However, because these criteria were based on space per man, and Army strength assignments were based on units rather than men, revisions and clarifications to the space criteria continued through 1958.

Debate about changes to the space criteria incited debate about the cost, function, and appearance of reserve centers. As a result, Urbahn, Brayton, and Burrows revised the 1956 standardized plans a number of times in response to comments from the Army Reserve. The design process was complicated by the fact that Department of Defense (DoD) and the Bureau of the Budget reviewed and approved revised standardized plans before they had concluded their debate about the revised space criteria. When DoD finally approved the revised space criteria in 1958, the latest version of the standardized plans were "considerably in excess" of the space criteria.

Although draft drawings were not archived, records of correspondence reveal issues that the Army Reserve sought to rectify in revisions to the 1956 plans. Recommendations given to the architect were lengthy and very specific. Direction regarding the architectural style of the exterior elevations was unequivocal.

To further achieve the desired exterior appearance, the Army required that parking be relocated to the rear of the building, where it would not be visible from the street, and that a shrubbery planning plan be included in the site plan. In later correspondence, the Army added, "Architectural appearance is too localized. While a degree of localization may be desirable, this should be minimized. A more conservative contemporary appearance would be acceptable." The Army even sent

its own architectural sketches to USACE to pass on to architect Max Urbahn.

Additional recommendations referred to the size of interior spaces and the proximity of space to one another within the building program. Comments regarding the floor plan recommended, among other things, locating the mechanical equipment room more centrally, locating all storage rooms on the first floor, locating the Unit Advisor's space adjacent to the main entrance, with the kitchen to the right of the Unit Advisor and the day room to the right of the kitchen, and locating the library adjacent to the Company Commander's space. Similarly, because only 22-caliber rifles would be used, the Army recommended that the length of the rifle range could be reduced from 83'4 to 50'0.

When the space criteria were finalized in 1958 even more changes were required in the standardized plans. The two most dramatic revisions were the inclusion of accordion partitions rather than permanent partition wall between classrooms in order to increase flexibility and allow conversion of assembly spaces in the smaller spaces, and the elimination of all basements to reduce costs and to make it easier to locate suitable construction sites. Much more detailed records regarding interior features also accompany the 1956 plans. For example, Army Reserve correspondence recommended that flooring be ceramic tile in the toilet and shower rooms, asphalt tile in the day room and corridors, and vinyl-asbestos tile in the kitchen and lobby. In addition, further specifications stated that interior walls should be painted exposed masonry walls in most spaces and that ceilings should be painted plaster except for the day room, which was to use acoustic tiles.

When releasing the revised plans, the Army Reserve also clarified how they were to be used by the local chapters, and how different regions could deviate from the standardized plans. In a statement before the House Subcommittee of the Committee on Appropriations on April 15, 1957, General Shuler, Chief, Construction Division Office, Deputy Chief of Staff for Logistics, explained:

The States are not required to adhere to these designs. However, the United States Government contributions to the states for Army NG facilities

are based on these approved space criteria and construction standards. Where the States exceed those standard designs, they pay 100 percent of the applicable costs.

Based on preliminary review of historic resources surveys conducted by regional Army Reserve offices, it seems that most of the facilities currently under the stewardship of the Army Reserve conform to the standard plans. It is reasonable to infer that unit commanders felt that the standardized plans functioned well for their needs and fit into their communities. If not, the shortcomings in the standardized plans, for the most part, appear to have been so minor that they did not justify the added design cost to the state or the Army Reserve.

2.2.5 *Deviations from Standard Architectural Plans*

If the regional head of the Army Reserve did not feel that the standard plans were appropriate for a specific project, the USACE could be directed to either develop an alternative in-house plan or commission a custom design. These alternative designs would then become part of the stock of plans available for regional command of the Army Reserve. The same budgetary constraints that applied to standard plans also applied to custom plans, so deviations from the standard plans were not practical in most situations. For example, in the 96th RRC, located in the mountain states, William J. Monroe, Jr. of Snedaker, Budd, & Monroe, Architects of Salt Lake City was commissioned to design an Army Reserve Center circa 1957. Monroe's plan was applied to Army Reserve Centers constructed in Ogden (1957), Provo (1957), and Moore (1958), Utah. The plan and style of the design of these facilities are very similar to the standard design; however, they have a two-story, T-plan with classrooms and offices across the front and an assembly wing at the rear.

A few rare examples of Army Reserve Centers were custom designed. These seem to occur primarily in large urban areas which another Army Reserve Center had already been constructed using the standardized design, or where construction fell under the purview of another agency because of joint utilization. For example, in 1957

the architectural firm of Smith and Hegner collaborated with USACE to design the Army Reserve Center on the Denver Federal Center campus in Denver, Colorado. Smith and Hegner was a local firm known for their International style design of private homes and civic and institutional buildings. The Denver Federal Center was located on land where a World War II-era ordnance plant once stood. Offices for numerous federal agencies were constructed on the property in the postwar era.

2.2.6 *Army Reserve Downsizing and BRAC*

By the end of the 1980s Congress began to question the generous funding that the Army Reserve had received through much of the twentieth century. Even when funding for the reserves had declined during the Vietnam War, the convenient and temporary shift away from emphasis on the reserve was perceived by many in the public and some in Congress as yet another example of preferential treatment for the reserves. As the Cold War came to an end, the need for military power seemed less urgent. The political power of the Reserve Officers Association (ROA) in Congress began to decline as World War II veterans began to retire from their positions of political influence. In 1988, Army leaders insisted that it could not withstand budget cuts and make necessary upgrades to equipment without cutting reserve forces. As a result, the Army Reserve decreased in size significantly in the years 1989-1997. The 20 Army Reserve Commands (ARCOM) were placed with 10 Regional Support Commands (RSC), and the Army Reserve decreased by about 114,000 men, or by 33 percent. (The total Army- including the active army, Army National Guard, Army Reserve, and civilian employees- decreased by 620,000 men.) However, the role of the Army Reserve within the Army's Total Force remained constant at about 16 percent. The downsizing tried to eliminate redundancies between capabilities of the active army and the reserves, leading to more integration in mobilization efforts. To this end, more officers from the active were assigned to lead reserve units.

The effort to reduce military spending addressed facilities as well as manpower. In 1988, the DoD initiated its program for Base Realignment and Closure (BRAC). BRAC aims to reduce costs of facility ownership and

operation by eliminating installations that are no longer relevant to the military's mission and that cannot grow or be adapted to accommodate the military's mission. These realignments and closures took place over four rounds- 1988, 1991, 1993, and 1995. Between 1988 and 1995, more than 112 installations were closed and 26 were realigned, costing \$5.6 billion but resulting in \$9.8 billion in savings. Yet Army Reserve facilities were affected only if they were affiliated with an active-duty installation targeted for closure, consolidation, or realignment.

In 2005, the fifth round of BRAC had a greater effect on Army Reserve facilities. Through this process, the RSCs became Regional Readiness Commands (RRCs). The same year, the Department of Army had more than 4,000 Reserve facilities within its inventory. BRAC 2005 emphasized increased joint operations between all branches of the military and sought to combine multiple components on one installation, such as combining reserves with active duty forces. The Army recommended closing 176 Army Reserve Facilities, to be replaced by 125 new Armed Forces Reserve Centers incorporating units from multiple branches of the military. Newly constructed Armed Forces Reserve Centers were constructed using design-build process overseen by USACE, following criteria recently updated in 2006 (UFC-7-171-05 Army Reserve Facilities). Under the design-build criteria, facilities were designed by individual contractors rather than using standard plans.

Despite ongoing debate about funding, the reserves have played important roles in recent international military conflicts. During the Gulf War in 1990-1991, more than 50 percent of combat forces for all branches of the Army were reservists, and about 104,000 reservists were called to active duty. More than 84,000 were Army Reservists. The Army Reserve was mobilized for missions in Somalia and Bosnia during the 1990s as well. To date, hundreds of thousands of Army Reservists have served in Operation Enduring Freedom in Afghanistan and Operation Iraqi Freedom in Iraq.

2.3 US ARMY RESERVE PROPERTY TYPES

By subdividing the Army Reserve's inventory of facilities into property type categories and describing the potential areas of significance for each category, it becomes easier to associate each individual resource with its potential area(s) of significance and assess its eligibility for inclusion in the NRHP. Buildings within the Army Reserve's inventory of pre-1970 facilities fall into the following primary property type categories:

- Militia-Era Armories prior to World War II,
- Type "D" Armories of the Immediate Postwar Era
- Army Reserve Centers of the Early Cold War:
 - Compact Plan Army Reserve Centers,
 - Sprawling Plan Army Reserve Centers, and
 - Vertical Plan Army Reserve Centers;
- Maintenance Shops and Support Structures; and
- Army Reserve Complexes.

These categories are based on shared physical characteristics and design qualities, as well as existing thoughts and political, economic, and military conditions about the role and function of the Reserves at the time of their construction. The standard architecture plans used to construct Army Reserve Centers of the Early Cold War Era may be further divided into three sub-types:

- Compact Plans (1950)
- Sprawling Plans (1952/1953/1956)
- Vertical Plans (1960)

Although variations in size and scale exist within each category, the subtypes are united by distinctive character-defining architectural features (massing, materials, layout, etc.). As defined by NPS Bulletin No. 16, all armories and Army Reserve Centers fall within the use type of "Defense" and the subtype of "Military Facility."

2.3.1 Army Reserve Centers as a Complex

An Army Reserve Center typically encompasses a relatively small tract of land ranging in size from three to five acres. Although settings vary by location and

range from densely populated urban centers to small cities in rural areas, an Army Reserve Center usually fronts onto a major roadway or public thoroughfare. The focal point and primary resource at any Army Reserve Center is the training section (Type D Armory, Compact Plan, Sprawling Plan, or Vertical Plan). The form of the training building depended on when the funding for its construction was appropriated and prevailing trends in the Army Reserves building program. As the most prominent and visible feature of the complex, the training building faces onto the public roadway. The grounds in front typically include minimal amounts of landscaping with well-kept grass lawns and small shrubbery along the base of the main building. A sidewalk extends from the street to the front entrance of the main building and provides public access into the compound. Another requisite element of an Army Reserve Center is a flagpole, which typically is in front of the building in a prominent and highly visible location on the grass lawn. Some Army Reserve Centers have freestanding signage noting the center's name and official designation. Except for the front lawn, which typically is open and accessible to the public, the compound is secured with fencing that extends along the perimeter of the property. A driveway extends to parking lots and service facilities (maintenance shops and other structures) located at the rear of the complex. The number, type, and location of the service facilities varied but addressed the specific needs and training missions of Reservists drilling at the Center.

2.3.2 Militia-Era Armories Prior to World War II
Resources in this property type category were constructed before the organization of the present Army Reserve program and originally were used by state militias or the National Guard. However, some armories subsequently have been acquired by the Army Reserve and today are included in the Army Reserve inventory. Although resources within this property type category date from the Colonial Era through the 1940s, the oldest examples in the Army Reserve's inventory date from the 1880s, and the majority date from 1880 to 1910. Examples of this property type include the Fort Douglas USARC in Salt Lake City, Utah; the USARC in Vancouver, Washington; and the Fort Missoula USARC in Missoula, Montana.

They typically are located in an urban setting—either a city or a town—and occupy a prominent, visible site. When available, a hilltop site often was selected. A site with surrounding land that could be used for exercises and drills was preferable. Armories included spaces for the storage of arms, for military drills and exercise, and, importantly, for socialization and organization.

From the Colonial Era through the early twentieth century, the plan and organization of spaces of armories varied with the size of the militia or National Guard unit and the architectural style. The militias and chapters of the National Guard that constructed armories often were elite social organizations, and, consequently, they often selected high architectural styles and a grand, monumental scale for the design of armories. Among the architectural styles commonly used for armories of the late nineteenth and early twentieth centuries include the Romanesque Revival, Renaissance Revival, or Classical Revival styles. Construction typically is load-bearing masonry, with brick or stone used as exterior materials. The buildings also often featured architectural details that enhanced the building's appearance of strength and security. Common elements included the use of rusticated stone masonry at the foundations, quoins, crenulations at the roof line, and heavy wrought iron hardware and fixtures.

2.3.3 Armories of the Immediate Post-World War II Era

The years immediately after World War II represented a transitional period in the development of the Army Reserve, as a wave of new training centers increasingly relied on the use of standardized plans. Nonetheless, the term "armory" continued to be used to describe buildings, even though their design, layout, and configuration shared more characteristics with modern Army Reserve Centers than with traditional armories. In 1948 the National Guard and the Army Reserve commissioned Skidmore, Owings, and Merrill to design a standard plan for armories, and in 1949 the USACE and the National Guard Bureau commissioned Bail, Horton, & Associates, Architects-Engineers to design a "Type D Armory" to house one unit of reservists. Note that the National Guard and ORC were considered one in the same at this time because it was assumed that Congress

would approve the merger of the two organizations. The plan of the armories of the immediate postwar period accommodated functions somewhat similar to the traditional armory, including an open double-height space for assembly, drills, and exercises. However, the armories also incorporated classroom spaces, which were not characteristic of the earlier armories. The inclusion of classrooms marked a dramatic departure in the type and level of training for Reserve personnel, which began to rely on new and more technologically advanced weapon and communications systems.

The design of armories of the immediate postwar era followed guidelines implemented in 1946 by the National Guard jointly with the Army Reserve. The guidelines focused on economizing materials and space. In 1947, the DoD's Committee on Facilities and Services compiled an official space scale of minimum and maximum armory requirements. The space requirements, referred to as NME Form 134, provided an official range of postwar space requirements for 1-, 2-, 3-, 4-, 5-, and 10-unit armories. NME Form 134 became critical in design planning efforts for training facilities. The space requirements included a drill hall, classrooms, and unit instructor offices. The 1948 one-unit armory was designed as a two-story, flat-roof building with a central front door and cantilevered concrete slabs forming belt courses. The footprint of the building was T-shaped, with the front room including a day room, lockers, and offices and the projecting rear wing housing the assembly hall. The modified type was able to be converted to a two-unit facility with the addition of a duplicate administrative wing, which would result in an "H" type footprint.

The footprint of the Type D Armory was a simple rectangle, with a double-height open assembly space at the center surrounded by single-story classroom spaces. The floor plan economized space to the highest degree possible by including no corridors; instead, the assembly space provided circulation, and each of the surrounding rooms opened onto the next. The setting for the building was not specified, although the presence of a double-height overhead door to allow vehicles to enter the assembly space suggests that the site would need to accommodate a parking lot. Construction for the majority of the building was concrete block with

concrete-slab floors, although the open assembly space made use of a prefabricated steel truss. The exterior of the building is clad in brick veneer. The Type D Armory does not overtly exemplify any architectural style, although it does exhibit some elements indicative of the Modern style, including the flat roof over the classroom wing, the unornamented exterior walls, and the cantilevered concrete canopy over the main entrance.

2.3.4 *Army Reserve Centers of the Early Cold War*

Congress finally began appropriating funds for the construction of permanent training centers for the Army Reserves in the early 1950s, as the outbreak of the Korean War and ongoing and simmering tensions between the United States and the Soviet Union accelerated. Army Reserve Centers were constructed by the U. S. Army for the specific purpose of training the federal Army Reservists, versus armories, which had been used to train National Guard units at the state level.

In addition, in this era the idea of what comprises an Army Reserve Center and the types of facilities within it began to evolve. The wave of Army Reserve Centers constructed during the early Cold War era supported functions such as administration, training, and storage. Whereas Armories of the prewar era typically included a single building, the typical Army Reserve Center of the 1950s included multiple facilities, such as an administration building, training building, OMS, area maintenance support activity shop (AMSA), garage, storage buildings and structures, sentry station or guard shed, fallout shelter, flag pole, and parking lot. Purpose-designed Army Reserve Centers date from 1950 to the present, although armories or other earlier buildings have been adapted for use as Army Reserve Centers. In order to be eligible for listing in the NRHP for its association with the historic context narrated in Chapter 3 of this document, an Army Reserve Center must have been designed using a standardized plan commissioned by the Army and must have been used by the Army Reserve.

Army Reserve Centers of the early years of the Cold War can be grouped into three subcategories, based on their date of construction and the standard architectural plans that they follow. For analysis, Army Reserve Center sub-types have been defined as:

- Compact Plan (1950);
- Sprawling Plan (1952/1953/1956); and
- Vertical Plan (1960).

All of these subtypes used standardized plans, utilitarian building and construction materials, and a simplified architectural style influenced by mid-century contemporary American architecture. Moreover, these subtypes accommodated the same types of programmatic functions, including an OMS, parking lot, open drill hall, classrooms, and often a rifle range and arms storage space. However, the property subtypes differ from one another in their building footprint, massing, and treatment of architectural details such as windows and doors. Despite their differences, which are explained in greater detail later in this chapter, Army Reserve Centers, classified within the broad property type category, share many character defining elements and attributes common among all three subtypes.

Although Army Reserve Centers were established in urban, suburban, and small town settings across the United States, most were built in areas with concentrated populations. From 1950 through 1958, Army Reserve Centers were more likely to be constructed in urban areas than in small towns, but beginning in 1959 a number of reserve centers were constructed in small towns to expand the Army Reserve Program and provide additional training facilities. Because ease of transportation was a priority in selecting sites for the centers, generally, they are located in urban or suburban areas, near major roadways, and accessible by public transportation. In some instances, Army Reserve Centers are located within a larger military installation.

The Army Reserve Center campus typically is arranged with the main administration or training building located toward the front of the lot and is visible from public streets or right-of-ways. Typically, the parking lot and auxiliary buildings or structures are located to the rear of the property, behind the main building. The compound usually encompasses enough land for a parking lot that could also be used for outdoor drills and exercises. From the early to mid 1950s, the grounds did not include landscaping, but beginning in 1956, the construction of any new Reserve Centers required the inclusion of landscaping and a paved

walkway in front of the reserve center. Such elements were retroactively applied to those Reserve Centers established from 1950 to 1956.

2.3.5 *Compact Plan (1950)*

The first set of standard plans for Army Reserve Centers of the early years of the Cold War was designed by architects Reisner and Urbahn in 1950 and is referred to as a “compact plan” because the building footprint is a tight rectangle, with interior spaces clustered together as tightly as possible, with hallways and any other spaces used for circulation kept to a strict minimum. The set of standardized plans developed in 1950 for this subtype included variations in size and scale to accommodate two-, three-, four-, and five-unit Army Reserve Centers. Although the physical appearance of Army Reserve Centers in this subcategory is simple and modest, the rectangular footprint is the signature characteristic of this design. Most versions are one story in height with a basement, but the largest five-unit version features a two-story design.

The interior spaces are organized so that a U-shaped classroom wing surrounds an open, double height assembly space. The roof form over the classroom wing is flat, but the assembly space has a low-pitched, front-gabled roof. As seen from the front, the building presents a box-like appearance with a flat roof. It features a concrete masonry structure that is faced with a brick veneer that gives the building a more refined and less utilitarian character. The main entry is inconspicuous, recessed, and offset. The high, open interior assembly space is supported by a prefabricated steel truss, which creates the low-pitched roof form over the assembly space. The classrooms open directly onto the assembly space that eliminates the need for a corridor and economizes the total square footage. An overhead rolling door opens from the assembly space onto the rear parking lot, so that vehicles may enter the building for training and drills. In smaller versions, the basement space is excavated only under the perimeter “ell,” but in larger versions, the basement extends beneath the entire “U-shaped classroom area. The basement provides space for such activities and functions as an indoor rifle range, arms vault, boiler room, and locker room. The standard design for a “Compact Plan” Army Reserve Center did

not include for the construction of an OMS or any other associated buildings or structures. Known examples of the Compact Plan subtype were constructed from 1950 through 1957, possibly continuing later. None of the centers studied in this report were built using this design.

2.3.6 *Sprawling Plan (1952/1953/1956)*

The next generation of standard plans developed for and implemented by the Army Reserves featured a more sprawling, asymmetrical T- or L-shaped footprint and an “expansible” design. Reisner and Urbahn first designed this new architectural form, dubbed the Sprawling Plan for this study, in 1952. However, the firm updated the plan in 1953. This new set of plans included variations for 400-, 600-, 800-, and 1,000-man Army Reserve Centers, all of which were expansible to accommodate more men if needed. In 1956, Urbahn, Brayton, and Burrows (the successor firm to Reisner and Urbahn) revised plans for this architectural form yet again. The 1956 version also included variations for much smaller Army Reserve Centers, including One-Unit (200-man) and One-Half-Unit (100-man) versions. Although these various forms, which were developed in 1952, 1953, and 1956, exhibit subtle differences that distinguish them from one another, they still retain the same basic and fundamental concepts of design, and are distinctive from Army Reserve Centers built before and afterward. For example, the character-defining features that separate the Sprawling Plan subtype from the earlier Compact Plan subtype include the asymmetrical building footprint and the “expansible” nature of the design.

In a similar spirit of flexibility, all size variations for the Sprawling Plan (100- to 1,000-man centers) were designed both with and without a basement, which enabled the elimination of a basement as necessary to reduce costs and/or adapt to existing conditions of the site of the proposed center. The asymmetrical T- or L-shaped building plan features a long rectangular classroom wing across the front and a double-height drill or assembly space at the rear, connected to the classroom wing by a single story architectural hyphen. This plan was deliberately designed to respond to the specific functional needs of an Army Reserve Center

by separating the assembly space from areas where arms and technological equipment was stored. This configuration enabled storage and classroom areas to be locked and secured in the evening while the assembly and other public spaces could be accessed through a rear entrance at the hyphen entrance for evening programs and community assemblies. The plan allowed for subsequent expansion by providing room for the construction of another semi-detached wing at the side, perpendicular to the original front wing, connected by a single-story hyphen.

All versions of the Sprawling Plan subtype featured load-bearing concrete-block construction, typically with brick-faced exterior walls; however, architectural plans allowed an option for exposed “masonry unit” walls. The front entrance of the Sprawling Plan is a prominent and highly visible architectural element that typically includes a full-height aluminum or steel door/sidelight/transom assembly. The roof form over the classroom wing and hyphen is flat, while the roof over the drill/assembly space has a very low pitch (lower than in the Compact Plan subtype). In some size versions, the front classroom wing is two-stories in height.

In all versions, the front wing includes an open lobby that stretches the full depth and height of the wing. Other interior spaces within this wing are organized along a central, double-loaded (doors opening from either side) corridor. This generous use of circulation space is a marked difference from the Compact Plan subtype. Interior spaces within the front wing include lockers, classrooms, offices, a dayroom, an arms vault, storage, a boiler room, a rifle range, and a library.

Another architectural feature utilized in some versions of the Sprawling Plan subtype is the use of “accordion” partition walls between interior spaces. These flexible partitions were collapsible to create large open spaces for specific needs or functions. In buildings that included a basement, only the area under the front classroom wing was executed. If possible, the lockers, indoor rifle range, and boiler room were located in the basement. The indoor rifle range in buildings without basements would be in enclosed room and lacked any window openings. The assembly/drill space featured clerestory windows and an overhead door to allow vehicular access into the building.

Based on a review of historic resource surveys conducted by the Army Reserve Regional Readiness Commands, the majority of Army Reserve Centers that meet the recommended 50-year age threshold for NRHP evaluation can be classified within the Sprawling Plan subtype category. Known examples were constructed from 1953 through 1964, possibly continuing later. Figure 2.1 shows a view of the Main Administrative and Training Building at the Stone Center at Pine Bluff built in 1959 using the Sprawling Design.

2.3.7 Vertical Plan (1962)

In 1962, the standard plans for Army Reserve Centers were redesigned again, this time by architect George Dahl. Because the most striking character-defining features of the 1962 plan are the thin vertical strips of windows and the exposed reinforced-concrete vertical columns, this subtype of Army Reserve Center is referred to as the Vertical Plan. Two size variations for the Vertical Plan were developed: One-Unit and Two-Unit Army Reserve Centers.

The Vertical Plan uses the contemporary style of architecture popular in the United States in the 1960s. The building's mass is broken and asymmetrical, and its footprint includes a series of overlapping rectangles. Each separate rectangular-shaped component has its own low-pitched roof structure. The building's two-story



Figure 2.1 View of the Main Administrative and Training Building at the Stone Center at Pine Bluff built in 1959 using the Sprawling Design.

central block is set back of the flanking wings. On the façades, the vertical structural elements are emphasized by exposed concrete columns along with narrow, vertical glass spandrels. On the interior, a central double-loaded corridor extends through the main central block and includes rooms for storage, a library, classrooms, and lockers. On one side of the central mass, a hyphen leads to a single-story wing that houses an indoor rifle range and arms storage space. On the other side, a hyphen leads to the two-story assembly/drill space. Clerestory windows open onto the assembly/drill space.

Few examples of the Vertical Plan Army Reserve Center subtype were found during review of historic resources surveys conducted for the Regional Readiness Commands. One notable example found is the MG Oliver Otis Howard USARC in Auburn, Maine. The

subtype appears to have been constructed throughout 1960s and possibly into 1970s, and updated surveys and inventories are necessary to uncover how many examples of this subtype are extant within the Army Reserve's facilities inventory. Figure 2.2 shows a view of the Garrett Main Administrative and Training Building in El Dorado built in 1961 using the Vertical Design.

2.3.8 Maintenance Shops

Maintenance shops are auxiliary buildings located to the rear of Army Reserve training centers that house large vehicles and machinery. Maintenance shops that serve only the on-site training center are known as OMS, while shops that serve multiple centers in the area are known as Area Maintenance Support Activity Facilities (AMSA). Sometimes maintenance shops were built at



Figure 2.2 View of the Garrett Main Administrative and Training Building in El Dorado built in 1961 using the Vertical Design.

the same time as the training center, but often they were built shortly afterward. Standard plans for maintenance shops were designed by Reisner and Urbahn in 1952, but it seems that many maintenance shops were built using a regional architect's plan rather than Reisner and Urbahn's standard plan.

The physical form of a maintenance shop is one-story in height, with a flat, shed, or low-pitched side-gabled roof form. The size of an OMS ranges from two bays wide to five bays wide. An AMSA may have more bays, and some bays may be double-height. Maintenance shops typically are constructed of concrete masonry, often veneered in brick. An overhead rolling door opens onto each bay. Many maintenance shops feature windows on the back façade to provide light and ventilation. Figure

2.3 shows a view of typical OMS Building at Camden US Army Reserve Center in Camden built in 1962.

2.3.9 Other Support Buildings and Structures

Other support buildings, structures, and sites related to historic-age Army Reserve Centers include garages, storage buildings and structures, sentry stations or guard sheds, fallout shelters, flag poles, and parking lots (see Figure 2.4). Like maintenance shops, resources within this property type category are support structures and are completely dependent upon the operation of the main training building.



Figure 2.3 View of typical OMS Building at Camden US Army Reserve Center in Camden built in 1962.



Figure 2.4 View of a small storage building acting as a hazardous materials storage building at the Camden US Army Reserve Center in Camden.

3.0 NRHP EVALUATION OF THE THREE USARC IN THE ARKANSAS STUDY AREA

3.1 OVERVIEW

This chapter presents architectural descriptions and NRHP evaluations for each of the buildings at each separate USARC visited for this survey. The survey consisted of pedestrian inspection of the interior and exterior of each architectural resource at each center. The project historian was not given interior access to some structures; these are specified at each applicable site. Each building was digitally photographed and notes were made as to the construction method, materials, alterations, additions, and character defining features. The identifying building names were obtained from the centers at the time of the inspection. All of the buildings at each facility have been assigned a facility building number that identifies it as the official military building address. Each facility is individually discussed below.

The facilities at Pine Bluff and El Dorado had similar interiors, consistent with either the Urbahn Sprawling or Dahl Vertical plans. The third Main Administration and Training building at Camden was torn down (due to asbestos insulation) and replaced with a metal building in 2002 and was not consistent with any of the plans for US Army Reserve Centers designed in the 1950s or 1960s. The two facilities at Pine Bluff and El Dorado each had a main entrance with two sets of single-hung double doors. The first set gave entrance into a small space that opened up through a second set of double doors into a vestibule or open area. Located in the vestibule were bulletin boards displaying general and historic information relevant to the center; dedication plaques were traditionally located here. All three centers had a bronze US Army Reserve monument on the walls. Figures 3.1 and 3.2 show views of a typical vestibule with the center dedication information.

The vestibule opened up into the main facility and usually onto a main corridor, often perpendicular to the entranceway. Each corridor spanned the length of the facility with administration, mechanical, armory and class and storage rooms opening on either side of the corridor. In larger facilities, there was more than one corridor. Figures 3.3 and 3.4 show views of corridors and room entrances. Both Pine Bluff and El Dorado had

an architectural hyphen which linked the main wing of a center with the Assembly Hall. These hyphens always consisted of at least an enclosed corridor and usually additional rooms on one or both sides of the corridor. Figure 3.5 shows a view of a typical architectural hyphen at the Stone USAR Center at Pine Bluff. This one is located at the center of the photograph behind the third truck. It links the assembly hall on the right with the main part of the building on the left at Stone Pine Bluff Center.

The OMS Buildings at all three facilities were similar in design, size, and construction materials. The overhead doors opened into a large open room with security and storage racks located along the walls. Additional storage, office, or class rooms were usually located inside along walls. In a few instances extra rooms were later added to the original structure. Additionally, nearly every OMS Building had a hazardous materials room with no interior door. This room was accessed only from the exterior of the building. Figures 3.6 and 3.7 show typical interiors of OMS Buildings.



Figure 3.1 View of a typical USARC vestibule and double entry doors at the Garrett USARC at El Dorado.

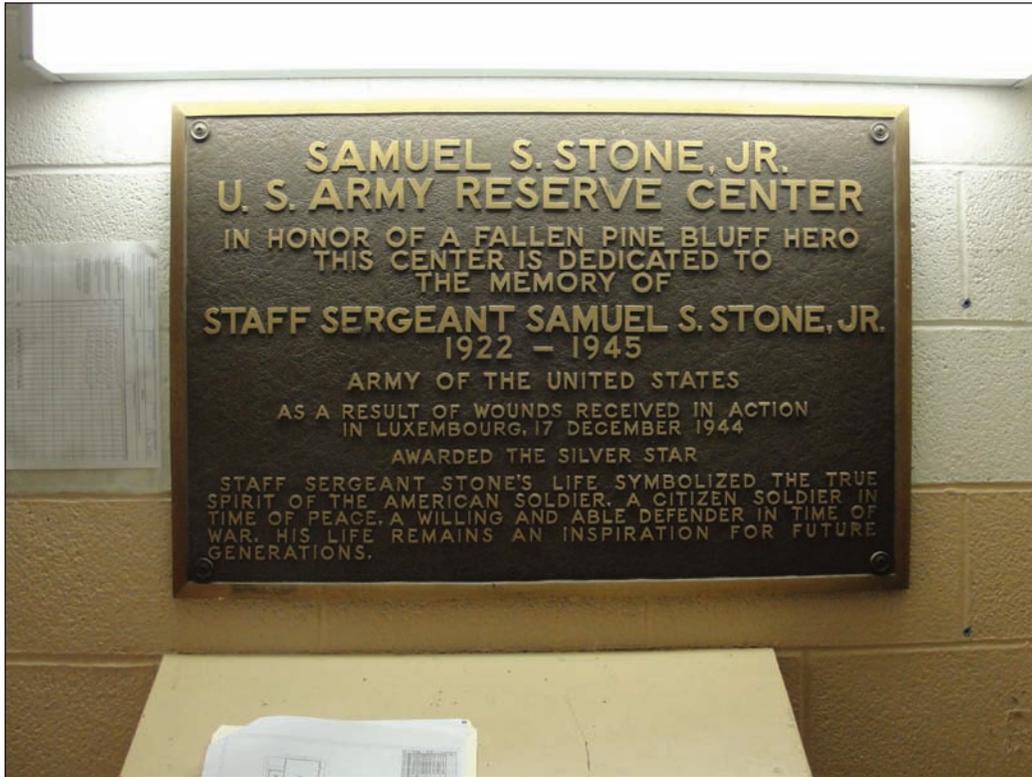


Figure 3.2 View of the dedication plat at the Stone USARC in Pine Bluff.



Figure 3.3 View of a typical room entrance off the main corridor at the Stone Pine Bluff USARC.

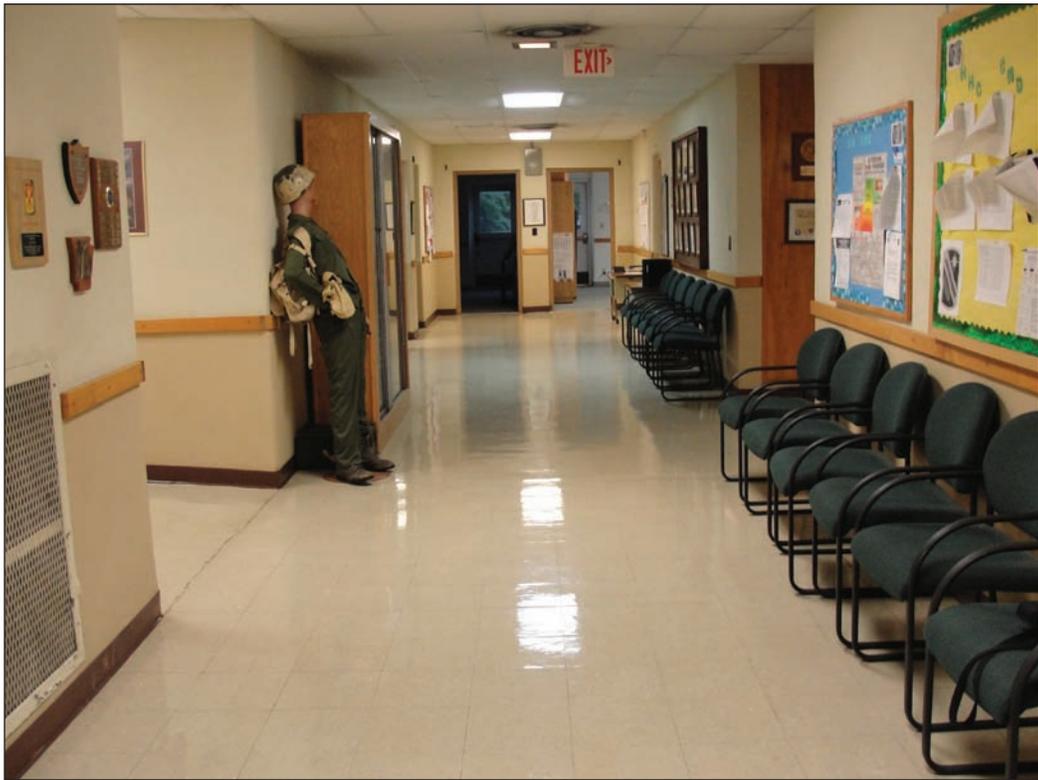


Figure 3.4 View of the main corridor at the Garrett El Dorado USARC.



Figure 3.5 View of a typical architectural hyphen used in both the Sprawling and Vertical plans for USAR Centers.



Figure 3.6 View of a typical open area inside the OMS Building at Camden USARC.



Figure 3.7 View of the OMS Building at Garrett, now used as an active storage unit for the facility.

3.2 CAMDEN US ARMY RESERVE CENTER, CAMDEN ARKANSAS (AK005)

The Camden USARC is on Highway 79 North in Camden, Arkansas. The property consists of two buildings on approximately 2.96 acres. At present, the center is home to the 360th Chemical Company. The center is named for the town in which it is located. The main administrative and training building was built in 2002 when the original building was taken down due to asbestos contamination. The OMS building was built in 1962. A perimeter chain link fence surrounds the facility on all sides with the main entrance to the facility on the west side facing Highway 79 North. Figure 3.8 shows a schematic drawing of the facility.

3.2.1 *Camden Main Administration and Training Building (P1001)*

The Camden Main Administration and Training Building (P1001), is located on US Highway 79 North facing south. The current building was erected after the original Main Administration and Training Building was removed in 2002 due to asbestos contamination. The current building is a single-story, contemporary style metal structure with a central hall and office and storage rooms.

Building P1001 is constructed with a reinforced-concrete slab, CMU wall construction, metal exterior siding, with prefabricated main steel supports. It has a single gabled metal roof supported with a prefabricated steel truss system. The building has two covered entrances: the main entrance on the south façade and a side entrance on the east façade. It also has a third uncovered entrance on the west façade. The south façade entrance opens into the main assembly hall room that is also used as a classroom and mess hall. A small corridor on the east side of the building leads to the office and storage areas. Concrete sidewalks connect the entrances to the parking areas, equipment storage areas, and the OMS building located to the southeast. Figures 3.9-3.10 show views of P1001.

Northeast of P1001 is a small storage structure. The building is about six feet high with CMU construction, a poured concrete roof, and a metal door. It lacks electrical power and is not officially designated as a structure at

this facility. Although the building shows signs of age, apparently it has always been considered a temporary structure and is not assessed by this report. Figure 3.11 shows a view of this storage building.

Both Building P1001 and the small storage structure lack significant historical associations, do not meet the 50-year age requirement outlined by the NRHP, and do not possess significant architectural qualities to meet National Register Criteria. We recommend the Camden Main Building (P1001) to be not eligible for the NRHP.



Figure 3.9 The south and east façades of The Camden Main Administration and Training Building (P1001) at the Camden USAR Center.



Figure 3.10 View of the north and west façades of The Camden Main Administration and Training Building (P1001) at the Camden USAR Center.



Figure 3.11 View looking east of the small storage structure at the Camden USAR Center.

3.2.2 Operations Maintenance Support building (P1002)

The OMS Building (P1002) is a one and one-half story structure located southeast of P1001 (see Figure 3.8). The OMS/AMSA building was built in 1962 with a reinforced-concrete slab foundation and CMU construction sheathed on three sides by brick veneer, with the south side lacking the brick veneer (Parsons 2008:15). It has a steel-trussed supported metal roof with a layer of asphalt coating on top. The building has a single-overhead bay door opening on the west side and fronting the parking area. The overhead door opens into a large open area surrounded with offices, restroom and storage room on the north side. A single door also opens to the exterior from the office space on the west façade and another single door opens to the exterior from the

open area on the south façade of the building. There is only one window in the building on the north façade. Figures 3.12-3.13 show views of P1002.

The building lacks significant historical associations and does not qualify in age for the NRHP. We recommend building P1002 at Camden USARC not eligible for the NRHP. Therefore, we recommend the Grimes US Army Reserve Center facility not eligible for the NRHP.



Figure 3.12 The west and north façades of the OMS Building (P1002) at Camden USARC.



Figure 3.13 Views of east and south façades of the OMS Building (P1002). Note the covered wash area on the left side of the photograph.

3.3 RUFUS N. GARRETT, JR. US ARMY RESERVE CENTER, EL DORADO, ARKANSAS (AR009)

The Rufus N. Garrett US Army Center is located at 815 West 8th Street in El Dorado, Arkansas. The property consists of two buildings on approximately 3.0 acres of land. At present, Garrett USARC is home to A Company, 321st Sustainment Brigade. The center is named for 1st Lieutenant Rufus N. Garrett, Jr., who was awarded the Distinguished Service Cross for actions in Normandy, France in June 1944. He was killed in action June 11, 1944. The center was dedicated to him in 1962.

A Company took an active role in the First Gulf War (1990-1991) and has received a number of awards for their involvement in that conflict. Several battle tokens from the war were on display in the cabinets of the facility, and a Russian-made Anti-Aircraft Gun captured from Iraqi forces during the fighting is on display at the front of the facility. Along with the gun is a memorial to all the members of the unit who took part in the campaign. Figure 3.14 shows a schematic drawing of the facility.

3.3.1 *Garrett Main Administration and Training Building (P1001)*

The Garrett Main Administration and Training Building (P1001) is located at 815 West 8th Street in El Dorado. Completed in 1962, the building was dedicated that same year to Lt. Garrett (Parsons 1998:22). It is oriented in a north-south direction with the main entrance facing north on West 8th Street. It was constructed using the Vertical Plan for Army Reserve Centers. It continues to serve as the administration and classroom facility at the center. The single-story building has a reinforced poured-concrete foundation, CMU block construction, a prefabricated steel-trussed gabled roof, and a brick veneer façade. The offset covered front entrance has a set of double-loaded metal entrance doors. Decorative concrete panels are located above and below each window, and the double door entranceway has sidelights, an overhead transom and is flanked by similar panels. The main building has windows only on the north and east façades. Double door entrances are located on the east and west façades of the building and a third pair of doors give access to the mechanical room of the facility on the south façade. The main entranceway gives way

to the vestibule and a main east-west corridor on which offices and class rooms open. At the west end of the building is a large classroom that has been subdivided into two separate rooms.

An enlarged hyphen connects the main part of Building P1001 to the assembly hall to the south. The hyphen was enlarged in 1976, at which time a kitchen, food preparation, storage and scullery rooms were added. Other minor changes may also have occurred at a later date and the windows on the front portion of the main building appear to have been replaced in more recent years.

The assembly hall at the south end of the hyphen is a one and one-half story structure attached via the hyphen corridor to the main wing. This room appears to have been substantially altered with an addition to the west and the south that added additional rooms to the main hall. The overhead doors giving vehicular access to the large open area have been sealed up with concrete paving stones thus altering the look of the eastern façade. The assembly hall may have had a set of clerestory windows on the western façade at one time, but they were obscured from view by the larger addition. Three single doorways open to the outside from various points in the assembly hall on the east façade. No other exit points were observable from the assembly hall. Sidewalks and a large paved area connect the various doors and exit points to the OMS Building located to the south.

Inside the assembly hall, the main hall was surrounded with offices, storage room and administration and class rooms. The main hall appears to have been reduced in size and altered for classroom use with collapsible room dividers and false walls separating it into smaller spaces. Figures 3.15-3.18 show views of the Garrett Main Administration and Training Building.

Garrett US Army Reserve Center has no significant historical associations and has been substantially altered. The assembly hall addition, the hyphen addition, and the permanent closure of the overhead bay doors constitute changes that compromise the architectural integrity of the building. Finally, the building does not meet the 50-year age consideration outlined by the NRHP. Therefore, we recommend that P1001 is not eligible for the NRHP.



Figure 3.15 View of the north façade and the front entranceway into the Garrett US Army Center at El Dorado.



Figure 3.16 View of the east façade of the Garrett US Army Center at El Dorado.



Figure 3.17 View of the south and east façades of the Garrett US Army Reserve Center at El Dorado.



Figure 3.18 View of the west façade of the Garrett US Army Reserve Center at El Dorado.

3.3.2 *The Garrett Operations Maintenance Support Building (P1002)*

The OMS building (Building P1002) is located southeast of Building P1001 (See Figure 3.14). Constructed in 1962, the building is a typical one- and one-half-story structure built on a poured concrete foundation, with CMU walls, a veneered red brick façade, and a prefabricated, steel truss supported metal-gabled roof. The west façade originally contained the maintenance overhead bay doors; however, they have been sealed up and the doorway converted into a set of double metal doors. A CMU addition has been attached to the south façade of the building. Windows on the north and west façade have security bars. Additional entrances to the building are on the north and south façades. Additionally a second exterior door on the north façade

gives entrance to a hazardous materials storage area. The interior of the building has been completely converted into a storage area. Figures 3.19 and 3.20 show views of Building P1002.

Categorized as a functional support building for the facility, the OMS building was constructed for vehicle repair however; it now serves as storage (Bastien, personal communication 2010). This building was not constructed to function for a specific mission, nor does it represent any type of notable architectural construction or design. It does not retain architectural integrity to the original Vertical Plan. Additionally, it does not meet the 50-year age consideration outlined by the NRHP. We recommend this building not eligible



Figure 3.19 View of the west and south façades of the OMS Building at Garrett US Army Reserve Center.



Figure 3.20 View of the east and north façades of the OMS Building at Garrett US Army Reserve Center.

for the NRHP. Therefore, we recommend the Rufus N. Garrett US Army Reserve Center at El Dorado not eligible for the NRHP.

3.4 SAMUEL S. STONE, JR. US ARMY RESERVE CENTER, PINE BLUFF, ARKANSAS (AR031)

The Stone US Army Reserve Center is located at 1000 North Myrtle St. in Pine Bluff, Arkansas. The property consists of two buildings on approximately 1.5 acres. The third platoon, 383rd Engineering Company is currently stationed at the center. The center was named for Staff Sergeant Samuel S. Stone, Jr. who was awarded the Silver Star for conspicuous valor during the Battle of the Bulge in Europe during World War II. Sergeant Stone died of wounds received in action on December 17, 1944, in Luxembourg. The center was dedicated to Stone in 1959. Also, in the vestibule was a memorial to a member of the 299th Engineering Company, Sergeant Elga L. Roberts, who was killed in the fighting in Iraq, April 19, 1991. A schematic site plan of this building is shown in Figure 3.21.

3.4.1 *Stone US Army Reserve Center Main Administrative and Training Building (P1001)*

The Stone US Army Reserve Center Main Administrative and Training Building (P1001) was constructed in 1959 in the Urbahn Sprawling Plan (Parsons 1998:51). It is oriented in a north-south axis with the front facing south on Myrtle Street. The one-story building maintains a reinforced poured-concrete foundation, CMU wall construction, and a prefabricated steel truss supported flat roof. The entire building is sheathed in red brick laid in a running bond pattern. Double-paned windows stretch across the front and most of the back with two sets of eight windows on the eastern façade. The building features a recessed, offset, main entranceway with a pair of double-hung metal doors and a set of double-hung wooden doors giving primary access to the building. A pair of double doors gives entrance to the facility on the west façade and a single metal door is on the north façade at the southwest. An additional set of double metal doors gives access to the hyphen corridor.

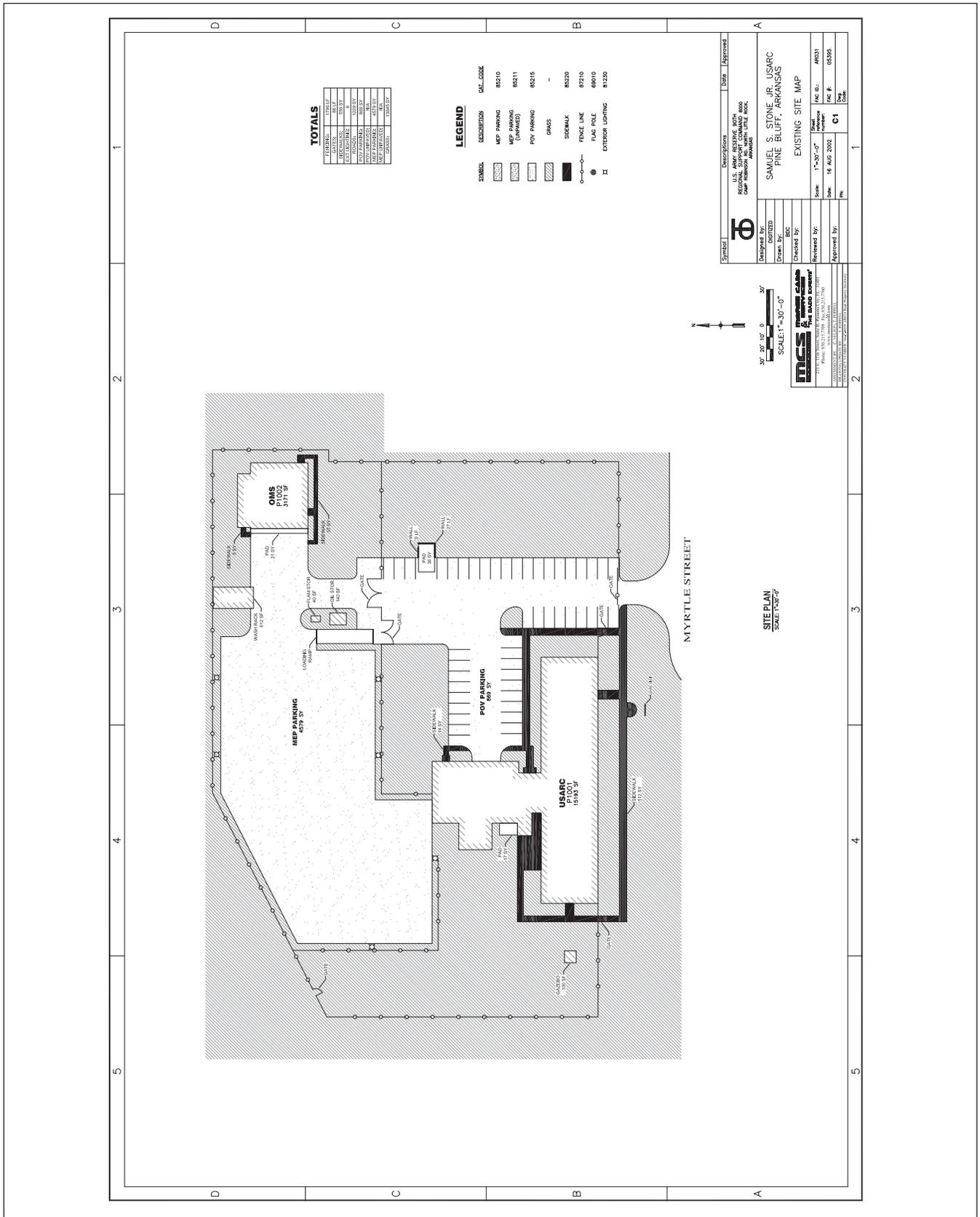
The vestibule opens onto a corridor that runs westward the full length of the building with offices, storage rooms and class rooms opening onto both sides of the corridor. A large classroom is located at the far east end that can be converted into two rooms via as

set of collapsible accordion walls. The western third of the building was added in an expansion of the facility in the 1970s (Price 2010). The windows were replaced in the 1990s and the asbestos removed in 1993 (Price 2010; Parsons 1998:51).

Midway down the corridor a perpendicular corridor leads north through the hyphen into the assembly hall. The hyphen contains the pantry, food preparation and scullery rooms that were added in the 1990s. A set of double-hung metal doors complete with sidelights and a transom gives access to the corridor on the east façade.

The hyphen leads to the assembly hall. The hall is a large open room with an overhead door giving vehicular access on the east side. On the east and west façades clerestory windows provide natural light to the inside. One additional metal door gives access to the building from the east façade. A brick addition was attached to the west façade to provide additional storage space in the 1990s at the same time as the addition to the hyphen. Figures 3.22-3.25 show views of P1001.

Stone Center P1001 has no significant historical associations and due to significant changes to the exterior does not possess architectural integrity to its original Sprawling design. Therefore, we recommend it not eligible for the NRHP.



TOTALS

PERMITS:	1000 SF
ASPHALT:	500 SF
CONCRETE:	100 SF
EXTERIOR LIGHTING:	50 SF
LANDSCAPE:	100 SF
PAVING:	100 SF
POV PARKING:	200 SF
MEP PARKING:	4278 SF
MEP IMPROVEMENTS:	100 SF
MEP UTILITIES:	100 SF
LANDSCAPE:	100 SF

LEGEND

SYMBOL	DESCRIPTION	SCALE CODE
[Symbol]	MEP PARKING	85210
[Symbol]	MEP PARKING (IMPAVED)	85211
[Symbol]	POV PARKING	85215
[Symbol]	GRASS	-
[Symbol]	SIDEWALK	85230
[Symbol]	FENCE LINE	8710
[Symbol]	FLAG POLE	6910
[Symbol]	EXTERNAL LIGHTING	81330

Symbol Description Date Approved

U.S. ARMY RESERVE CENTER COMMAND CAMP HEADQUARTERS SITE PLAN

Drawn By: [Name] **Checked By:** [Name]

Scale: 1"=30'-0" **Date:** 16 AUG 2002 **Sheet Number:** #0311

Project: SAMUEL S. STONE US ARMY RESERVE CENTER, PINE BLUFF, ARKANSAS **Project Number:** #0395

Scale: 1"=30'-0" **Date:** 16 AUG 2002 **Sheet Number:** #0311

Project: SAMUEL S. STONE US ARMY RESERVE CENTER, PINE BLUFF, ARKANSAS **Project Number:** #0395

Scale: 1"=30'-0" **Date:** 16 AUG 2002 **Sheet Number:** #0311

Project: SAMUEL S. STONE US ARMY RESERVE CENTER, PINE BLUFF, ARKANSAS **Project Number:** #0395

Figure 3.21 Schematic drawing site plan for the Stone US Army Reserve Center in Pine Bluff, Arkansas.



Figure 3.22 View of the south (front) and part of the east façade of the Stone US Army Reserve Center Main Administrative and Training Building (P1001).



Figure 3.23 View of the east and part of the south façade of the Stone US Army Reserve Center Main Administrative and Training Building (P1001).



Figure 3.24 View of the west façade of the Stone US Army Reserve Center Main Administrative and Training Building (P1001).



Figure 3.25 View of the north and part of the east façade of the Stone US Army Reserve Center Main Administrative and Training Building (P1001).

3.4.2 Stone Operations Maintenance Shop (P1002)

The Stone US Army Reserve OMS Building (P1002) is located northeast of building P1001 (See Figure 3.21). Constructed in 1959, it was built at the same time as P1001 as part of the original facilities construction. This one- and one-half-story building has a reinforced poured-concrete floor, CMU wall construction, a steel trussed gable roof construction and a brick veneer exterior. Two overhead door bays open on to the west façade. The doors open onto a large open work area that has tool storage rooms along the eastern wall. A small additional room was attached to the northern façade that contains storage, parts, rest rooms and a small office. Single metal doors open to the exterior on the southern and western façades and a door opens from the exterior

to the hazardous material room in the southeast corner of the building. The structure has no windows. Figures 3.26-3.27 show views of P1002.

Categorized as a functional support building for the facility, the OMS building was constructed for vehicle repair and maintenance and still serves this purpose. This building was not constructed to function for a specific mission, nor does it represent any type of notable architectural construction or design. It does not possess exceptional significant historical association and does not possess design qualities to meet any National Register Criteria. We recommend this structure not eligible for the NRHP. Therefore, we recommend the Stone US Army Reserve Center not eligible for the NRHP.



Figure 3.26 View of the west and south façades of the Stone US Army Reserve OMS Building (P1002).



Figure 3.27 View of the east façade of the Stone US Army Reserve OMS Building (P1002).

3.5 SUMMARY AND RECOMMENDATIONS

The 2005 Base Realignment and Closure Commission selected these three US Army Reserve Centers for closure. As part of the BRAC documentation for the 63d Regional Support Command, Brockington and Associates, Inc., conducted a site inspection of all three facilities in the state of Arkansas. This evaluation and documentation effort was completed in compliance with Section 106 of the NHPA. All the buildings surveyed were all evaluated according to NRHP criteria. A full listing and summary is found in Table 1.1.

We assessed all three facilities surveyed for this report not eligible for the NRHP. These facilities possess many architectural elements of the Urbahn Sprawling or Dahl

Vertical design. However, the resources lack significant historical associations and architectural integrity or fail to comply with the 50-year age consideration outlined by the NRHP. Thus we recommended the Camden USARC (AK005) in Camden, the Garrett USARC in El Dorado (AK009), and the Stone USARC in Pine Bluff (AK031) not eligible for the NRHP.

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5/620



DEPARTMENT OF THE ARMY
HEADQUARTERS, UNITED STATES ARMY 63d REGIONAL SUPPORT COMMAND
P.O. Box 63
MOFFETT FIELD, CALIFORNIA 94035-1000

76429
USA

April 4, 2011

Reply to the Attention of the Environmental Office

Ms. Cathie Matthews, SHPO
Department of Arkansas Heritage
323 Center Street
Suite 1500
Little Rock, AR 72201

AHPP
APR 10 2011

AHPP
APR 11 2011

Dear Ms. Matthews:

In accordance with 36 CFR Part 800 and Army Regulation 200-1, the 63d Regional Support Command (RSC), US Army Reserve (USAR) is requesting written comments and concurrence from the Department of Arkansas Heritage Commission on the action described herein. Under the 2005 Base Realignment and Closure (BRAC) legislation, the 63d RSC must transfer out of Federal ownership several Department of the Army properties. The 63d RSC completed architectural surveys of several buildings at multiple facilities and made the determination of eligibility for listing on the National Register of Historic Places (NRHP) for each.

The Camden USAR Center is located at 2185 Hwy 79 N., E. Camden, Arkansas. The facility is on 4.86 acres of land with two permanent structures: a 3,558-square-foot Training Building and the 2,063-square-foot organizational maintenance shop (OMS). Approximately one quarter of the Site is considered impervious (asphalt parking areas, driveways, concrete walkways, building footprints, etc.), while the remainder is covered by lawn. An archaeological assessment was completed in February 1997 by Parsons Engineering Science, Inc. The facility parcel was assessed as having low archaeological sensitivity and too little potential to warrant further archaeological investigation, and the Arkansas Heritage Commission concurred with this recommendation in a letter dated August 25, 1997.

The Rufus N. Garrett, Jr. USAR Center is located at 815 West 8Th Street, El Dorado, Arkansas. The facility is located on 2.83 acres of land with two permanent structures: a 14,400-square-foot Training Building and a 1,455-square-foot Storage Building. Both buildings were constructed in 1961 of concrete block with brick veneer on a concrete slab. The present-day Storage Building was originally constructed for use as an OMS. Approximately one-third of the Site is considered impervious (asphalt parking areas, driveways, concrete walkways, building footprints, etc.) while the remainder is covered by lawn. An archaeological assessment was completed in February 1997 by Parsons Engineering Science, Inc. The facility parcel was assessed as having low archaeological sensitivity and too little potential to warrant further archaeological investigation, and the Arkansas Heritage Commission concurred with this recommendation in a letter dated August 25, 1997.

The Samuel Stone Jr. USAR Center is located at 1000 N. Myrtle Street, Pine Bluff, Arkansas. The facility is on 4.85 acres of land with two permanent structures: a 15,193-square-foot Administrative Building and a 3,171-square-foot organizational maintenance shop (OMS). Both buildings were constructed in 1959 of concrete block with brick veneer on a concrete slab. Approximately one-third of the Site is considered impervious (asphalt parking areas, driveways, concrete walkways, building footprints, etc.)

Date: 5/18/11
No known historic properties will be affected by this undertaking. This effect determination could change should new information come to light.

Frances McSwain
Frances McSwain, Deputy State
Historic Preservation Officer

while the remainder is covered by lawn. An archaeological assessment was completed in February 1997 by Parsons Engineering Science, Inc. The archeological potential of the Samuel Stone Jr. USAR Center was considered to be high due to its location near surface water (nearby ponds, 400 feet away). The facility is located on Grenada-Urban Land Complex Soils, consisting of Grenada soil series (moderately well drained found in thick deposits of wind blown silt) modified by urban development. The slope is between 1-2%. There was estimated to be approximately 1 acre within the 1.5 acre facility in the east and west that was not covered by buildings or pavements. An archeological survey was recommended and a Phase 1 Survey was conducted in 1999, also by Parsons. A total of 6 STPs was excavated during the survey. No artifacts greater than 50 years of age were found at the facility, and no archeological resources were identified. Field investigations revealed that mission-related land use has disturbed soils throughout the facility, eliminating the possibility for archeological resources to be present. Since the research potential was considered to be low, no further investigation was recommended, and the Arkansas Heritage Commission concurred with this recommendation in a letter dated March 15, 1999.

The 63d RSC recently commissioned a historic building evaluation, through Brockington and Associates and determined based on the architectural survey that several buildings are not eligible for listing on the NRHP. The following facilities were determined not eligible for listing on the NRHP: Camden USAR Center, Rufus N. Garrett, Jr. USAR Center, Samuel S. Stone, Jr. USAR Center, these surveys are enclosed for your review.

Based on our determinations of eligibility, the 63d RSC has determined that there will be *no effect* on historic properties as a result of the proposed property transfers noted above. We request your concurrence and comments on the 63d RSC determinations and the enclosed documentation within 30 days of receiving this letter and its supporting documentation. If you have any further questions please contact the undersigned at (650) 793-8273.

Sincerely,

For, 

Laura M. Caballero
BRAC Environmental Coordinator
63d Regional Support Command

Enclosures



DEPARTMENT OF THE ARMY
HEADQUARTERS, UNITED STATES ARMY 63RD REGIONAL SUPPORT COMMAND
P.O. Box 63
MOFFETT FIELD, CALIFORNIA 94035-1000

June 27, 2011

Reply to the Attention of the Environmental Office

Mr. Mark Sattelberg
Field Supervisor, US Fish and Wildlife Service
Arkansas Field Office
110 S. Amity Road, Suite 300
Conway, Arkansas 72032

Dear Mr. Sattelberg:

In accordance with The Base Realignment and Closure Act of 2005, The 63D Regional Support Command (RSC) of the United States Army Reserve (USAR) is closing the Rufus N. Garrett, Jr. USAR Center located at 815 West 8th Street, El Dorado, Arkansas 71730.

Pursuant to Section 7 of the Endangered Species Act, the USAR has determined the proposed action will have no effect on any listed federally threatened and endangered species or designated critical habitat. This determination is based on the fact that the proposed transfer will be "as is" (no land clearing or construction activities).

The 63D RSC communicates no effect determinations with the US Fish and Wildlife Service in the event that data on threatened and endangered species near the site has recently been received. The 63D RSC requests a response within 30 days from receipt of this letter. If no response is received within the 30 days, concurrence will be assumed. If you have questions, please contact me at (650) 279-9112. Thank you for your assistance.

Sincerely,

Laura M. Caballero
for: Laura M. Caballero
BRAC Environmental Coordinator
63D Regional Support Command

Enclosure

Enclosure 1

The U.S. Army Reserve (USAR) is closing the Camden USAR Center located in Union County at 815 West 8th Street, El Dorado, Arkansas 71730.

Site Description and Usage – A site reconnaissance of this facility was conducted as part of the Environmental Condition of Property report process. The subject property is located on 2.83 acres of land with two permanent structures: a 14,400 square-foot Training Building and a 1,455 square-foot Storage Building. Both buildings were constructed in 1961 of concrete block with brick veneer on a concrete slab.

Ecological Communities

Approximately one-third of the Site is considered impervious (asphalt parking areas, driveways, concrete walkways, building footprints, etc.), while the remainder is covered by lawn. The Site is located in a residential area.

Wetlands, Watersheds, and Surface Waters

No surface water bodies are present on the Site or adjacent areas. A search for wetland information was conducted online from the U.S. Fish and Wildlife Service (USFWS) Web site, with no digital data available for the Site. Additionally, an Environmental Data Resources (EDR) included in the ECP report indicated no digital wetland coverage for the Site. No wetlands are known to occur on the Site.

FEDERALLY LISTED AND PROPOSED SPECIES

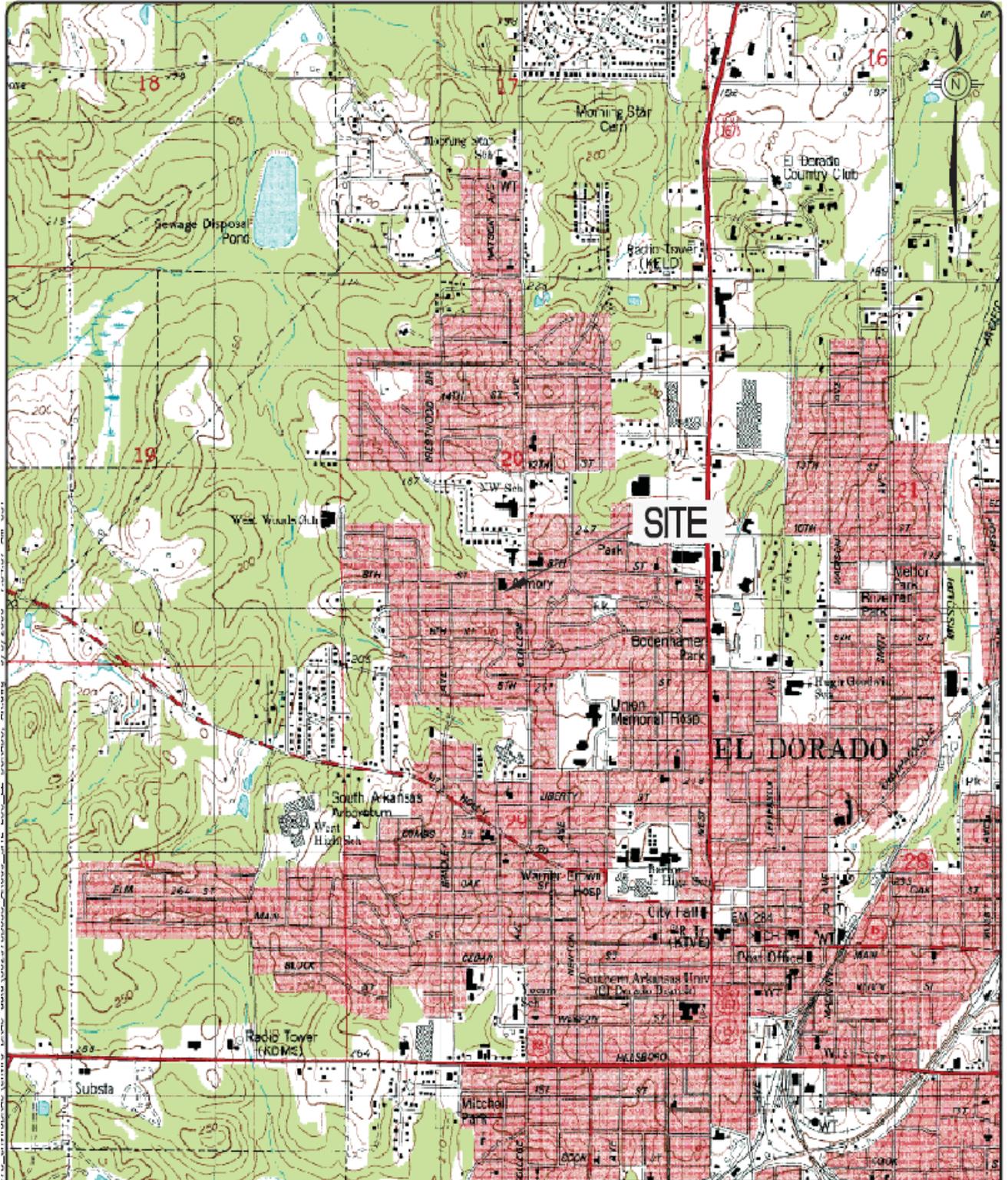
Based on the USFWS Region 4 Endangered Species List, Union County, Arkansas, the following threatened and endangered species occur within Union County, Arkansas:

Red-cockaded Woodpecker (*Picoides borealis*)

CONCLUSIONS

After reviewing the listing for the Endangered Species in Union County, it is determined that no impacts to Federally listed species are projected to occur during this project. The determination is based on the fact that the property is proposed to be removed from the USAR's holdings - "as is". Therefore, no construction or ground disturbing activities will take place during this action. Also no habitat to support any of the Federal endangered or threatened species listed for Union County occurs upon the property. The USAR, in lieu of any potential impact, determines that this action will have no effect on Federally-listed threatened and endangered species.

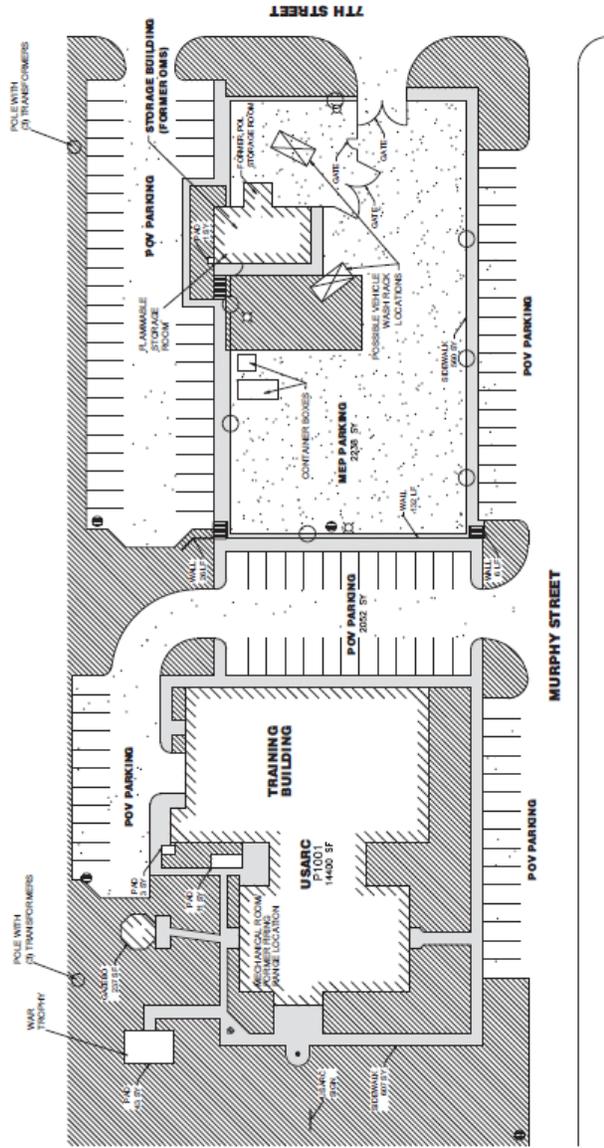
SITE LOCATION



AERIAL PHOTOGRAPH



SITE LAYOUT



TOTALS

FENCING:	792 SY
GATES:	60 LF
SIDEWALKS:	1167 SY
EXT LIGHTING:	3
ROADS:	1661 SY
POV PARKING:	2002 SY
MEP PARKING:	N/A
MEP UNPAVED:	2238 SY
MEP UNPAVED:	N/A
GRASS:	37156 SY

LEGEND

SYMBOL	DESCRIPTION	CAT. CODE
[Pattern]	MEP PARKING	85210
[Pattern]	MEP PARKING (UNPAVED)	85211
[Pattern]	POV PARKING	85215
[Pattern]	GRASS	-
[Pattern]	SIDEWALK	85220
[Pattern]	FENCE LINE	97210
[Symbol]	FLAG POLE	69010
[Symbol]	EXTERIOR LIGHTING	81230
[Symbol]	STORMWATER DRAIN	



REQUESTED BY:	FELTER
DRAWN BY:	BRONSON
DWG DATE:	08/29/06
DWG NO:	802978B036

FIGURE 2
SITE LAYOUT PLAN
ENVIRONMENTAL CONDITION OF PROPERTY
RUFUS N. GARRETT JR. USARC
EL DORADO, ARKANSAS

SOURCE:
 MORSE CADD & SERVICES
 (JULY 26, 2002)

SITE PHOTOGRAPHS



Photo 1: View looking southwest at the entrance of the Training Building.



Photo 2: Looking southwest at the north side (front) of the Storage Building.



DEPARTMENT OF THE ARMY
HEADQUARTERS, UNITED STATES ARMY 63rd REGIONAL SUPPORT COMMAND
230 RT JONES
MOUNTAIN VIEW, CALIFORNIA 94043-1000

REPLY TO ATTENTION OF

AFRC-SCA-PWE

21 March 2012

MEMORANDUM FOR RECORD

SUBJECT: Asbestos Surveillance for the AR009 Rufus Garrett Hall US Army Reserve Center and Storage Building Shop, El Dorado, Arkansas

1. On January 24, 2012, Nick Flannery performed an asbestos surveillance to determine the status of asbestos containing material (ACM) in the AR009 Rufus Garrett Hall US Army Reserve (USAR) Center and Storage Building in El Dorado, Arkansas. Mr. Flannery, the Area Facility Operations Specialist (AFOS) for AR009 has received 16 hours of asbestos operation and maintenance training to ensure proper surveillance of ACM.
2. The Rufus Garrett Hall USAR Center is located at 815 West 8th Street in El Dorado, Arkansas. Two buildings are located within the facility: the Administration Building and the Storage Building. The Storage building was originally built to be an Organizational Maintenance Shop (OMS). The buildings are used primarily for administrative, storage, training and light vehicle maintenance purposes. The Administration and storage buildings are constructed of brick and mortar exterior walls with mainly concrete cinder block and drywall interior walls and a built-up composition roof. The administration building contains approximately 14,400 square feet (sf) of floor space and the Storage building contains approximately 1,455 sf of floor space.
3. The surveillance identified that there is no previously surveyed ACM present in either building. Enclosed with this memorandum are the documented surveillance sheets noting the condition of the ACM.
4. Based on the enclosed information, the observations made, shows that no asbestos is present in either of the buildings and all building materials are in good condition, and there are no imminent asbestos hazards present. This determination was based on review of the provided material from Mr. Nick Flannery who conducted the surveillance.

A handwritten signature in blue ink, appearing to read "J. Volk", is located below the main text.

Encl as

J. STEPHEN VOLK
Compliance Manager
Vernadero Group Contractor for 63d PWE

63D Regional Support Command
 6 Month Facility Asbestos Surveillance Form
 Last Update: July 2011

Facility Name:	RUFUS N GARRETT JR USAREC
Facility ID:	AR009
Date of Surveillance:	1-24-12
Technician's Name:	NICK FLAUNOY

Original Sample IDs Homogeneous Area	Asbestos Containing Materials Description (floor tile, ceiling tile, thermal systems insulation, acoustic material, etc.)	ACM Still Present (Y/N)?	Is ACM damaged (Y/N)?	Has ACM been damaged since last surveillance?
	Is believed to be free - but some small amt may be hidden in or other locations	?	no	no
	supply BLDG - NO INFO			

Comments: IS A BRAC CLOSURE - BLDGS ARE VACANT

(use additional sheets as needed)

Fax completed form to:
 ATTN: ASBESTOS PROGRAM MANAGER
 (501) 771-7932

MEMORANDUM FOR RECORD

SUBJECT: Status of Asbestos Containing Materials at AR009 Garrett USAR Center

1. On October 2, 2012, Chris Kinslow, of Vernadero Group Inc., visited Rufus Garrett Memorial USAR Center (AR009) for the purpose of determining the current status of asbestos containing materials previously identified at the facility, as well as, performing a survey for suspect materials within the separate supply/maintenance building. I have compiled the information gathered as a result of that mission in the enclosed document entitled "Report on Status of Asbestos Containing Materials at AR009 Garrett USAR Center."
2. I have also enclosed my most recent asbestos inspector and management planner Arkansas training certificates.
3. The point of contact for this document is the undersigned at (501) 318-2072.



2 Encls

1. Report, 4 Oct 12
2. Training certificates, 21 Mar 12

CHRIS KINSLOW
63d RSC ACM Program Manager
Vernadero Group, Inc.

Report on
Status of Asbestos Containing Materials at AR009 Garrett USAR Center
4 October 1012

1. On October 2, 2012, Chris Kinslow, of Vernadero Group Inc., visited Rufus Garrett Memorial USAR Center (AR009) for the purpose of determining the current status of asbestos containing materials previously identified at the facility, as well as, performing a survey for suspect materials within the separate supply/maintenance building.

2. One area of concern to personnel at Army Environmental Law Division (ELD) is the previously identified “general ACM contamination” identified as being “throughout crawl space” in a spreadsheet report dated 5 December 1990. The surface area described as contaminated within the facility is stated at 15,500 square feet. The total facility area is 15,889 square feet. The facility is constructed slab-on-grade, so there is no crawlspace beneath the building (see Figures 1-3). Thinking that perhaps the authors meant an area above the ceiling, I checked the areas above the plaster ceiling at the male and female latrines. While there was no access panel in either of the latrines, I was able to remove ceiling tiles from the adjacent drop ceiling; thereby gaining visual access to the area above the plaster ceiling (see Figures 4-10). The area above the plaster ceiling in the kitchen was inaccessible due to a lack of access panels coupled with masonry that reached completely to the ceiling in the adjacent drop ceiling area (see Figure 6). There was an access panel in the break room that I was able to open and visually verify that no “general ACM contamination” was present (see Figure 7). For these reasons, I conclude that the “general ACM contamination” said to be located within the crawlspace was either removed or incorrectly identified within the 1990 report.

3. Another area of concern for ELD is the “roof tar” located on the “roof” in the same 1990 report. The original sections of the administrative building, as well as, the supply/maintenance building were covered by “SIPLAST” roofs on the day of survey (see Figures 11, 12). Each of the buildings contained a data plate put in place by the roofing contractor following installation of the roof (see Figures 13, 14). The circa 1975 addition to the administrative building is covered by a tar and gravel built-up roof (see Figure 15). The metal trim attached to the roof does not appear 30+ years old, so there is a good probability that the roof was replaced at some point over the building’s lifespan (see Figure 16). Unfortunately, I could not determine whether that particular roof was replaced before or after the 1990 report.

4. One last area of concern for ELD involved the lack of inclusion of the supply/maintenance building in either the 1990 or 1997 surveys. The building was originally designed as a one room concrete block and brick structure with two pedestrian entrance doors and a roll-up door (see Figures 17-21). At some point, the roll-up door was removed and replaced with concrete block. In 1990 and 1997, the building would have been a single room structure without floor covering, insulation, drywall, or surface finishes (other than paint). This is why it was not included in either survey. I was able to find renovation drawings that were drafted in 1998. These drawings included addition of a latrine and an air handler with associated ductwork. Therefore, at some time after 1998 a drywall enclosed latrine with one toilet and one sink was added (see Figures

22-24). Ductwork was also added at some point and was field identified as fiberglass during the present visit (see Figures 25, 26).

5. In addition to the items above, I went through the administrative building attempting to determine whether or not other items of ACM identified in the 1990 report were removed. One such item is listed as “elbows” in the “boiler room.” I was able to determine that all insulation within the boiler room is fiberglass (see Figures 27-29). Another item of identified ACM is “TM insulation” in the “North mechanical room.” Here, also, I was able to determine that all insulation was fiberglass. The next items listed are “MM flooring” and “adhesive above tile” found “throughout administration.” There are presently three types of vinyl floor tile located within the administrative building. As can be seen from the attached photographs, all tiles are single layer (see Figures 30, 31). The dark blue and white tile present in the addition area of the building has been installed since the 1997 survey. Many boxes of this tile are still located in the janitorial closet (see Figure 32). The tile located in the original portion of the administrative building was sampled in the 1997 survey, and the lab results indicated no asbestos was present. The third tile type is located in what was until recently a network room (see Figure 33). This tile was also sampled in 1997, and the lab results indicated no asbestos was present. Another item listed on the 1990 report is “MJP (QC sample)” located in the “north mechanical room.” Again, all insulation located within both mechanical rooms was field identified as fiberglass. Lastly, an asbestos-containing “expansion joint” was listed on the 1990 report as being in the “north mechanical room.” On the date of this visit, all expansion joints/vibration collars located on the air handler units in both mechanical rooms were of vinyl composition (see Figures 34-37).

6. During this visit, I attempted to find all areas of thermal systems insulation present in the administrative building and field identify those materials as fiberglass (see Figures 38-43). I feel that I was mostly successful, though there was one area that I could not positively identify. There is an access panel located in the break room in the original portion of the administrative building. The access panel is very small; barely large enough for an adult head. Approximately four to five feet above that access panel, there are two pipes visually identifiable as being clad in metal wrapped fiberglass insulation (see Figure 44). However, there are four elbows that have a mudded gauze-type wrap. Due to the height of the elbows above the access panel coupled with the small size of the access panel itself, I could not touch the elbows to verify that they were fiberglass. I also tried to access the area from the drop ceiling in the hallway. However, the concrete block wall continued nearly to the roof. On many occasions, I have found a similar wrapping over fiberglass elbows. However, because I couldn't actually touch the material, I cannot say that the underlying insulation is not asbestos-containing.



Figure 1- Rufus Garrett USARC main entrance



Figure 2- Side entrance of original admin building showing slab-on-grade construction



Figure 3- Exterior of addition showing slab-on-grade construction



Figure 4- Lack of access panels in men's latrine



Figure 5- Lack of access panel in women's latrine



Figure 6- Lack of access panel in kitchen



Figure 7- View of plaster metal lathe ceiling from access panel in break room



Figure 8- Absence of asbestos contamination above ceiling outside latrines



Figure 9- Absence of asbestos contamination above ceiling outside latrines



Figure 10- Absence of asbestos contamination above ceiling outside latrines/ field identified fiberglass insulation



Figure 11- "SIPLAST" roof on original admin building



Figure 12- "SIPLAST" roof on original admin building



Figure 13- Roof warranty on original admin building



Figure 14- Roof warranty on supply/maintenance building



Figure 15- Built-up roof on addition



Figure 16- Metal flashing trim on addition



Figure 17- Supply/maintenance building



Figure 18- Supply/maintenance exterior front closed-off bay



Figure 19- Supply/maintenance building exterior pedestrian side entrance and flammable storage room door



Figure 20- Interior of supply/maintenance building



Figure 21- Metal ceiling in supply/maintenance building



Figure 22- Drywall and baseboard for supply/maintenance building latrine



Figure 23- Supply/maintenance building latrine area with ceramic tile



Figure 24- Supply/maintenance building latrine sink



Figure 25- Fiberglass ductwork in supply/maintenance building



Figure 26- Air handler in supply/maintenance building

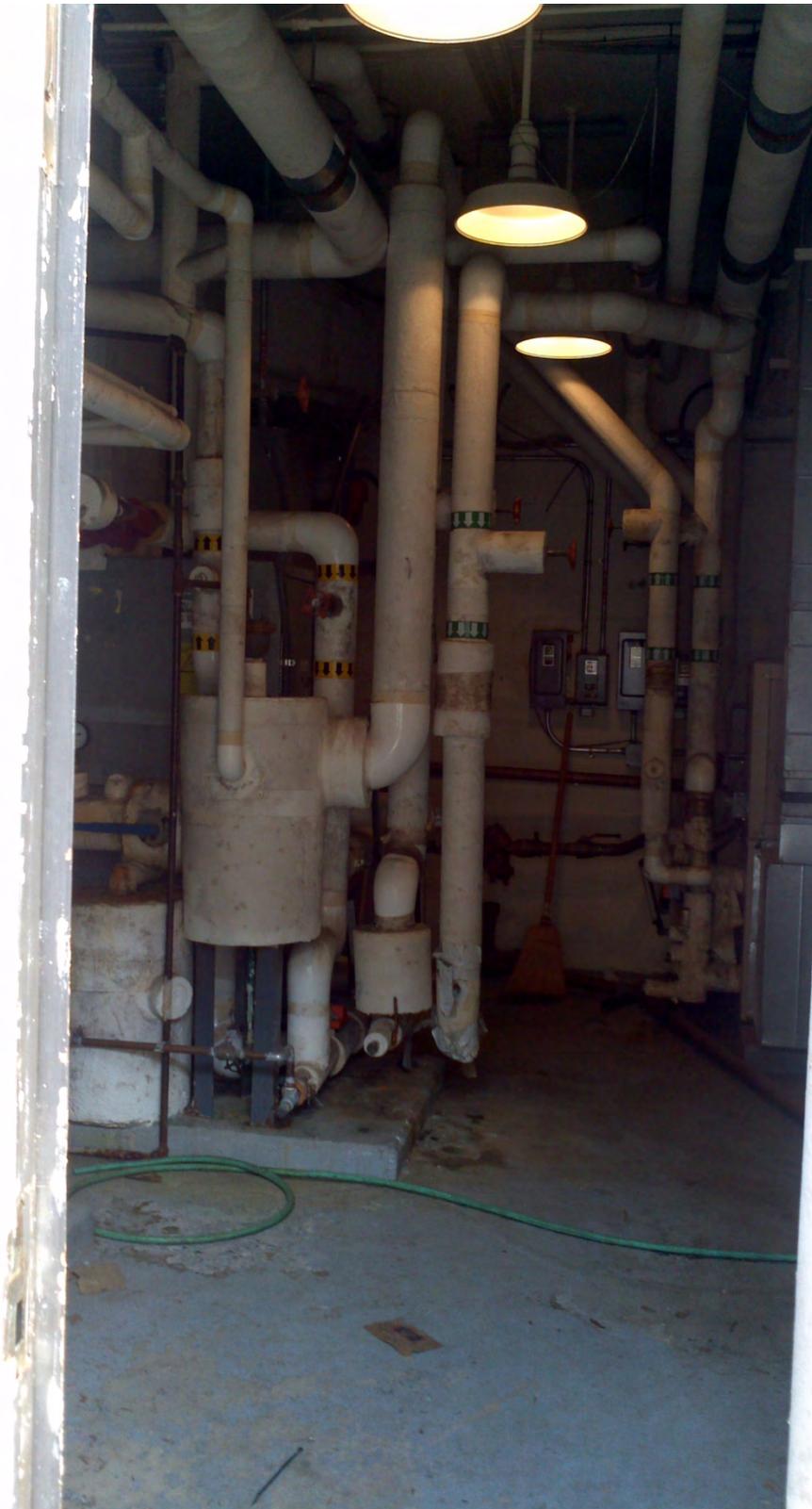


Figure 27- Fiberglass insulation in mechanical room



Figure 28- Fiberglass insulation in mechanical room



Figure 29- Fiberglass insulation in mechanical room



Figure 30- Single layer darker beige/tan tile shown is in original admin area while lighter white/blue tile is located in addition



Figure 31- Single layer white/blue tile



Figure 32- Boxes of uninstalled white/blue tile



Figure 33- Replacement tile in network room (upper part of photo)



Figure 34- Vibration collar in mechanical room



Figure 35- Vibration collar in mechanical room



Figure 36- Vibration collar in mechanical room



Figure 37- Vibration collar in mechanical room



Figure 38- Fiberglass insulation above latrines



Figure 39- Fiberglass insulation above latrines



Figure 40- Fiberglass insulation above corridor outside latrines



Figure 41- Fiberglass insulation going down to women's latrine



Figure 42- Fiberglass insulation and ductwork above corridor ceiling outside latrines



Figure 43- Fiberglass insulation pipe penetrations into kitchen area



Figure 44- Fiberglass (see yellow insulation) pipe runs with elbows (not field identifiable as fiberglass)

HEC

• HEC ENVIRONMENTAL GROUP, INC. •

Geologists • Engineers • Chemists • Hygienists

Certificate of Completion

Chris Kinslow

AR907551584

1623

has successfully completed training in TSCA, Title II

Principles of Asbestos Abatement for Inspector-Refresher

AHERA / ASHARA / NESHAP

Certificate Number
5035

Date of Training

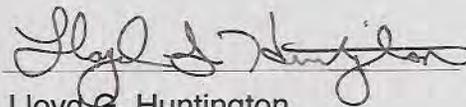
3/21/2012

Date of Examination

3/21/2012

Expiration Date

3/21/2013



Lloyd G. Huntington

Instructor

HEC Environmental Group, Inc.

409 Hazel Street, Texarkana, AR 71854, 870-772-47-- or 1-888-772-4700
920 Edison Avenue, Suite 10, Benton, Ar 72015, 501-315-3006

HEC

• HEC ENVIRONMENTAL GROUP, INC. •

Geologists • Engineers • Chemists • Hygienists

Certificate of Completion

Chris Kinslow

907551584

1623

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Principles of Asbestos Abatement for Mgmt.Planner-Refresher

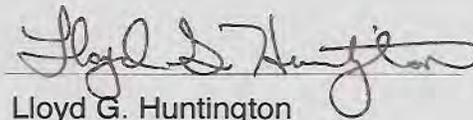
AHERA / ASHARA / NESHAP

Certificate Number
5031

Date of Training
3/21/2012

Date of Examination
3/21/2012

Expiration Date
3/21/2013



Lloyd G. Huntington

Instructor

HEC Environmental Group, Inc.

409 Hazel Street, Texarkana, AR 71854, 870-772-47-- or 1-888-772-4700
920 Edison Avenue, Suite 10, Benton, Ar 72015, 501-315-3006



REPLY TO
ATTENTION OF:

DEPARTMENT OF THE ARMY
HEADQUARTERS, U.S. ARMY JOINT MUNITIONS COMMAND
1 ROCK ISLAND ARSENAL
ROCK ISLAND, IL 61299-6000

AMSJM-SF

MEMORANDUM FOR HQDA, ACSIM, BRAC Division (Ms. Lynne Anderson),
600 Army Pentagon, Washington, DC 20310-0600

SUBJECT: Results from the Radiological Survey at the Rufus N. Garrett, Jr. U.S. Army Reserve
Center, El Dorado, AR

1. On 07 December 2011, we completed the final status survey work for the radiological release at the Rufus N. Garrett, Jr. U.S. Army Reserve Center in compliance with the accepted federal government protocol (MARSSIM Class 3). The enclosed Radiological Survey Report provides an evaluation of radiological materials used and the summary of findings and results. The report concludes that no further action is required with respect to the radioactive devices or materials identified. We conclude the site is free of radiological concerns.

2. Our point of contact for questions or comments is Mr. Michael Kurth, AMSJM-SF, (309) 782-8423, electronic mail michael.f.kurth.civ@mail.mil.

Encl

STEPHANIE A. CHRISTIE
Director, Safety/Rad Waste Directorate

Final

Radiological Assessment Report

**Rufus N. Garrett, Jr. U.S. Army Reserve Center (AR 009)
815 West 8th Street
El Dorado, Arkansas 71730**

Contract No. W52P1J-11-D-0090-0001

Prepared For:



**Rock Island Contracting Center
Rock Island Arsenal
Rock Island, IL 61299**

Prepared By:

Terranear  **PMC**

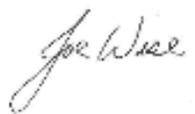
**222 Valley Creek Blvd., Suite 210
Exton, PA 19341**

December 2011

**Final
Radiological Assessment Report**

**Rufus N. Garrett, Jr. U.S. Army Reserve Center (AR 009)
815 West 8th Street
El Dorado, Arkansas, 71730**

Authored By: 
_____ Date: 12/07/11
Frank Tarantello, Characterization Manager

Reviewed By: 
_____ Date: 12/07/11
Joe Wise, Field Team Lead

Approved By: 
_____ Date: 12/07/11
Dan Caputo, PhD, CHP, Project Manager

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LIST OF ACRONYMS

ASME	American Society of Mechanical Engineers
BRAC	Base Realignment and Closure
CFR	Code of Federal Regulations
CM	Characterization Manager
CoC	Chain of Custody
COTR	Contracting Officers Technical Representative
DoD	Department of Defense
DOE	Department of Energy
DOT	Department of Transportation
ECP	Environmental Condition of Property
ELAP	Environmental Laboratory Accreditation Program
EPA	Environmental Protection Agency
ES	EnergySolutions, LLC
ES&H	Environmental Safety and Health
FP	Field Procedure
GEL	General Engineering Laboratories
IEC	International Electrotechnical Commission
ISO	International Organization for Standardization
MARSSIM	Multi Agency Radiation Survey and Site Investigation Manual
NELAC	National Environmental Laboratory Accreditation Conference
NIST	National Institute of Standards Technology
NORM	Naturally Occurring Radioactive Material
NQA-1	Nuclear Quality Assurance Level -1
NRC	Nuclear Regulatory Commission
OMS	Organizational Maintenance Shop
PM	Project Manager
POC	Point of Contact
QA	Quality Assurance
QC	Quality Control
QSM	Quality Systems Manual
RAM	Radioactive Material
RCT	Radiation Control Technician
RSO	Radiation Safety Officer
TGA	T.G. Adams and Associates Inc.
TPMC	TerranearPMC, LLC
USARC	U.S. Army Reserve Center
USEPA	U.S. Environmental Protection Agency

1.0 EXECUTIVE SUMMARY

1.1 INTRODUCTION

This Report describes objectives, procedures, and findings of the Radiological Assessment activities conducted at the Rufus N. Garrett, Jr. U.S. Army Reserve Center (USARC) (Facility ID AR 0009) located in El Dorado, Arkansas, hereafter referred to as the “Garrett USARC Site” or “the site”.

This report was prepared by TerranearPMC, LLC (TPMC) of Exton, Pennsylvania, to fulfill the requirements of Contract W52P1J-11-D-0090, Delivery Order No. 0001 with the U.S. Army – Rock Island Contracting Command, Rock Island Arsenal, Illinois. This radiological assessment work is carried out to support the Base Realignment and Closure (BRAC) process.

1.2 PROJECT OVERVIEW

TPMC, along with its subcontractors, formed three survey teams, each consisting of a Team Lead, Radiation Control Technician (RCT), and RCT Sampler/Shipper to perform radiological assessments of multiple BRAC sites across the country. Team #2 performed the site assessment for the Garrett USARC Site.

Assessment of the site began with a review of available historical information prior to mobilization in the field. This information was used to help determine the survey approach and methodology for the field team. Upon arrival at the Garrett USARC Site, the team performed visual inspections of the facility and conducted interviews with key site personnel to obtain additional information used to refine the survey approach. Any new information obtained during the site interview and visual inspections was incorporated into the survey design to more accurately assess the site for potential radiological contamination, residual radioactive materials, or other radiological anomalies.

Once the survey approach was defined, the team conducted radiological surveys for gamma and alpha/beta radiation using hand-held instruments. In addition, the field team obtained smear/wipe samples at various locations for offsite laboratory analysis to determine the presence of removable alpha, beta, and Tritium radioactivity. The on-site assessment activities were performed on September 30 – October 01, 2011.

1.3 FINDINGS AND RECOMMENDATIONS

After review of the site Environmental Condition of Property (ECP) Report (ECP, 2007), related site historical documents, personnel interviews, site inspections, visual walk downs, and surveys, it is concluded that no indications of the past storage or use of radiological commodities at the Garrett USARC Site were found. Per historical data reviewed for this site, the following Army Reserve Unit was listed as the sole occupant at the site (ECP, 2007): Detachment 1 of the 321st Material Management Center. Due to the nature of material and equipment typically utilized by military units, it should be assumed that some low-level radiological material associated with the illumination of various types of military equipment (e.g., weapon sights, compasses, aiming circles, etc.) could have been stored or used on site. However, no evidence was found to suggest that any radiological commodities were improperly managed at the site, or that any radiological material was released.

The radiological survey data included sixty (60) direct alpha, beta, and gamma radiation measurements, thirty (30) smear samples for alpha /beta radioactivity, and three (3) Tritium

smear samples sent to the offsite laboratory for analysis. The surveys identified seventeen (17) locations (survey locations 6, 6a, 6b, 18, 18a, 18b, 19, 19a, 19b, 19c, 33, 33a, 33b, 33c, 35, 35a, and 45) where the fixed beta radiation levels were slightly elevated; however further investigation determined the elevated readings were due to Naturally Occurring Radioactive Material (NORM) in building materials.

The radiological assessment results support the finding that the Garrett USARC Site does not currently possess radioactive materials or contain residual radioactivity above the Nuclear Regulatory Commission (NRC) Regulatory Guide (Reg Guide) 1.86 limits. Based on the historical information and supporting survey results, the site may be considered radiologically non-impacted in accordance with NRC NUREG 1575/EPA 402-R-97-016, Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM), Revision 1 guidance.

2.0 PROJECT BACKGROUND

2.1 SITE HISTORY, LOCATION AND FEATURES

The Garrett USARC Site is located on 2.83 acres of land with two permanent structures: a 14,400-square-foot Training Building and a 1,455-square-foot Storage Building. Both buildings were constructed in 1961 of concrete block with brick veneer on a concrete slab. Historic uses of the USAR Center included administrative and educational operations, maintenance of military vehicles including vehicle washing, and an indoor firing range. The site was used historically by reservists for drill activities on various weekends throughout the year. The indoor firing range was closed in 1996. The present-day Storage Building was originally constructed for use as an Organizational Maintenance Shop (OMS). Maintenance activities and vehicle washing ceased when the OMS was converted to the Storage Building (ECP, 2007).

A site aerial view is provided in Figure 2-1.

2.2 AREAS OF CONCERN

After review of the site ECP Report and related site historical documents, personnel interviews, site inspections, visual walk downs, and surveys, no indications were found of the past storage or use of radiological commodities at the Garrett USARC Site. Per historical data reviewed for this site, the following Army Reserve Unit was listed as the sole occupant at the site (ECP, 2007): Detachment 1 of the 321st Material Management Center. Due to the nature of material and equipment typically utilized by military units, it was assumed that some low-level radiological materials associated with the illumination of various types of military equipment (e.g., weapon sites, compasses, aiming circles, etc) were likely used or stored at the site.

**Figure 2-1
Site Aerial View**



**Rufus N. Garrett, Jr. U.S. Army Reserve Center (AR 009)
815 West 8th Street
El Dorado, Arkansas, 71730**

Note: Red outline shows approximate location of property boundary.

3.0 PROJECT ORGANIZATION

3.1 PROJECT TEAM

TPMC was tasked by the U.S. Army – Rock Island Contracting Center, Rock Island Arsenal, Illinois, to perform radiological assessments at multiple Army Reserve BRAC sites across the country under contract number W52P1J-11-D-0090-0001. TPMC performed the site assessments with assistance from subcontractors EnergySolutions, LLC (ES); T.G. Adams and Associates, Inc. (TGA); and General Engineering Laboratories, LLC (GEL). Due to the number of sites, tight schedule, and geographic separation of the sites, TPMC utilized three teams to execute the site assessments fieldwork.

Field Team #2 performed the site assessment for the Garrett USARC Site supported by dedicated project personnel in the home office. Key positions and responsibilities for this site assessment are listed below, and assigned personnel are listed in Table 3-1.

Project Manager (PM) – Overall management responsibility for the project. The PM is responsible for providing adequate resources (budget and staff), and functions as the single point of contact (POC) for the project team. The PM is also responsible for quality of technical performance and deliverables while maintaining schedule and budget.

Characterization Manager (CM) – Responsible for ensuring analytical samples, results, data, and records are properly documented and stored; as well as coordinating field activities with Field Team Leads. The CM also develops the Final and final site assessment reports.

Data Quality Manager – Responsible for ensuring data quality, and reviews data packages from the field and laboratory.

Environmental, Safety and Health (ES&H) Manager – Responsible for management of all site safety personnel, conduct of audits of work for safety and health considerations, preparation of Activity Hazard Analysis, conduct and documentation of periodical project safety assessments and inspections, and conduct of safety training.

Radiation Safety Officer (RSO) – Responsible for ensuring that field teams are implementing radiological policies and procedures; and complying with all radioactive material license/permit conditions, and radiological safety requirements. In addition, the RSO performs radiological protection and safety audits, reviews required radiological health and safety documents, and maintains radiation safety controls.

Database Manager – Responsible for providing and maintaining document-sharing platform, offsite laboratory data management and supporting site assessment report preparation.

Group Field Team Lead – Maintains a presence at the site at all times during field activities and provides technical direction and guidance to RCT and Sampler/Shipper personnel during execution of field activities.

RCT – Responsible for on-site environmental monitoring and radiological control programs in accordance with applicable regulatory guidelines. The RCT leads the field radiological survey activities, ensures properly calibrated and operational field instruments, and oversees sample collection and preparation of documentation related to radiological data generated from field measurements.

Sampler/Shipper –Manages and coordinates on-site activities associated with the collection, packaging, and handling of samples generated as a result of the site assessment activities. The Sampler/Shipper also provides Department of Transportation (DOT) and NRC compliant handling and shipment of radioactive calibration sources and samples during field activities.

**Table 3-1
Project Team Personnel**

Name	Position/Role	Relevant Experience (Years)
Dan Caputo	Project Manager	22
Frank Tarantello	Characterization Manager	21
Robert Brounstein	ES&H Manager	23
Mark Tepperman	Data Quality Manager	25
Kinshuk Shroff	Database Manager	10
Ted Adams	RSO & Group Field Team #1 Lead	31
Joe Wise	Group Field Team #2 Lead	26
Stan Stevens	Group Field Team #3 Lead	30

3.2 SUBCONTRACTOR SUPPORT

TPMC teamed with key subcontractors to provide manpower, specialized technical support, and analytical services. Table 3-2 identifies the project subcontractors and their respective roles and responsibilities.

**Table 3-2
Subcontractor Support**

Name	Role/Responsibility
EnergySolutions, LLC (ES)	Professional Labor support and radiation instrumentation
T.G. Adams and Associates Inc. (TGA)	Professional Labor support and radiation instrumentation
General Engineering Laboratories, LLC (GEL)	Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP) approved analytical laboratory services

4.0 OBJECTIVES AND RADIOLOGICAL ASSESSMENT METHODOLOGY

The overall objective of the BRAC Site Radiological Assessments is to conduct visual inspections, interviews, radiation surveys, smear/wipe sampling, and analysis for both fixed and removable contamination at multiple BRAC locations in the continental U.S. This particular report presents the results of the site assessment performed at the Garrett USARC Site.

4.1 RADIOLOGICAL ASSESSMENT METHODOLOGY

For this project, radiological assessment methodology included reviewing available historical and current information; performing visual inspections; conducting interviews; conducting general radiation surveys; obtaining smear and wipe survey samples; laboratory analysis of smear/wipe samples; and evaluation / interpretation of the analytical results. Based upon this review there is no evidence to suggest that any radiological commodities were improperly managed at the site, or that radiological material was released. Therefore, the Garrett USARC Site qualified for the simplified assessment procedure of Appendix B of MARSSIM.

The site assessment and scoping survey was performed in accordance with the MARSSIM guidance document (NRC NUREG 1575) protocols. Survey action levels for alpha and beta radiation levels were obtained from NRC Reg Guide 1.86. In accordance with industry standards, the area gamma radiation survey action limit was based on an "indistinguishable from background" determination that is normally 2-3 times ambient background radiation levels. The site did not have a history of radiological releases, accidents, or radioactive waste disposal; and thus the survey was intended to support a MARSSIM non-impacted site determination.

4.2 FIELDWORK ACTIVITIES

Fieldwork activities may be grouped into two categories:

1. Pre-mobilization Activities
2. Field Activities

4.2.1 Pre-Mobilization Activities

Pre-mobilization activities included those actions required to ensure the team was fully prepared to perform their job tasks upon arrival at the project site.

TPMC separated the pre-mobilization phase into the following activities:

1. Historical Due Diligence
2. Staffing and Training
3. Procurement Actions
4. Project Scheduling
5. Shipment of Equipment and Supplies

4.2.1.1 Historical Due Diligence

TPMC initiated due diligence review by researching the ECP Report for the site. In addition, available Army literature regarding radioactive commodity use and storage was reviewed. The site review and associated documentation were logged and referenced for use in field activities. The results of the historical due diligence review for the subject site are documented in the Historical Review Checklist, Appendix A.

4.2.1.2 *Staffing and Training*

As described in Section 3.0 of this report, TPMC fully staffed this project with qualified personnel along with key select subcontractors. TPMC delegated full responsibility and authority to the PM regarding project performance and management of project staff. The PM had direct access to top-level management of TPMC and the subcontractors so that contract, management, and staff needs were immediately met. In addition, key personnel were selected based on their expertise, credentials, DoD and client experience, communication skills, flexibility, and history/institutional knowledge.

TPMC management, technical support personnel, and field teams worked together as a fully integrated team. The infrastructure to accomplish this was in place and employed existing TPMC corporate processes and procedures. The TPMC corporate RSO/ES&H manager conducted initial radiological, and health and safety training to field personnel. Project personnel received awareness training on the following topics:

- General Employee Training
- Hazardous Communications
- Personnel Protective Equipment
- Blood-Borne Pathogens
- Site-Specific Radiation Worker Training
- Confined Space
- Applicable Site-Required Training, if required
- Radiological Field Procedures and related forms

4.2.1.3 *Procurement Actions*

TPMC's Procurement Manager controlled the purchase, leasing and subcontracting for material, equipment, and manpower support required for this project. Procured items included, but were not limited to, the following items:

- Ludlum Model 19 MicroR (μ R) survey meter (area Gamma Radiation)
- Ludlum Model 2360 Dual Alpha/Beta rate meter with logging capabilities
- Ludlum Model 43-89 / 43-93 Dual Alpha/Beta rate meter with scintillation detector
- Ludlum Model 2221 coupled with Ludlum Model 44-9 (Beta Activity)
- Ludlum Model 2221 coupled with Ludlum Model 43-90 (Alpha Activity)
- Instrumentation check sources (Thorium-230, Technetium-99 and Cesium-137)
- Purchase of airline tickets
- Hotel reservations
- Car/SUV rentals
- Subcontracted RCT support
- Support tools (i.e. hand-tools, masslin mops, flashlights, etc.)
- Recording equipment/documents
- Communication devices (two-way radios for site communication)
- Digital cameras with media
- Personnel Protective Equipment

4.2.1.4 *Schedule*

TPMC prepared a comprehensive project schedule to cover all required tasks and activities related to this project. During the project, TPMC continually updated the schedule and reported

any changes or extensions to the Army Contracting Officers Technical Representative (COTR) as required.

4.2.1.5 *Shipment of Supplies*

To expedite field activities while decreasing the amount of equipment and supplies carried by field staff during initial mobilization, TPMC shipped field supplies to each team's initial survey location. These materials and supplies included items listed in Section 4.2.1.3.

Radioactive check sources were transported in full compliance with DOT 49 CFR Part 173 as excepted radioactive materials, instrument and article shipments; and were shipped by a trained and experience hazardous material shipper assigned to each team.

4.2.2 **Field Activities**

Field activities were grouped into the following categories:

- Site Walkdown
 - Interviews with key POCs
 - Visual Inspection of site
- Documentation of Survey Approach
- Radiation Surveys
 - Area gamma radiation measurements
 - Direct alpha/beta measurements (total contamination)
 - Qualitative removable alpha/beta contamination (large area wipes)
 - Quantitative removable alpha/beta contamination (100 cm² smear samples; dry for alpha/beta and wet for Tritium analysis)
- Shipment of Samples to Offsite Laboratory

4.2.2.1 *Site Walkdown including Visual Inspection and Interviews with key POCs*

Upon arrival on-site, the TPMC Team Lead met with site personnel to gather background information regarding the site, and to receive site-specific training/indoctrination as required. The team conducted a visual inspection of the site to identify any radioactive commodities, radiation use areas, or locations where radiation could be present. If any such material/equipment was identified, it was inventoried with a detailed description and location, to reduce the risk of a loss of identified material/equipment. These photos can be found in Appendix B.

4.2.2.2 *Documentation of Survey Approach*

The Team Leads used historical due diligence reviews, visual inspections, and interviews to refine the overall survey strategy ultimately implemented at the site. This approach was controlled via TPMC Procedure BRAC-Field Procedure (FP) – 01, "Survey Approach Preparation / Documentation" and documented via Attachment C, "Survey Approach Documentation Form". The Survey Approach Documentation Form for this site is provided in Appendix C.2.

4.2.2.3 Radiation Surveys

Each of the TPMC Field Teams was provided the necessary equipment and supplies to perform the radiological assessment surveys in accordance with methodology previously defined. The types of analyses, instrumentation, and detection methods are detailed in Table 4-1 below.

**Table 4-1
Portable Instrumentation for BRAC Site Deployment**

Type of Measurement	Type of Instrument	Detection Method
Direct measurements for total contamination	Ludlum Model 2221 rate meter with Ludlum Model 44-9 probe	Geiger-Mueller (G-M)
Direct measurements for total contamination	Ludlum Model 2221 rate meter with Ludlum Model 43-90 probe	Scintillation
Direct measurements for total contamination	Ludlum Model 2360 rate meter with Ludlum Model 43-89 or 43-93 probe	Scintillation
Wipe tests for removable contamination	Ludlum Model 2360 rate meter with Ludlum Model 43-89 or 43-93 probe	Scintillation
Wipe tests for removable contamination	Ludlum Model 2221 rate meter with Ludlum Model 44-9 probe	Geiger-Mueller (G-M)
	Ludlum Model 2221 rate meter with Ludlum Model 43-90 probe	Scintillation
Low-level radiation exposure rate survey	Ludlum Model 19 MicroR Meter	Sodium Iodide (NaI) Scintillator

Prior to taking survey measurements, each team chose a low-background location as a temporary base of operations to conduct instrument quality control and performance checks. The temporary base was the area where smear/wipe samples were counted and instrument performance verified prior to use.

The team first proceeded to areas of the site where radioactive material (RAM) or contamination could be present (e.g., former RAM storage/use areas as described in the Survey Approach). The team then surveyed areas with a lower likelihood of contamination using the MARSSIM graded approach protocol.

The radiological evaluation included an area radiation survey with a MicroR meter (minimum 30 exposure rate measurements) and a contamination survey consisting of three components: fixed contamination (minimum 30 direct measurements), qualitative removable contamination (large area wipes, as appropriate), and quantitative removable contamination (100 cm² smear tests; minimum 30 dry wipes for gross alpha/beta and three (3) wet smears for Tritium). The qualitative removable contamination measurements were used to sample a large area to determine if any removable contamination was detectable above ambient background levels. If contamination was detected with a large area wipe or a direct measurement, the team expanded their survey area to gather quantitative data in the location where contamination was found. If radon progeny was suspected as the source of contamination, the large area wipe or smears were allowed to decay and re-counted to verify that radon progeny was the source of elevated readings.

In order to ensure consistency with MARSSIM and meet project data quality objectives, a minimum of thirty (30) smear samples were collected at the site and at least that many direct radiation measurements for a minimum of sixty (60) documented data points per site. An additional three (3) wet Tritium (H-3) smears were collected for a 10:1 dry-to-wet smear ratio.

While on-site, direct measurements and dry qualitative smear samples results were compared to applicable Reg Guide 1.86 Table 1 Limits. Radiation exposure rate levels were compared to site ambient background levels. Radiological surveys were documented on a standardized survey form that included information on the instrumentation, background levels, measurement type, survey location (maps and/or photos), and survey results. The dry qualitative smear sample results were only used as indicators of the potential for removable contamination or radon progeny, and were only documented on the field data collection worksheets. These samples were sent to an offsite laboratory for quantitative analysis for comparison against the action levels and are presented in this report.

Survey documentation was prepared by the RCT Surveyor and peer reviewed by the Team Lead to ensure complete capture of information while on-site. Wet and dry smears were shipped overnight to the selected offsite vendor laboratory, GEL (a DoD ELAP Accredited facility), for quantitative radiological (gross alpha, beta, and Tritium) analysis. Chain of Custody (CoC) forms were completed for all samples and are included in Appendix D. Three-day turn-around times were required for sample analyses to ensure the timeliness of the data for incorporation into the Final report.

At the conclusion of each day's field activities, a brief status report was compiled listing on-site personnel, actions accomplished, significant findings, and planned activities for the following day, as applicable, and submitted to the COTR and BRAC office POCs. Copies of these Daily Reports can be found in Appendix E.

In addition, at the conclusion of each day's activities, field notes, data sheets, and logs were transmitted to the Characterization Manager for quality data review.

4.2.2.4 *Sample Custody and Control*

The handling and transport of samples destined for the analysis at GEL was coordinated by the Team Lead. As a result, each sample was tracked/controlled on a CoC form and properly labeled.

Tritium samples were placed inside plastic vials, which in turn were placed inside plastic bags to ensure the smears remained moist during transit. The alpha/beta smears were placed into a plastic bag and sealed. The samples were then packaged in a Federal Express (FedEx) overnight pouch with air bills completed for shipment of the applicable BRAC site samples to GEL. Since the sample media were not suspected of being a hazardous material per DOT, the shipment was handled as non-regulated sample media and turned over to FedEx.

5.0 SAMPLE COLLECTION AND ANALYTICAL LAB SCOPE

5.1 REMOVABLE SMEAR SAMPLING

A total of thirty-three (33) quantitative smear samples (100 cm² smear tests) were taken at the site. This included thirty (30) dry smear samples were collected and analyzed for removable alpha/beta contamination, and three (3) wet smear samples taken and analyzed for Tritium contamination. The following sections provide details of the sample collection and analytical methods.

5.2 SAMPLE IDENTIFICATION

A unique sample numbering system was used to identify each sample collected and submitted for laboratory analysis. This system, documented in FP09-R0-TPMC, provided a tracking procedure that enabled data retrieval and use and ensured that the sample numbers were not duplicated. The sample identification (ID) numbers were documented on sample field sheets. Sample ID numbers were used on sample labels or tags, field data sheets and/or logbooks, CoC records, and any other applicable documentation used during the project.

5.3 SAMPLE CONTAINERS, PRESERVATION, AND HOLDING TIMES

Gross alpha/beta smear samples were placed in plastic bags per GEL direction. Tritium smears were placed in plastic vials containing a small quantity of de-ionized water per GEL instructions. Preservation and holding times did not apply to these samples.

5.4 ANALYTICAL METHODS

Samples were sent to GEL for analysis. These samples were analyzed for the following parameters, using the corresponding methods:

- Tritium by Liquid Scintillation: GL-RAD-A-002
- Gross Alpha/Beta by Gas-Flow Proportional Counting: EPA 900.0/SW846 9310/SM 7110B Modified

5.5 QUALITY ASSURANCE/QUALITY CONTROL

Quality Control (QC) was maintained on this project at all stages including instrument use / handling, sample integrity, and analytical laboratory data.

5.5.1 Instrument Use / Handling

In order to maintain consistency in application of field requirements, the teams performed their field activities in accordance with the approved TPMC procedures and policies, as well as the corresponding training that was provided prior to mobilization of each of the teams.

The team was issued survey instruments, each of which was calibrated by a National Institute of Standards & Technology (NIST) certified offsite facility. Copies of the calibration certificates used for this project are included as Appendix F.3, "Instrument Calibration Sheets". In addition, each day the team RCT performed Instruments Checks (pre and post survey) to ensure the instruments were operating within the established range. Instrument use and calibration was

controlled via TPMC procedure, FP19-R0-TPMC, "Calibration and Maintenance of Survey Instruments".

As data was collected by the team, the Team Lead provided oversight with regard to the survey methods used, as well as the data sheets generated during execution of the field work. Essentially the Team Lead functioned as first-line reviewer for the project.

5.5.2 Preserving Sample Integrity

Sample integrity was maintained through the use of CoC forms and controlled by procedure FP09-R0-TPMC, "Sample Identification Tracking". Sample tracking was controlled by procedure FP10-R0-TPMC, "Sample Container Preparation and Sample Preservation". In addition, the Team Lead functioned as an independent reviewer during generation of the CoC forms.

5.5.3 GEL Laboratories Data Generation and Review

GEL Laboratories has a mature Quality Assurance (QA) program that has been audited and certified by many organizations including: DoD Quality Systems Manual (QSM) ELAP, National Environmental Laboratory Accreditation Conference (NELAC), American Society of Mechanical Engineers Nuclear Quality Assurance, Level -1 (ASME/NQA-1), and International Organization for Standardization/International Electrotechnical Commission (ISO/IEC) Guide 17025. The high standards built as part of GEL's QA program were directly applied to the handling, analysis, and data reporting associated with the smear samples generated by this project.

In addition, TPMC personnel routinely reviewed all data packages to ensure the completeness and accuracy of each of the sample reports. This review was performed with the express goal to ensure that the sample results received accurately and completely matched the parameters of the site's sample locations.

6.0 SUMMARY OF FIELD INVESTIGATION AND LABORATORY RESULTS

This section provides a summary of field and laboratory observations, results, data, and interpretation results associated with the site assessment. Summarized results of both field and laboratory activities are provided in Table 6-1. This is followed by a brief discussion of the supporting data that was obtained during this project. The supporting data is included in the appendices due to size limitations.

6.1 RESULTS SUMMARY

Table 6-1 provides a summary record of the data obtained in the field along with the corresponding analytical results from the GEL offsite analytical laboratory. Note that the shaded areas highlight those values exceeding Reg Guide 1.86 limits that are described in more detail in Section 6.2.3 and Table 6-3. The details of the survey locations and survey notes/high results narrative are provided in Appendix G, Field Data and Notes.

**Table 6-1
Summary Results Table**

Survey Location Number	Contamination					Exposure Rate	
	Direct Field		Removable / Smear			Surface Contact	One meter Above Surface
	(dpm/100 cm ²)		Lab (dpm/100 cm ²)			(μR/hr)	(μR/hr)
	α	β	α	β	Tritium		
Location / Area :Administration Building							
1	-7.2	-74.8	-	-	-	7	8
2	-13.8	-308.4	-	-	-	9	8
3	-20.4	-635.5	-	-	-	8	7
4	-0.7	196.3	-	-	-	8	7
5	-7.2	-158.9	-	-	-	10	10
6	5.9	2,411.2	ND	ND	-	17	16
6a	65.1	2,345.8	-	-	-		
6b	5.9	2,009.3	-	-	-	16	15
7	25.7	-457.9	-	-	-	10	9
8	-20.4	37.4	-	-	-	10	10
9	-13.8	-186.9	-	-	-	9	8
10	-0.7	-149.5	ND	ND	-	10	9
11	-0.7	-168.2	-	-	-	8	7
12	12.5	-18.7	-	-	-	8	7
13	-7.2	-588.8	-	-	-	8	7
14	5.9	-327.1	-	-	-	9	9
15	-7.2	158.9	ND	ND	-	10	10
16	-0.7	-74.8	-	-	-	9	10
17	5.9	-579.4	-	-	-	8	7
17a	25.7	-663.6	-	-	-	6	5
18	32.2	2,336.4	ND	ND	-	13	12
18a	45.4	2,383.2	-	-	-		
18b	-7.2	2,177.6	-	-	-		
19	65.1	1,551.4	ND	ND	-	11	11
19a	19.1	1,672.9	-	-	-		
19b	65.1	2,168.2	ND	ND	-	14	15
19c	19.1	2,037.4	-	-	-		
20	38.8	-168.2	-	-	-	10	9
21	19.1	-364.5	ND	ND	-	7	6

Survey Location Number	Contamination					Exposure Rate	
	Direct Field (dpm/100 cm ²)		Removable / Smear Lab (dpm/100 cm ²)			Surface Contact	One meter Above Surface
	α	β	α	β	Tritium	(μR/hr)	(μR/hr)
22	52.0	-149.5	ND	ND	-	9	9
23	65.1	-747.7	ND	ND	ND	4	4
24	-0.7	-560.7	ND	ND	-	4	4
25	25.7	-822.4	-	-	-	4	3
26	19.1	-700.9	-	-	-	4	3
27	19.1	-607.5	-	-	-	3	3
28	19.1	-570.1	ND	ND	-	4	3
29	12.5	-476.6	ND	ND	-	4	3
30	-0.7	-682.2	-	-	-	5	4
31	12.5	-682.2	ND	ND	ND	6	6
32	58.6	-495.3	ND	ND	-	6	5
33	71.7	2,009.3	ND	ND	-	11	10
33a	45.4	2,149.5	-	-	-		
33b	25.7	2,252.3	ND	ND	-	11	10
33c	45.4	1,915.9	-	-	-		
34	5.9	177.6	-	-	-	9	9
35	38.8	2,467.3	ND	ND	-	15	15
35a	12.5	1,897.2	-	-	-		
36	45.4	-299.1	ND	ND	-	7	6
37	25.7	168.2	ND	ND	-	8	8
38	19.1	46.7	ND	ND	-	8	8
39	52.0	56.1	ND	ND	-	9	10
40	32.2	-719.6	ND	ND	-	4	3
Location / Area : Shop/Storage							
41	5.9	476.6	ND	ND	-	11	11
42	25.7	289.7	ND	ND	-	9	9
43	32.2	-215.0	ND	ND	-	5	5
44	5.9	-112.1	ND	ND	ND	8	8
45	45.4	2,168.2	ND	ND	-	9	9
46	-27.0	-420.6	ND	ND	-	6	5
47	-7.2	-308.4	ND	ND	-	6	6
48	-7.2	-495.3	ND	ND	-	6	6

Background Measurements		
α (cpm)	β (cpm)	γ (μ R/hr)
4.1	240	7.2
Notes:		
Negative results occur when a previously determined counting instrument background value is subtracted from a sample value that is less than the background value. Negative values represent a portion of the statistical distribution of negative and positive values around zero for samples containing very little or no detectable radioactivity.		
ND - Analyte was analyzed for, but not detected above the detection limit. Detection limit is lower than the site assessment criteria shown in Table 6-2. Laboratory data package is provided in Appendix H.		
- Samples not collected.		
dpm – disintegrations per minute, cpm – counts per minutes, cm^2 – square centimeters μ R – microrentgen, hr - hour		
	= Results exceed the site assessment criteria shown in Table 6-2.	

The data in Table 6-1 was compared to Reg Guide 1.86 criteria and, where applicable, the data are highlighted to indicate values that exceeded the acceptable criteria. The criteria used to evaluate both field and laboratory analytical data is summarized in Table 6-2 below. Any exceedances from Table 6-1 are described in further detail in Section 6.2.3 and Table 6-3.

**Table 6-2
Site Assessment Criteria**

	Direct Measurements	Removable / Smear Measurements	Exposure Rates
Alpha (dpm/100 cm^2)	100	20	-
Beta (dpm/100 cm^2)	1000	200	-
Tritium (dpm/100 cm^2)	5000	1,000	-
Gamma (μ R/hr)	-	-	> 2-3 x Background
Note: Alpha, Beta, and Tritium values extracted from NRC Regulatory Guide 1.86 dpm – disintegrations per minute cpm – counts per minutes cm^2 – square centimeters μ R – microrentgen hr - hour			

6.2 FIELD INVESTIGATION RESULTS

6.2.1 Site Interviews / Visual Inspection

The ECP report did not indicate any previous radioactive commodities stored at the site. The team conducted a visual inspection of the site that resulted in no areas identified as suspect, or requiring additional investigation. The visual inspections and interviews verified that there were no radioactive commodities on site. The result of the visual inspection is documented in Appendix C.1, “Visual Inspection / Site Survey Checklist”.

In addition to the visual inspection, the Team Lead conducted a site interview with on-site POC, Tim Bastien. The results of these interviews are documented in the Survey Approach discussed in the following section. The interviews all resulted in no areas requiring additional survey or investigation.

6.2.2 Final Survey Approach

The survey approach included in Appendix C.2 provides the general survey methods used by the team. The team then included findings from the site interviews and visual inspections to the survey approach included in Appendix C.2 provides the general survey methods used by the team. The team then included findings from the site interviews and visual inspections to further refine the site-specific survey approach. This survey approach refinement took into account the review of the ECP, interviews conducted, and a visual inspection performed during facility walk-downs. Large area smears and exposure rate measurements were obtained in accessible facility areas to determine locations with radiation or radioactive material exceeding ambient background levels. A total of thirty (30) smears for alpha/beta analysis were taken in a representative cross section of the facility with a focus on those areas with the highest potential for contamination. In addition, 3 Tritium smears were taken. Fixed-point alpha and beta measurements were taken at each smear location with additional attention given to areas with previously stored radioactive commodities. Specific survey / smear sample locations are provided in Appendix G.4, "Survey Sketches". In addition Appendix C.2, Survey Approach Documentation Form was used to document changes or discoveries in the field that were used to refine the survey approach. No amendments were necessary for the Garrett USARC Site.

6.2.3 Field Measurements

All field measurements obtained by the survey team are included within Appendix G of this report. These measurements were documented in the site's Survey Record, Appendix G.2, where the following data was recorded.

- Total (fixed and removable) Alpha (cpm and dpm/100 cm²)
- Total (fixed and removable) Beta (cpm and dpm/100 cm²)
- Removable / Smear (cpm/100 cm² and dpm/100 cm²)
 - Note: This was a qualitative measurement used by field personnel that is superseded by analytical data received by GEL Laboratories.
- Removable Large Area Wipes (cpm)
- Area gamma radiation exposure rate measurements on contact and at one meter vertically off the floor (μR/hr)

The survey record tool was set up to convert "cpm" values to "dpm" using instrument specific calibration sheets, enabling the Field Team to see in real-time the corresponding field measurements in disintegrations per minute (dpm) for direct comparison with the Reg Guide 1.86 limits (Table 6-2).

In addition to the Survey Record, the Sample Description Log is included as Appendix G.3. This document provides additional description of the survey location in addition to the information provided in the Survey Record. Survey Sketches, Appendix G.5 are also included to provide a pictorial representation of the specific locations where direct measurements and smear samples were taken.

Although most of the survey results are indicative of background radiation levels and less than Reg Guide 1.86 limits, direct beta radiation field measurements exceeded these limits in sixteen

(16) locations in the administrative building and one (1) location in the shop / storage area. The readings at these seventeen locations are consistent with radioactivity levels from Naturally Occurring Radioactive Material (NORM) in building materials. More information regarding these samples is provided in Appendix G.4. Note that Appendix G.4 reflects the high results narrative as documented in the field. As a result, the qualitative alpha/beta smear results are included when initial results exceeded Reg. Guide 1.86 limits. Quantitative alpha/beta measurements associated with these locations are addressed in Section 6.3.

Table 6-3 provides a summary of the direct beta measurements exceeding the Reg Guide 1.86 limit of 1,000 dpm/100 cm² beta, and a narrative likely cause for these exceedances.

Table 6-3
Elevated Results Narrative

Survey / Sample Location (Refer to Table 6-1 and Survey Records in Appendix G.2)	Results Narrative
6 (1AB), 6a, 6b, 18 (4AB), 18a, 18b, 19 (5AB), 19a, 19b (6AB), 19c, 33 (14AB), 33a, 33b (15AB), 33c, 35 (16AB), 35a, 45 (27AB)	The elevated readings at these locations are indicative of NORM present in the ceramic floor tile. Additional measurements were taken in and around the area of like flooring materials for comparison, and these measurements were also elevated for fixed beta activity and consistent with NORM. In addition, the Team did not turn up any evidence indicating radioactive commodities were stored in these areas..

The field measurements at locations shown in Table 6-3 were all taken on tile floors. Tile flooring is often found to contain elevated concentrations of NORM which is typically present in the tile ceramic and/or glazing raw materials. Given this known condition (Reference Table B-1 in NUREG 1575 Appendix B Supp. 1) and the fact that instrument background measurements were taken in low exposure rate areas, it is not unexpected to find direct measurements on tile surfaces exceeding ambient background levels and the restrictive Reg Guide 1.86 limits. Based on the lack of radioactive materials use in these suspect areas and the uniform elevated direct beta radiation levels on like tile materials, it was determined the source of the elevated measurements was NORM and no further investigation was warranted.

These direct measurement results and related field historical/visual determinations are further supported by the smear results from the offsite analytical laboratory presented in the following section. For building materials with elevated NORM concentrations, it is expected that the removable residual concentrations will not be significantly elevated since the NORM is embedded in the tile/building material matrix. This is in contrast to building surfaces with high levels of radon progeny, which typically have elevated concentrations of removable activity when measured directly after sampling. Thus, low removable results coupled with elevated fixed beta measurements support the finding that they are indicative of NORM in building materials as the source of the elevated fixed beta measurements.

6.3 LABORATORY RESULTS

All laboratory results are included within Appendix H. In addition to the analytical results, this appendix includes: Certificate of Analysis Report, QC Summary, copy of CoC as received by the lab, Sample Receipt and Review Form, and a listing of GEL's current certifications.

These results, which were received from GEL Laboratories, support the initial team findings that there are no areas displaying radioactivity in excess of the respective actions levels. All sample results were less than the most restrictive Reg Guide 1.86 removable contamination limits of 20 dpm/100 cm² alpha, 200 dpm/100 cm² beta, or 1,000 dpm/100 cm² Tritium. As a result, no additional investigation was warranted.

7.0 CONCLUSIONS

All data collected and survey results support the conclusion that there is no evidence of radiological contamination or radioactive material present at the Garrett USARC Site. This information supports the conclusion that the Garrett USARC Site is considered radiologically non-impacted with respect to the MARSSIM guidance document.

8.0 RECOMMENDATIONS

TPMC recommends using the results of this BRAC Site Radiological Assessment as evidence that the Garrett USARC Site is free of excess radiological contamination and unsecured radioactive material. Thus the site can be considered radiologically non-impacted and available for unrestricted use relative to radiological hazards.

9.0 REFERENCES

Historical Documents

ECP, 2007, Environmental Condition of Property Report, at Rufus N. Garrett, Jr. U.S. Army Reserve Center, (AR009), El Dorado, AR, February 2007

TPMC Procedures

- FP01-R0-TPMC, Gamma Surveys, Effective 7/01/11
- FP02-R0-TPMC, Alpha Surveys, Effective 7/01/11
- FP05-R0-TPMC, Baseline Sampling and Background Determinations, Effective 7/01/11
- FP06-R0-TPMC, Environmental Sampling_BRAC, NO EFFECTIVE DATE/SIG
- FP07-R0-TPMC, Surface Soil Sampling, Effective 7/01/11
- FP09-R0-TPMC, Sample Identification Tracking, Effective 7/01/11
- FP10-R0-TPMC, Sample Container Preparation and Sample Preservation, Effective 7/01/11
- FP14-R0-TPMC, Low Level Radiation Exposure Rate of Dose Rate Surveys, Effective 7/01/11
- FP19-R0-TPMC, Calibration and Maintenance of Survey Instruments, Effective 7/01/11
- FP20-R0-TPMC, Handling, Storage, and Disposal of Radioactive Materials, Effective 7/01/11
- FP22-R0-TPMC, Radioactivity Check Source Accountability, Effective 7/01/11
- FP24-R0-TPMC, Alpha Counting, Effective 7/01/11
- FP25-R0-TPMC, Beta-Gamma Counting, Effective 7/01/11
- FP32-R0-TPMC, General Radiological Survey, Effective 7/01/11
- FP36-R0-TPMC, Radiation Work Permit, Effective 7/01/11
- TerranearPMC, LLC Corporate Environmental, Safety, and Health Program, Revision 3, August 2010
- BRAC Survey Approach Preparation / Documentation Procedure

Other References

DoD, DOE, USEPA, and Nuclear Regulatory Commission (NRC), 2000, *Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)*, NUREG-1575, Rev.1, EPA 402-R-97-016, Rev. 1, DOE/EH-0624, Rev. 1, August.

U.S. Atomic Energy Commission Regulatory Guide, NRC Reg Guide 1.86, *Termination Of Operating Licenses for Nuclear Reactors*, June 1974

APPENDIX A
HISTORICAL REVIEW CHECKLIST

<i>Title:</i>	Survey Approach Preparation / Documentation	<i>Doc No.</i>	BRAC-FP-01 Revision # 0
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SITE HISTORICAL DATA REVIEW

Validation of MARSSIM Appendix B Approach

BRAC Site: Garrett USARC, AR

Group Lead / Reviewer: Joe Wise

Date Reviewed: 9/25/2011

Brief historical summary:

This ECP covers the 2.83-acre USAR Center located at 815 West 8th Street in El Dorado, Arkansas. The property is bounded by 8th Street and a church to the north; Murphy Street, a residential area, and James Simpson's Garage to the west; 7th Street then residential areas to the south; and residential areas to the east.

The USAR Center is located on 2.83 acres of land with two permanent structures: a 14,400-square-foot Training Building and a 1,455-square-foot Storage Building. Both buildings were constructed in 1961 of concrete block with brick veneer on a concrete slab. During the Site reconnaissance, the painted surfaces were observed to be in good condition and no peeling paint was observed. The present-day Storage Building was originally constructed for use as an OMS. According to USAR personnel, the OMS was converted to the Storage Building in 2000 or 2001.

Historic uses of the USAR Center included administrative and educational operations, maintenance of military vehicles including vehicle washing, and an indoor firing range. The Site was historically used by reservists for drill activities on various weekends throughout the year. The indoor firing range was closed in 1996 by American Asbestos, Inc. Maintenance activities and vehicle washing ceased when the OMS was converted to the Storage Building in 2000 or 2001. The USAR Center was occupied in 2007 by Detachment 1 of the 321st Material Management Center.

Information related to past disposal and potential release of hazardous substances at the Site was compiled through review of available Site records, search of federal and state environmental databases, and interviews with USAR personnel. According to USAR personnel and Site records, the disposal of hazardous materials or hazardous wastes has not occurred on the Site.

<i>Title:</i>	Survey Approach Preparation / Documentation	<i>Doc No.</i>	BRAC-FP-01 Revision # 0
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Potential for radioactive commodity use, handling, or storage:

The ECP states that during the Site reconnaissance and records review process, no indications were found of past storage or use of radiological commodities at the USAR Center. However, due to the nature of the type of units that occupied here, it should be assumed that there was some low level radiological materials associated with the illumination of various types of military equipment (e.g., watch dials, compasses, aiming circles, etc). There is no evidence to suggest that any radiological commodities were ever improperly managed at the Site, or that any radionuclides were ever released.

Documents reviewed:

Final Environmental Condition of Property Report Rufus N. Garrett USARC, El Dorado, AR, February 2007.

Findings, if any:

No specific radiological concerns exist.

Conclusion:

Note: The following statement was included in our technical proposal – “TPMC expects that review of ECP reports, available HSAs, and other information gathered during due diligence will support the conclusion that the 30 BRAC sites may be assessed using the simplified procedure in Appendix B of MARSSIM”. The above review and resulting conclusion should address this.

The Environmental Condition of Property Report states that no indications were found of past storage or use of radiological commodities at the Rufus N. Garrett USARC. Therefore, the USAR Center qualifies for the simplified assessment procedure of Appendix B of MARSSIM.

APPENDIX B
SITE PHOTOS



Garrett USARC-Side of Main Building



Garrett USAR Rear Building



Garrett USARC-Rear Building



Garrett USARC-Main Building-front



Garrett USAR Main Building Location 33 kitchen with elevated beta readings



Garrett USARC-Main Building-Location 6 Shower with elevated beta reading



Garrett USARC-Main Building-Location 18 Latrine with elevated beta reading



Garrett USARC-Main Building-Location 19 latrine with elevated beta readings



Garrett USARC-Main Building-Location 35 latrine with elevated beta reading



Garrett USARC-Rear Building Location 45 latrine with elevated beta reading



Garrett USARC-Rear Building-Appears to be room where PRO Masks were stored in rear building



Garrett USARC-Rear Parking area with evidence of Connex or storage building

APPENDIX C
SITE WALKDOWN DATA SHEETS

C.1 – Visual Inspection / Site Survey Checklist

C.2 – Survey Approach

Visual Inspection Checklist

BRAC Site Location: Garrett USARC, El Dorado, AR
 Team Lead: Joe Wise

Date: 09/30/2011

Item #	Area of Review	Sat	Unsat	N/A
	<i>Key Indicators to look for</i>			
1	Stain spots in vault, storage, supply room. Could be indication of an instrument or equipment that broke at some point in the past.		X	
2	Presence of stored liquids.			X
3	Signs that may have radioactive material. (Exit Signs, etc.)			X
4	Any areas marked, or previously marked, with RAD signs.			X
5	Identified any radioactive commodities? (What are they, condition, etc?)			X
6	Problems accessing site? (Can't contact POC, scheduling conflict, etc.)			X
7	Any areas at site not accessible? (Locked Conex, area, storage cabinet, etc.)		X KEYS	
8	Any radioactive signage? (Is the radioactive commodity there or is it historical in nature)			X
	<i>Areas with higher potential of radiological components</i>			
9	Rooms that may have previously stored ammunition or explosives. (Could be an indication of potential DU.)			X
10	Medical rooms where x-ray equipment was stored or used.			X
11	Areas that CBRN detecting equipment may have been stored. (Storage, supply, vault)			X
12	Maintenance areas, especially where maintenance of big guns or missiles may have taken place.			X
13	Areas where geological survey team stored equipment. (Engineer and FA units sometimes had a team.)			X
14	Small arms storage areas. (Indication of Tritium site use and store.)	X		
15	NOTE: DU rounds are only common in large caliber guns such as 25MM Bradley, 50MM Gatlin Gun, and Tank Rounds. These rounds are service rounds and normally not used for training.			X
Comments: Item 1 had stains in the vault in area where items were stored which potentially had radioactive commodities. The survey approach indicates the additional attention with Tritium smears. Item 7 is addressed in Survey Workbook and Daily checklist.				

Name / Signature: JW

Survey Approach

Documentation Form

BRAC Site: Garrett USARC, El Dorado, AR

Date: 09/30/2011

Group Lead: Joe Wise

Personnel Interviewed:

Tim Bastien (870)918-6015 _____

Narrative documenting Baseline Survey Approach.

Note: Rationale should include references to Historical Documentation, Visual Inspections, and Interviews to provide adequate justification of the number and location of surveys / smears that will be taken.

Visual Inspections and historical documentation does not indicate any radioactive commodities. The only radioactive commodities known by the POC (who has been here 32 years) were a few compasses. Smears and readings will be taken in most rooms with additional attention given to supply rooms, vaults, cages, and supply building. Tritium smears to be taken where stains are: one in each vault, one in rear building.

Amended Survey Approach as needed:

Not needed for this site.

APPENDIX D
CHAIN OF CUSTODY RECORDS

Page: 1 of 1
 Project #: 34501-02
 GEL Quote #: GELP11-0697
 COC Number (1): _____
 PO Number: _____

GEL Chain of Custody and Analytical Request

GEL Laboratories, LLC
 2040 Savage Road
 Charleston, SC 29407
 Phone: (843) 556-8171
 Fax: (843) 766-1178

GEL Work Order Number: 287309

Client Name: TERRANEAR FMC Phone #: (860) 836-1046
 Project/Site Name: CARRETT USAR Fax #: _____
 Address: EL DORADO AR

Collected by: Randall Killpatrick Send Results To: DAN CAPUTO
 *For composites - indicate start and stop date/time

Sample ID	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code (2)	Field Filtered (3)	Sample Matrix (4)	TSCA Regulated		Total number of containers	Sample Analysis Requested (5) (Fill in the number of containers for each test)	Preservative Type (6)	Comments
						Radioactive	Should this sample be considered:				
T2 S2 L1 A1, 1AB → 22AB	9/30/11	1330	N	N	P			X	X		X (cross & TRITIUM)
T2 S2 L1 A1 10/1/11											
T2 S2 L2 A1, 23MB → 30AB	10/1/11	1215	N	N	P			X	X		
T2 S2 L1 A1 - T1	9/30/11	1215	N	N	P						
T2 S2 L1 A1 - T2	9/30/11	1226	N	N	P						
T2 S2 L2 A1 - T3	10/1/11	1145	N	N	P						

TAT Requested: Normal: _____ Rush: _____ Specify: _____ (Subject to Surcharge) Fax Results: Yes / No / _____
 Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4
 Sample Collection Time Zone: Eastern Pacific Other _____
 Remarks: Are there any known hazards applicable to these samples? If so, please list the hazards.
NO KNOWN HAZARDS.

Chain of Custody Signatures

Time	Received by (signed)	Date	Time
	<u>Randall Killpatrick</u>	10/1/11	9:25
2			
3			

GEL PM: LATOYA HUGHES
 Method of Shipment: FedEx Date Shipped: _____
 Airbill #: _____
 Airbill #: _____

1) Chain of Custody Number = Client Determined
 2) QC Codes: N = Normal Sample, TB = Trip Blank, FD = Field Duplicate, EB = Equipment Blank, MS = Matrix Spike Sample, MSD = Matrix Spike Duplicate Sample, G = Grab, C = Composite
 3) Field Filtered: For liquid matrices, indicate with a - Y - for yes the sample was field filtered or - N - for sample was not field filtered.
 4) Matrix Codes: DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, W=Water, SO=Soil, SD=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, P=Wipe, U=Urine, F=Fecal, N=Nasal
 5) Sample Analysis Requested: Analytical method requested (i.e. 8260B, 6010B/7470A) and number of containers provided for each (i.e. 8260B - 3, 6010B/7470A - 1).
 6) Preservative Type: HA = Hydrochloric Acid, NI = Nitric Acid, SH = Sulfuric Acid, AA = Ascorbic Acid, HX = Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank

For Lab Receiving Use Only
 Custody Seal Intact? YES / NO
 Cooler Temp: 22 C

WHITE = LABORATORY
 YELLOW = FILE
 PINK = CLIENT

APPENDIX E
DAILY REPORTS

DAILY REPORTS WERE GENERATED THROUGHOUT THE DURATION OF PROJECT. HOWEVER, ONLY DAILY REPORTS PERTAINING TO GARRETT USAR SITE IS PROVIDED HERE.

Name of Contract BRAC 2 – Radiological Site AssessmentsName of Contractor Terranear PMC

DAILY STATUS REPORT & PLANNED WEEKEND ACTIVITIES

Summary of Current Site Activities & Planned Weekend Activities

TPMC has mobilized each of the three (3) field teams and has begun performance of Radiological Site Assessments for 30 BRAC sites located across the country. Below is a summary of each Team's activities.

Sites Visited / Activities:

Team #1 /

Wrap up Niagara Falls USARC/AMSA 76 paperwork and travel to Springfield, MA to prepare for site assessments to be performed at Mac Arthur USARC and Middleton USARC sites. These are both scheduled for next week.

Team #2 /

Garret USARC, Edlorado, AR: The team began field work one day earlier than scheduled since they decided to travel on the evening of September 29th. Interviews and visual inspections have been performed. Field measurements have begun with nothing unusual to report except the team is unable to gain access to the back building. This building, which appears to be supply building, is locked. The POC is working to resolve this for the Team. There is no indication that this area was ever used to handle radiological material. The team will follow-up on this.

Saturday, October 1st - The team will wrap up all field activity including following up on the back building access issue to successful resolution. Every effort will be made to gain access to this area. If the team is not granted access, then TPMC will review all available data and determine if it is sufficient to adequately assess the site.

Sunday, October 2nd – Travel to next site. Destination is Marshall USARC unless TPMC gets confirmation that the Kansas Army Ammunition Plant has been added to the SOW.

Team #3 /

Allen Hall USARC, Tuscon, AZ: The team continued with field measurements today and is planning to wrap up all field activities today. Elevated readings were obtained over a wide spread area. Early indications are that this is attributed to NORM. TPMC is following up on this by taking additional measurements and taking a closer look at area specific background readings.

Saturday, October 2nd – Travel to next site. Destination is Deer Valley USARC #2.

Individuals Onsite / Customer Interaction / Visitors

TPMC personnel / Customer Interaction

Team #1: Team Lead – Ted Adams; Shipper – Dave Goddard; RCT – Marty Willett

Team #2: Team Lead – Joe Wise; RCT / Shipper – Randal Killpack; Field Support – Jesus Jaramillo

Team #3: Team Lead – Dr. Stan Stevens; Shipper – Melinda Soest; RCT – William Carey

Customer Interaction

Team #1: None

Team #2: Ron Hancock

Team #3: Roger Avis / Herb Cline, onsite POCs.

Name of Contract BRAC 2 – Radiological Site Assessments

Name of Contractor Terranear PMC

DAILY STATUS REPORT & PLANNED WEEKEND ACTIVITIES

Weather Related / Other Impacts

Team #1 /

None to report.

Team #2 /

TPMC is positioned to include the Kansas Army Ammunition Plant but needs confirmation prior to proceeding. If authorized, TPMC will plan to travel to Parsons, KS. Otherwise, the team will follow the current schedule and travel to Marshall, TX for the Marshall USARC site.

Team #3 /

None to report.

Planned Activities (Following Monday)

Team #1 /

Mac Arthur / Middleton USARC Sites: Begin site visual inspections and interviews with personnel to develop Survey Approach for each site. Plan to begin taking direct measurements and smears as time permits.

Team #2 /

Marshall USARC unless TPMC gets confirmation that the Kansas Army Ammunition Plant has been added to the SOW. – Regardless of the destination, the team will begin field visual inspections and conduct interviews with site personnel.

Team #3 /

Deer Valley USARC #2, Phoenix, AZ - Begin site visual inspections and interviews with personnel to develop Survey Approach for each site. Plan to begin taking direct measurements and smears as time permits.

Significant Findings including Problems Encountered / Deviations

None

Note: Schedule related problems are identified above under “Weather / Other Impacts”.

PROJECT No. USA 2011-076

Report No: 4

Date: 9/30/11 thru 10/2/11

Name of Contract BRAC 2 – Radiological Site Assessments

Name of Contractor Terranear PMC

DAILY STATUS REPORT & PLANNED WEEKEND ACTIVITIES

Listing of Attached Documents / Figures

None

Prepared by: Frank A. Tarantello /  / 9/30/2011

Name / Signature / Date

APPENDIX F
QUALITY CONTROL DATA

F.1 – Operating Range

F.2 – Instrument Daily Checks

F.3 – Instrument Calibration Sheets

Initial Alpha, Beta-Gamma and Exposure Rate Operating Range

Team No. : 2

ALPHA Instrument				BETA Instrument			
Date	09/30/11	Technician / Initials	RK	Date	09/30/11	Technician / Initials	RK
Instrument Model #	Ludlum 2360	Detector Model #	Ludlum 43-89	Instrument Model #	Ludlum 2360	Detector Model #	Ludlum 43-89
Instrument Serial #	164680	Detector Serial #	145391	Instrument Serial #	164680	Detector Serial #	145391
Instrument Cal Due	09/06/12	Detector Cal Due	09/06/12	Instrument Cal Due	09/06/12	Detector Cal Due	09/06/12
Source Isotope	Th-230	Det Active Area (cm ²)	100	Source Isotope	Tc-99	Det Active Area (cm ²)	100
Source ID #	099605	Source Activity (μCi)	0.009162162	Source ID #	119649	Source Activity (μCi)	0.0020485
Background cpm 1	4	Source gcpm 1	2355	Background cpm 1	230	Source gcpm 1	657
Background cpm 2	7	Source gcpm 2	2318	Background cpm 2	214	Source gcpm 2	635
Background cpm 3	3	Source gcpm 3	2298	Background cpm 3	197	Source gcpm 3	579
Background cpm 4	4	Source gcpm 4	2337	Background cpm 4	213	Source gcpm 4	685
Background cpm 5	0	Source gcpm 5	2464	Background cpm 5	284	Source gcpm 5	640
Background cpm 6	6	Source gcpm 6	2367	Background cpm 6	270	Source gcpm 6	629
Background cpm 7	5	Source gcpm 7	2372	Background cpm 7	276	Source gcpm 7	639
Background cpm 8	4	Source gcpm 8	2330	Background cpm 8	213	Source gcpm 8	608
Background cpm 9	4	Source gcpm 9	2430	Background cpm 9	221	Source gcpm 9	635
Background cpm 10	4	Source gcpm 10	2364	Background cpm 10	282	Source gcpm 10	673
Average Bckgrd cpm	4.1	Average Source gcpm	2,363.5	Average Bckgrd cpm	240.0	Average Source gcpm	638.0
Detector Efficiency	0.152	Lower Range (gcpm) -20%	1891	Detector Efficiency	0.107	Lower Range (gcpm) -20%	510
Cable Length (ft)	5	Upper Range (gcpm) +20%	2836	Cable Length (ft)	5	Upper Range (gcpm) +20%	766
Direct Alpha Action Level (gcpm)	34.5			Direct Beta Action Level (gcpm)	347.0		

Gamma/Exposure Rate Instrument			
Date	09/30/11	Technician / Initials	RK
Instrument Model #	Ludlum 19	Source Isotope	Cs-137
Instrument Serial #	209746	Source ID #	19457
Instrument Cal Due	07/18/12	Source Activity (μCi)	4.86
Background μR/hr 1	7	Source μR/hr 1	19
Background μR/hr 2	7	Source μR/hr 2	18
Background μR/hr 3	7	Source μR/hr 3	18
Background μR/hr 4	8	Source μR/hr 4	18
Background μR/hr 5	7	Source μR/hr 5	17
Background μR/hr 6	7	Source μR/hr 6	18
Average Bckgrd μR/hr	7.2	Average Source μR/hr	18.0
		Lower Range (μR/hr) -20%	14.4
		Upper Range (μR/hr) +20%	21.6

Exposure Rate Meter Manufacturer	Ludlum	Model #	Ludlum 19	Serial #	209746	Cal Due Date	7/18/2012
Detector / Probe Manufacturer	Ludlum	Model #	Ludlum 43-89	Serial #	145391	Cal Due Date	9/6/2012
Instrument / Meter Manufacturer	Ludlum	Model #	Ludlum 2360	Serial #	164680	Cal Due Date	9/6/2012
Alpha Source #	099605	Isotope	Th-230	Activity (µCi)	0.009162162	± 20% Range	1891-2836
Beta Source #	119649	Isotope	Tc-99	Activity (µCi)	0.0020485	± 20% Range	510-766
Gamma Source #	19457	Isotope	Cs-137	Activity (µCi)	4.86	± 20% Range	14-22
Detector/ Probe Efficiency (α) :	0.152	Detector/Probe Efficiency (β) :	0.107				

Date	Time	Instrument Physical Check Sat (Y / N)	Instrument Detector in Calibration (Y / N)	Battery Check Sat (Y / N)	Background Alpha (cpm)	Background Beta (cpm)	Background Gamma (µR/hr)	Source Alpha (cpm)	Source Beta (cpm)	Source Gamma (µR/hr)	Response Chk - Init Net Value (cpm, µR)	Response Chk - End Net Value (cpm, µR)	Response Check OK? Technic. Initials
09/30/11	9:18 AM	Y	Y	Y	4.1	240	N/A	2404	680	N/A	2399.9, 440.0	N/A	RK
	4:32 PM	Y	Y	Y	3.2	224	N/A	2280	615	N/A	N/A	2276.8, 391.0	RK
09/30/11	9:18 AM	Y	Y	Y	N/A	N/A	7	N/A	N/A	18	11	N/A	RK
	4:32 PM	Y	Y	Y	N/A	N/A	7	N/A	N/A	19	N/A	12	RK
10/01/11	8:30 AM	Y	Y	Y	2.1	202.6	N/A	2249	638	N/A	2246.9, 435.4	N/A	RK
	1:27 PM	Y	Y	Y	2.4	176.2	N/A	2551	629	N/A	N/A	2548.6, 452.8	RK
10/01/11	8:30 AM	Y	Y	Y	N/A	N/A	7	N/A	N/A	18	12	N/A	RK
	1:27 PM	Y	Y	Y	N/A	N/A	6	N/A	N/A	19	N/A	13	RK

Alpha and beta background and source counts are measured for one minute



EnergySolutions Services, Inc.
 1570 Bear Creek Road
 Oak Ridge, TN 37830
 Phone: (877) 462-4873
 Fax: (865) 220-1346

**CALIBRATION
 CERTIFICATE**

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name: EnergySolutions Services, Inc.		Manufacturer: Ludlum	
Address: 1570 Bear Creek Road Oak Ridge, TN 37830		Model: 2360	Serial Number: 164680
Contact Name: Tony Riggs		Probe: N/A	Serial Number: N/A
Customer Purchase Order Number: N/A	Work Order Number: 2011-11700	Calibration Method: Electronic	

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Ratemeter Response ($\pm 10\%$ of Standard Values)		Calibration Standard Value CPM	Time Base (minutes)	Tolerances (cpm) $\pm 2\%$	Scaler Response	
		As Found	As Left				As Found	As Left
X 1	100	100	100	1,000 CPM	0.1	90 - 110	100	100
X 1	250	250	250	1,000 CPM	0.5	450 - 550	500	500
X 1	400	400	400	1,000 CPM	1	900 - 1,100	998	998
X 10	1,000	1,000	1,000	1,000 CPM	2	1.8K-2.2K	1,991	1,991
X 10	2,500	2,500	2,500	1,000 CPM	5	4.5K-5.5K	4,978	4,978
X 10	4,000	4,000	4,000	1,000 CPM	10	9K-11K	9,955	9,955
X 100	10,000	10,000	10,000					
X 100	25,000	25,000	25,000					
X 100	40,000	40,000	40,000					
X 1000	100,000	100,000	100,000	Calibrated in accordance with OEM Technical Manual				
X 1000	250,000	250,000	250,000					
X 1000	400,000	400,000	400,000					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology. (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument	
Calibrated By: <i>M. Paul</i>	Reviewed By: <i>Jeff Dukewicz</i> Date: <i>9/6/11</i>
Calibration Date: 09/06/2011	*Calibration Due (6mo): 03/06/2012
	*Calibration Due (12mo): 09/06/2012

* Calibration due date is dependant on users regulatory requirements.

Model: 2360

Serial Number: 164680

M&TE				Environmental Conditions							
Volt Meter	ID#	94710023	Cal Due:	10/28/2011	Barometer	ID# 3590	Cal Due: 09/21/11				
Pulser	ID#	112860	Cal Due:	04/26/2012	Thermometer	ID# 3590	Cal Due: 09/21/11				
Humidity	ID#	958670	Cal Due:	06/07/2012	Temp: 22.4 °C	Pressure: 731 mmHg	Humidity: 72%				
Special Test											
BAT Check		Sat (✓) Unsat ()		Geotropism		Sat (✓) Unsat ()					
LCD Display Check		Sat (✓) Unsat ()		Audio Check		Sat (✓) Unsat ()					
Mechanical Zero		Sat (✓) Unsat ()		Low BAT Set		Sat (✓) Unsat ()					
Reset		Sat (✓) Unsat ()									
HV Analog Display		Sat (✓) Unsat ()		As Found		As Left					
High Voltage Calibration (± 10%)				Alpha Sensitivity =		140 mv		Alpha Sensitivity =		120 mv	
Voltage	Tolerance	As Found	As Left	Beta Sensitivity =		3.7 mv		Beta Sensitivity =		3.5 mv	
500	450-550	503	503	Beta Window =		32 mv		Beta Window =		30 mv	
1000	900-1100	1003	1003	Beta Setpoints—Pulser counts detected at 3.5mv ± 1mv and shut off at 30mv for beta. For Alpha channel counts detected at 120mv and above.							
1500	1350-1650	1507	1507								
H.V. Set With Detector Not Connected						Overload to be set with detector to be used					
COMMENTS											
<p>Calibrated in accordance with OEM Technical Manual</p> <p>See detector certificate for High Voltage setting</p> <p>**Calibrated with 5ft cable**</p>											
Instrument											
Calibrated By: <i>M. Paul</i>						Reviewed By: <i>Jeff Dakin</i> Date: <i>9/6/11</i>					
Calibration Date: 09/06/2011						*Calibration Due (6mo): 03/06/2012					
						*Calibration Due (12mo): 09/06/2012					

* Calibration due date is dependant on users regulatory requirements.



**CALIBRATION
CERTIFICATE**

Duratek Instrument Services
628 Gallaher Road
Kingston, TN 37763
Phone: (865) 376-8337
Fax: (865) 376-8331

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name: Duratek Instrument Services		Manufacturer: Ludlum	
Address: 628 Gallaher Rd Kingston, TN 37763		Model: 19	Serial Number: 209746
Contact Name: Tony Riggs		Probe: N/A	Serial Number: N/A
Customer Purchase Order Number: N/A	Work Order Number:	Calibration Method: Electronic And Source	

INSTRUMENT CALIBRATION INFORMATION					
Range (µR/hr)	Calibration Standard Value	Tolerances (µR/hr)	Instrument Response		Comments
			As Found (µR/hr)	As Left (µR/hr)	
5000 Black	4000 µR/hr	3600 - 4400	3,800	3,800	Pulser: 100272 Cal Due: 12-17-12
	2500 µR/hr	2250 - 2750	2,500	2,500	DVM: 93950304 Cal Due: 7/14/12
	1000 µR/hr	900 - 1100	1,000	1,000	D-814: 3590 Cal Due: 9/21/11
500 Black	400 µR/hr	360 - 440	400	400	Humidity: 958670 Cal Due: 006/07/12
	250 µR/hr	225 - 275	250	250	Temp: 21.5°C Humidity: 46.7%
	Input cpm = 19,300	90 - 110	100	100	Pressure: 744 mmHg
250 Red	Input cpm = 38,600	180 - 220	200	200	
	Input cpm = 23,160	108 - 132	120	120	Geotropism: SAT Over Range: SAT
	Input cpm = 9,650	45 - 55	50	50	Batteries: SAT Mech. Zero: SAT
50 Black	Input cpm = 7,720	36 - 44	42	40	F/S Response: SAT Audio: SAT
	Input cpm = 4,825	22.5 - 27.5	26	25	Light: SAT
	Input cpm = 1,930	9 - 11	10	10	
25 Red	Input cpm = 3,860	18 - 22	20	20	Source: Cs-137 049711 Cert. Date: 07/09/11
	Input cpm = 2,316	10.8 - 13.2	12	12	High Voltage As Found: 675V As Left: 675V
	Input cpm = 965	4.5 - 5.5	5	5	cpm/µR/hr: As Found: 185 As Left: 185

Precision Test—Reading 1: 2,500 2: 2,500 3: 2,500 Mean: 2,500 Precision Test: SAT

COMMENTS

Special Remarks: High Voltage: 675Volts 185 cpm/µR/hr

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology. (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument

Calibrated By: *Ben Veach*

Reviewed By: *[Signature]*

Date: *7/19/11*

Calibration Date: 07/18/2011

Calibration Due: 07/18/2012



**CALIBRATION
CERTIFICATE**

EnergySolutions Services, Inc.
628 Gallaher Road
Kingston, TN 37763
Phone: (877) 462-4873
Fax: (865) 376-8331

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION			DETECTOR INFORMATION			
Customer Name: EnergySolutions- Instrument Services			Manufacturer: Ludlum			
Address: 1570 Bear Creek Road Oak Ridge, TN 37830			Detector Model: 43-89			
Contact Name: Tony Riggs			Serial Number: 145391			
Customer Purchase: Order Number: N/A		Work Order Number: 2011-11700		Evaluation Method: Source		
DETECTOR EVALUATION INFORMATION						
Source Nuclide	Serial Number	Activity (dpm)	2 Pi Emissions	Net Response (cpm)	Efficiency (%)	
*Pu-239	019442	13,607	N/A	2,881	21.2% (4pi)	*N/A (2pi)
Th-230	099605	20,340	9,480/ min	3,095	15.2% (4pi)	32.6% (2pi)
Tc-99	099608	21,311	10,500/ min	2,273	10.7% (4pi)	21.6% (2pi)
SCALER INFORMATION			DETECTOR INFORMATION			
Model	Serial Number	Due Date	Background	Operating Voltage	Threshold	
2360	164680	09/06/2012	2.4	700V	Alpha (120mV)	
2360	164680	09/06/2012	207	700V	Beta (3.5-30mV)	
ATTACHMENTS						
Voltage Plateau: <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		MDA/Cross Talk Evaluation: <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO				
COMMENTS			LINEARITY TEST			
* No 2pi emission rate is listed on the source certificate. Linearity test performed with Tc-99 #099608. Calibrated with 5ft cable Calibrated in accordance with original equipment technical manual.			Count 1 (Toe)	2,396		
			Count 2 (Mid)	2,658		
			Count 3 (Heel)	2,387		
			Average	2,480		
			Pass/Fail	PASS (+/-15% Tolerance per LMI)		
STATEMENT OF CERTIFICATION						
We Certify that the detector listed above was evaluated for proper operation prior to shipment and that it met all the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology. (We are not responsible for damage incurred during shipment or use of this detector).						
Detector						
Certified By: <i>M. Paul</i>		Reviewed By: <i>Jeff Robinson</i>			Date: 9/6/11	
Certification Date: 09/06/2011		*Certification Due (6mo): 03/06/2012				
		*certification Due (12mo): 09/06/2012				

* Calibration due date is dependant on users regulatory requirements.



CALIBRATION

CERTIFICATE

EnergySolutions Instrument Services
 1570 Bear Creek Road
 Oak Ridge, TN 37830
 Phone: (877) 462-4873
 Email: ISFstaff@energysolutions.com

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION				DETECTOR INFORMATION			
Customer Name: EnergySolutions Instrument Services				Manufacturer: Ludlum			
Address: 1570 Bear Creek Road Oak Ridge, TN 37830				Detector Model: 43-89			
Contact Name: Tony Riggs				Serial Number: 145391			
Customer Purchase Order Number: N/A		Work Order Number: 2011-11700		Evaluation Method: Source			
DETECTOR EFFICIENCY/RESPONSE/PRECISION INFORMATION							
1) Nuclide: SrY-90		Serial Number: 129676		Activity (dpm) : 13,013		2pi Emissions: 9,166/min	Certification Date: 05/12/2003
Geometry --On Contact		Gross CPM	Net CPM	4pi Efficiency (%)	2pi Efficiency (%)		
Source 1		3,134	2,927	22.5%	31.9%		
INSTRUMENT USED TO DETERMINE EFFICIENCY				DETECTOR INFORMATION			
<u>Model</u>		<u>Serial Number</u>		<u>Due Date</u>		<u>Background (cpm)</u>	<u>Operating Voltage</u>
2360		164680		09/06/2012		207	700V
COMMENTS							
Efficiency done using 5ft cable.							
STATEMENT OF CERTIFICATION							
We Certify that the detector listed above was evaluated for proper operation prior to shipment and that it met all the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology. (We are not responsible for damage incurred during shipment or use of this detector).							
Detector							
Certified By: <i>M. Paul</i>				Reviewed By: <i>Jeff Robinson</i>		Date: 7/6/11	
Certification Date: 09/06/2011				Certification Due: 09/06/2012			

APPENDIX G
FIELD DATA AND NOTES

G.1 – Daily Checklists

G.2 – Survey Records

G.3 – Sample Description Logs

G.4 – High Results Narrative

G.5 – Survey Sketches

G.6 – Daily Log

Daily Checklist / Briefing

BRAC Site Location: Garrett USAR, El Dorado, AR

Date: 09/30/2011

Team Lead: Joe Wise

Team Members:

Joe Wise

Randall Killpack

Jesus Jaramillo

BRAC POCs (Name / Contact #):

David Lenderman (501)442-1771

Aaron Ward (870)863-2003

Tim Bastien

Item #	Area of Review	Sat	Unsat	N/A
	<i>Health / Safety Communication</i>			
	Communication / Emergency Contact			
1	Team Personnel / RSO contact info available.	X		
2	Communication Protocol with Client	X		
3	Local / Site Emergency Procedures	X		
	H&S/Rad Topics			
4	Unique Industrial Hazards (i.e. Be, Asbestos, Heights)	X		
5	Weather Related (Wind, Heat, Flooding)	X		
6	Animals / Insects	X		
7	Radiation Work Permit (i.e. Rad conditions, PPE)			X
	<i>Task / Topics</i>			
	General Task Topics			
1	Site POC contacted to discuss site specific hazards	X		
2	Calibration Sources and survey instrumentation in hand	X		
3	Materials checked against inventory	X		
4	Site Interviews conducted	X		
5	Visual inspection conducted	X		
6	Documented Survey Approach completed in the field.	X		
7	Surveys taken per documented survey approach.	X		
8	Smears packaged and shipped to offsite laboratory (GEL).	X		
9	Secondary Waste or Rad material/items packaged/disposed properly.	X		
10	QA/QC of Survey forms completed & Survey Data Sheets transmitted.			
11	Anomalous readings? Explain actions taken to address.	X		
12	Any residual radiation detected, not attributed to NORM to Radon. Explain actions taken to address.	X		
	Preparation for follow-on activities			
13	Calibration Source Inventory / package / prep for transport			X
14	Transport materials, instruments, & sources to next location			X
15	Any indications of radioactive material or residual activity above Reg. Guide 1.86 limit. If this is unsatisfactory, then the Team Lead must obtain authorization prior to demobing from the work site.		X	
16	All areas minimally inspected if not surveyed	X		
	Documentation / Forms to be completed			

17	Visual Inspection Checklist	X		
18	Survey Approach Record		X	
19	Daily Checklist / Briefing (This Form)	X		
20	Survey Record File <ul style="list-style-type: none"> - Efficiency and Operating Range - Daily instrument performance check log - Radiological Survey Record - Daily Log - Smear / Measurement Location Descriptions - High Results Narrative - Sketches 		X	
21	Radiation Work Permit			X
Daily Briefing / Data Transfer				
	Transmit completed data sheets to: <ul style="list-style-type: none"> - Frank Tarantello: fatarantello@energysolutions.com - Kinshuk Shroff: kshroff@terraneapmc.com 		X	
	Provide briefing via daily scheduled teleconference.	X		
Miscellaneous Notes: Accomplishments for day; additional actions needed; issues overcome; general notes of days activities; status of work at close of business day.				
Arrived on site, interviewed POC, accessed all areas except the rear building, and conducted surveys on accessible areas. Continuing to try to gain access to the rear building. Survey Approach assumes all areas will be accessed, record not complete or documented. All locations with elevated beta readings are on ceramic/porcelain tile. Additional readings to be taken. Survey workbook to be completed later and data sheets transmitted later.				

Name / Signature: Joe Wise

Daily Checklist / Briefing

BRAC Site Location: Garrett USAR, El Dorado, AR

Date: 10/1/2011

Team Lead: Joe Wise

Team Members:

Joe Wise

Randall Killpack

Jesus Jaramillo

BRAC POCs (Name / Contact #):

David Lenderman (501)442-1771

Aaron Ward (870)863-2003

Tim Bastien

Item #	Area of Review	Sat	Unsat	N/A
	<i>Health / Safety Communication</i>			
	Communication / Emergency Contact			
1	Team Personnel / RSO contact info available.	X		
2	Communication Protocol with Client	X		
3	Local / Site Emergency Procedures	X		
	H&S/Rad Topics			
4	Unique Industrial Hazards (i.e. Be, Asbestos, Heights)	X		
5	Weather Related (Wind, Heat, Flooding)	X		
6	Animals / Insects	X		
7	Radiation Work Permit (i.e. Rad conditions, PPE)			X
	<i>Task / Topics</i>			
	General Task Topics			
1	Site POC contacted to discuss site specific hazards	X		
2	Calibration Sources and survey instrumentation in hand	X		
3	Materials checked against inventory	X		
4	Site Interviews conducted	X		
5	Visual inspection conducted	X		
6	Documented Survey Approach completed in the field.	X		
7	Surveys taken per documented survey approach.	X		
8	Smears packaged and shipped to offsite laboratory (GEL).	X		
9	Secondary Waste or Rad material/items packaged/disposed properly.	X		
10	QA/QC of Survey forms completed & Survey Data Sheets transmitted.			
11	Anomalous readings? Explain actions taken to address.	X		
12	Any residual radiation detected, not attributed to NORM to Radon. Explain actions taken to address.	X		
	Preparation for follow-on activities			
13	Calibration Source Inventory / package / prep for transport	X		
14	Transport materials, instruments, & sources to next location	X		
15	Any indications of radioactive material or residual activity above Reg. Guide 1.86 limit. If this is unsatisfactory, then the Team Lead must obtain authorization prior to demobing from the work site.		X	
16	All areas minimally inspected if not surveyed	X		
	Documentation / Forms to be completed			

17	Visual Inspection Checklist	X		
18	Survey Approach Record	X		
19	Daily Checklist / Briefing (This Form)	X		
20	Survey Record File <ul style="list-style-type: none"> - Efficiency and Operating Range - Daily instrument performance check log - Radiological Survey Record - Daily Log - Smear / Measurement Location Descriptions - High Results Narrative - Sketches 		X	
21	Radiation Work Permit			X
Daily Briefing / Data Transfer				
	Transmit completed data sheets to: <ul style="list-style-type: none"> - Frank Tarantello: fatarantello@energysolutions.com - Kinshuk Shroff: kshroff@terraneapmc.com 		X	
	Provide briefing via daily scheduled teleconference.	X		
Miscellaneous Notes: Accomplishments for day; additional actions needed; issues overcome; general notes of days activities; status of work at close of business day.				
Did not gain access to rear building until the second day. All areas surveyed and inspected by the second day. Survey workbook in process of being completed and will be transmitted later. All of the elevated beta readings were on ceramic/porcelain tile. A second reading was taken and which stayed consistent. This would be indicative of NORM. Additional readings will be taken tomorrow.				

Name / Signature: Joe Wise

TerranearPMC Radiological Survey Record

Date : 09/30/11 Team No. : 2
 Site Name : Garrett USARC Survey No. : T2S2L1A1

Survey Description : Direct, wet and dry wipe, micorR, and large area wipe surveys to provide determine the radiological condition of the building.

Location / Area : Administration Building

Meter/Probe Model	Meter/Probe Serial #	Probe Active Area (cm ²)	Cal. Date	Efficiency (c/d)			Background (cpm or μ R/hr)			MDA (dpm/100 cm ²)	
				α	β	γ	α	β	γ	α	β
Ludlum 43-89	145391	100	09/06/11	0.152	0.107	N/A	4.1	240.0	N/A	63.8	524.9
Ludlum 19	209746	N/A	07/18/11	N/A	N/A	N/A	N/A	N/A	7.2	N/A	N/A

Instrument Ludlum 43-89 (sn #145391) with Ludlum 2360 (sn# 164680)

Notes: For MDA calculations, the background sample time is assumed to be 10 minutes and source time 1 minute

	Contamination												Exposure Rate	
	Direct Field (gcpm)			Removable / Smear Field (cpm / 100 cm ²)			Removable Lg Area Wipe Field (cpm)			Removable / Smear Lab (dpm / 100 cm ²)			Contact (μ R/hr)	One meter elevation (μ R/hr)
	α	β	γ	α	β	γ	α	β	γ	α	β	γ		
1	232	-7.2	-74.8										7	8
2	207	-13.8	-308.4										9	8
3	172	-20.4	-635.5										8	7
4	261	-0.7	196.3										8	7
5	223	-7.2	-158.9										10	10
6	498	5.9	2,411.2	4	185	-0.7	-514.0			1AB	1AB		17	16
6a	491	65.1	2,345.8											
6b	455	5.9	2,009.3										16	15
6c								9	252					
7	191	25.7	-457.9										10	9
8	244	-20.4	37.4										10	10
9	220	-13.8	-186.9										9	8
10	224	-0.7	-149.5	4	189	-0.7	-476.6			2AB	2AB		10	9
10a								6	231					
11	222	-0.7	-168.2										8	7
12	238	12.5	-18.7										8	7

Survey Notes: Large area wipes should be approximately 1 m² or greater in area. Ludlum 43-89 w/ active area of 100 cm² is assumed in direct field dpm/100cm² calculations.

Dose rates were collected in every room.

* Removable/Smear Field values are qualitative measurements.

U - Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

Surveyed by: Randall Killpack RK 9/30/2011
 Name Initial Date
 Reviewed by: Joe Wise JW 9/30/2011

Radiological Survey Form

(continuation sheet)

Date : 09/30/11 Team No. : 2
 Site Name : Garrett USARC Survey No. : T2S2L1A1

Name Initial Date

Survey Description : Direct, wet and dry wipe, micorR, and large are wipe surveys to provide determine the radiological condition of the building.

Location / Area : Administration Building

Survey	Contamination												Exposure Rate			
	Direct (cpm)		Direct Field (dpm / 100 cm ²)		Removable / Smear (cpm / 100 cm ²)		Removable Lg Area Wipe Field (cpm)		Removable / Smear Lab (dpm / 100 cm ²)		Contact (μR/hr)	one meter (μR/hr)				
	α	β	α	β	α	β	α	β	α	β	α	β	α	β		
13	3	177	-7.2	-588.8											8	7
14	5	205	5.9	-327.1											9	9
15	3	257	-7.2	158.9	4	176	-0.7	-598.1	3AB	3AB				10	10	10
16	4	232	-0.7	-74.8											9	10
17	5	178	5.9	-579.4											8	7
17a	8	169	25.7	-663.6											6	5
18	9	490	32.2	2,336.4	4	190	-0.7	-467.3	4AB	4AB				13	12	12
18a	11	495	45.4	2,383.2												
18b	3	473	-7.2	2,177.6												
19	14	406	65.1	1,551.4	2	176	-13.8	-598.1	5AB	5AB				11	11	11
19a	7	419	19.1	1,672.9												
19b	14	472	65.1	2,168.2	3	164	-7.2	-710.3	6AB	6AB				14	15	15
19c	7	458	19.1	2,037.4												
20	10	222	38.8	-168.2											10	9
21	7	201	19.1	-364.5	3	174	-7.2	-616.8	7AB	7AB				7	6	6
22	12	224	52.0	-149.5	3	169	-7.2	-663.6	8AB	8AB				9	9	9
23	14	160	65.1	-747.7	0	194	-27.0	-429.9	9AB	9AB			T1	4	4	4
23a								14	179							
24	4	180	-0.7	-560.7	6	183	12.5	-532.7	10AB	10AB				4	4	4
25	8	152	25.7	-822.4										4	3	3
26	7	165	19.1	-700.9										4	3	3
27	7	175	19.1	-607.5										3	3	3

Survey Notes:
 Large area wipes should be approximately 1 m² or greater in area.
 Ludlum 43-89 w/ active area of 100 cm² is assumed in direct field dpm/100cm² calculations.
 Dose rates were collected in every room.
 * Removable/Smear Field values are qualitative measurements.
 U - Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

Surveyed by: Randall Killpack RK 9/30/2011
 Name Initial Date
 Reviewed by: Joe Wise JW 9/30/2011
 Name Initial Date

SAMPLE LOCATION DESCRIPTION LOG

BRAC Site Desc: Garrett USAR, El Dorado, AR

x	Survey #	Data Type (LAW, Wipe, Direct, GADR, CDR)	Lab Sample ID	Description of Location (Samples collected in the middle of the room unless otherwise noted.)
1	1	Direct, CDR, GADR		West Entrance, center of hallway.
2	2	Direct, CDR, GADR		Room 2, center of room.
3	3	Direct, CDR, GADR		Room 3, center of room.
4	4	Direct, CDR, GADR		Room 4, center of room.
5	5	Direct, CDR, GADR		Room 5, center of room.
6	6	Wipe, Direct, CDR, GADR	T2S2L1A1-1AB	Room 6, bathroom shower.
7	6a	Direct, CDR, GADR		Room 6, bathroom east wall, verification count 10/1/2011
8	6b	Direct, CDR, GADR		Room 6, southwest corner.
9	6c	LAW		Room 6, center of shower
10	7	Direct, CDR, GADR		Room 7, center of room.
11	8	Direct, CDR, GADR		Room 8, center of room.
12	9	Direct, CDR, GADR		Room 9, center of room.
13	10	Wipe, Direct, CDR, GADR	T2S2L1A1-2AB	Hallway, center of hallway.
14	10a	LAW		Hallway, center of hallway.
15	11	Direct, CDR, GADR		Room 11, center of room.
16	12	Direct, CDR, GADR		Room 12, center of room.
17	13	Direct, CDR, GADR		Room 13, center of room.
18	14	Direct, CDR, GADR		Room 14, center of room
19	15	Wipe, Direct, CDR, GADR	T2S2L1A1-3AB	Custodial Closet, center of room.
20	16	Wipe, Direct, CDR, GADR		Room 16, center of room
21	17	Wipe, Direct, CDR, GADR		Room 17, middle of south wall.
22	17a	Wipe, Direct, CDR, GADR		Room 17, middle of north wall.
23	18	Wipe, Direct, CDR, GADR	T2S2L1A1-4AB	Ladies Bathroom, floor drain.
24	18a	Wipe, Direct, CDR, GADR		Ladies Bathroom, center of room, verification count 10/1/2011
25	18b	Wipe, Direct, CDR, GADR		Ladies Bathroom, south east corner.
26	19	Wipe, Direct, CDR, GADR	T2S2L1A1-5AB	Mens Bathroom, floor drain.
27	19a	Wipe, Direct, CDR, GADR		Mens Bathroom, center of room, verification count 10/1/2011
28	19b	Wipe, Direct, CDR, GADR	T2S2L1A1-6AB	Mens Bathroom, shower drain.
29	19c	Wipe, Direct, CDR, GADR		Mens Bathroom, southwest corner.
30	20	Wipe, Direct, CDR, GADR		Room 20, center of room.
31	21	Wipe, Direct, CDR, GADR	T2S2L1A1-7AB	Hallway, center of hallway.
32	22	Wipe, Direct, CDR, GADR	T2S2L1A1-8AB	Hallway, center of hallway.
33	23	Wipe, Direct, CDR, GADR, LAW	T2S2L1A1-9AB	Vault, middle south wall.
34	23a	LAW		Vault, center of room
35	24	Wipe, Direct, CDR, GADR	T2S2L1A1-10AB	Hallway, center of hallway.
36	25	Wipe, Direct, CDR, GADR		Room 25, east center of room.
37	26	Wipe, Direct, CDR, GADR		Room 26, center of room.
38	27	Wipe, Direct, CDR, GADR		Room 27, west center of room.
39	28	Wipe, Direct, CDR, GADR	T2S2L1A1-21AB	Vault, center of room.
40	29	Wipe, Direct, CDR, GADR	T2S2L1A1-11AB	Room 29, center of room.
41	30	Wipe, Direct, CDR, GADR		Room 30, center of room.
42	31	Wipe, Direct, CDR, GADR	T2S2L1A1-12AB	Classroom, East end
43	32	Wipe, Direct, CDR, GADR	T2S2L1A1-13AB	Classroom, west end
44	32a	LAW		Classroom, west end
45	33	Wipe, Direct, CDR, GADR	T2S2L1A1-14AB	Kitchen, center drain.
46	33a	Wipe, Direct, CDR, GADR		Kitchen, south wall, verification count 10/1/2011.

BRAC Site Desc: Garrett USAR, El Dorado, AR

SAMPLE LOCATION DESCRIPTION LOG

x	Survey #	Data Type (LAW, Wipe, Direct, GADR, CDR)	Lab Sample ID	Description of Location (Samples collected in the middle of the room unless otherwise noted.)
47	33b	Wipe, Direct, CDR, GADR	T2S2L1A1-15AB	Kitchen, under sink.
48	33c	Wipe, Direct, CDR, GADR		Kitchen, northwest corner.
49	34	Wipe, Direct, CDR, GADR		Kitchen Storage, center of room.
50	35	Wipe, Direct, CDR, GADR	T2S2L1A1-16AB	Latrine, center of room.
51	35a	Wipe, Direct, CDR, GADR		Latrine, center of room, verification count 10/1/2011.
52	36	Wipe, Direct, CDR, GADR	T2S2L1A1-17AB	Hallway, center of hallway.
53	37	Wipe, Direct, CDR, GADR	T2S2L1A1-18AB	Boiler Room, east floor drain.
54	38	Wipe, Direct, CDR, GADR	T2S2L1A1-19AB	Electrical Room, center of room.
55	39	Wipe, Direct, CDR, GADR	T2S2L1A1-20AB	Outside Storage, center of room.
56	40	Wipe, Direct, CDR, GADR	T2S2L1A1-22AB	Storage, center of room.
57	41	Wipe, Direct, CDR, GADR	T2S2L2A1-23AB	Flammable Storage, center of room.
58	42	Wipe, Direct, CDR, GADR	T2S2L2A1-24AB	Storage Room, center of room.
59	43	Wipe, Direct, CDR, GADR	T2S2L2A1-25AB	Connex Site, middle of pad
60	44	Wipe, Direct, CDR, GADR	T2S2L2A1-26AB	Storage Cage, northwest corner.
61	45	Wipe, Direct, CDR, GADR	T2S2L2A1-27AB	Bathroom, center of bathroom.
62	46	Wipe, Direct, CDR, GADR	T2S2L2A1-28AB	Shop East End, center of room.
63	46a	LAW		Shop East End, center of room.
64	47	Wipe, Direct, CDR, GADR	T2S2L2A1-29AB	Shop, center of room.
65	48	Wipe, Direct, CDR, GADR	T2S2L2A1-30AB	Shop South End, center of room.

HIGH RESULTS NARRATIVE

BRAC Site Desc: Garrett USAR

Sample Location	Remarks
6 (1AB)	The elevated readings at this location is due to NORM present in the ceramic/porcelain tile. Additional counts were taken for comparison. 6 (1AB) was the original survey location, 6a was a comparison to 6 (1AB) on the same day, and 6b was taken the second day to verify the other two readings. All readings are consistent with NORM. No radioactive commodities were stored in this area.
6a	The elevated readings at this location is due to NORM present in the ceramic/porcelain tile. Additional counts were taken for comparison. 6 (1AB) was the original survey location, 6a was a comparison to 6 (1AB) on the same day, and 6b was taken the second day to verify the other two readings. All readings are consistent with NORM. No radioactive commodities were stored in this area.
6b	The elevated readings at this location is due to NORM present in the ceramic/porcelain tile. Additional counts were taken for comparison. 6 (1AB) was the original survey location, 6a was a comparison to 6 (1AB) on the same day, and 6b was taken the second day to verify the other two readings. All readings are consistent with NORM. No radioactive commodities were stored in this area.
18 (4AB)	The elevated readings at this location is due to NORM present in the ceramic/porcelain tile. Additional counts were taken for comparison. 18 (4AB) was the original survey location, 18a was a comparison to 18 (4AB) on the same day, and 18ba was taken the second day to verify the other two readings. Background readings in Ladies Bathroom were 9α and 406β for comparison. All readings are consistent with NORM. No radioactive commodities were stored in this area.
18a	The elevated readings at this location is due to NORM present in the ceramic/porcelain tile. Additional counts were taken for comparison. 18 (4AB) was the original survey location, 18a was a comparison to 18 (4AB) on the same day, and 18ba was taken the second day to verify the other two readings. Background readings in Ladies Bathroom were 9α and 406β for comparison. All readings are consistent with NORM. No radioactive commodities were stored in this area.
18b	The elevated readings at this location is due to NORM present in the ceramic/porcelain tile. Additional counts were taken for comparison. 18 (4AB) was the original survey location, 18a was a comparison to 18 (4AB) on the same day, and 18ba was taken the second day to verify the other two readings. Background readings in Ladies Bathroom were 9α and 406β for comparison. All readings are consistent with NORM. No radioactive commodities were stored in this area.
19 (5AB)	The elevated readings at this location is due to NORM present in the ceramic/porcelain tile. Additional counts were taken for comparison. 19 (5AB) and 19b (6AB) were the original survey locations, 19a was a comparison to 19 (5AB) and 19b (6AB) on the same day, and 19c was taken the second day to verify the other two readings. Background readings in Men's Bathroom were 7α and 339β for comparison. All readings are consistent with NORM. No radioactive commodities were stored in this area.
19a	The elevated readings at this location is due to NORM present in the ceramic/porcelain tile. Additional counts were taken for comparison. 19 (5AB) and 19b (6AB) were the original survey locations, 19a was a comparison to 19 (5AB) and 19b (6AB) on the same day, and 19c was taken the second day to verify the other two readings. Background readings in Men's Bathroom were 7α and 339β for comparison. All readings are consistent with NORM. No radioactive commodities were stored in this area.
19b (6AB)	The elevated readings at this location is due to NORM present in the ceramic/porcelain tile. Additional counts were taken for comparison. 19 (5AB) and 19b (6AB) were the original survey locations, 19a was a comparison to 19 (5AB) and 19b (6AB) on the same day, and 19c was taken the second day to verify the other two readings. Background readings in Men's Bathroom were 7α and 339β for comparison. All readings are consistent with NORM. No radioactive commodities were stored in this area.

HIGH RESULTS NARRATIVE

BRAC Site Desc: Garrett USAR

Sample Location	Remarks
19c	The elevated readings at this location is due to NORM present in the ceramic/porcelain tile. Additional counts were taken for comparison. 19 (5AB) and 19b (6AB) were the original survey locations, 19a was a comparison to 19 (5AB) and 19b (6AB) on the same day, and 19c was taken the second day to verify the other two readings. Background readings in Men's Bathroom were 7α and 339β for comparison. All readings are consistent with NORM. No radioactive commodities were stored in this area.
33 (14AB)	The elevated readings at this location is due to NORM present in the ceramic/porcelain tile. Additional counts were taken for comparison. 33 (14AB) and 33b (15AB) were the original survey locations, 33a was a comparison to 33 (14AB) and 33b (15AB) on the same day, and 33c was taken the second day to verify the other two readings. Background readings in the Kitchen was 4α and 296β for comparison. All readings are consistent with NORM. No radioactive commodities were stored in this area.
33a	The elevated readings at this location is due to NORM present in the ceramic/porcelain tile. Additional counts were taken for comparison. 33 (14AB) and 33b (15AB) were the original survey locations, 33a was a comparison to 33 (14AB) and 33b (15AB) on the same day, and 33c was taken the second day to verify the other two readings. Background readings in the Kitchen was 4α and 296β for comparison. All readings are consistent with NORM. No radioactive commodities were stored in this area.
33b (15AB)	The elevated readings at this location is due to NORM present in the ceramic/porcelain tile. Additional counts were taken for comparison. 33 (14AB) and 33b (15AB) were the original survey locations, 33a was a comparison to 33 (14AB) and 33b (15AB) on the same day, and 33c was taken the second day to verify the other two readings. Background readings in the Kitchen was 4α and 296β for comparison. All readings are consistent with NORM. No radioactive commodities were stored in this area.
33c	The elevated readings at this location is due to NORM present in the ceramic/porcelain tile. Additional counts were taken for comparison. 33 (14AB) and 33b (15AB) were the original survey locations, 33a was a comparison to 33 (14AB) and 33b (15AB) on the same day, and 33c was taken the second day to verify the other two readings. Background readings in the Kitchen was 4α and 296β for comparison. All readings are consistent with NORM. No radioactive commodities were stored in this area.
35 (16AB)	The elevated readings at this location is due to NORM present in the ceramic/porcelain tile. Additional counts were taken for comparison. 35 (16AB) was the original survey location. 35a was taken the second day to verify the other readings. Background readings in the bathroom 9α and 467β for comparison. All readings are consistent with NORM. No radioactive commodities were stored in this area.
35a	The elevated readings at this location is due to NORM present in the ceramic/porcelain tile. Additional counts were taken for comparison. 35 (16AB) was the original survey location. 35a was taken the second day to verify the other readings. Background readings in the bathroom 9α and 467β for comparison. All readings are consistent with NORM. No radioactive commodities were stored in this area.
45 (27AB)	The elevated readings at this location is due to NORM present in the ceramic/porcelain tile. Additional counts were taken for comparison. 45 (27AB) was the original survey location. Construction of this bathroom is identical to Room 35, smear 16AB. Background readings in the bathroom 3α and 279β for comparison. All readings are consistent with NORM. No radioactive commodities were stored in this area.

Radiological Survey Record - Survey Locations

Radiation Survey Sketch

(Indicate North)

Date : 09/30/11

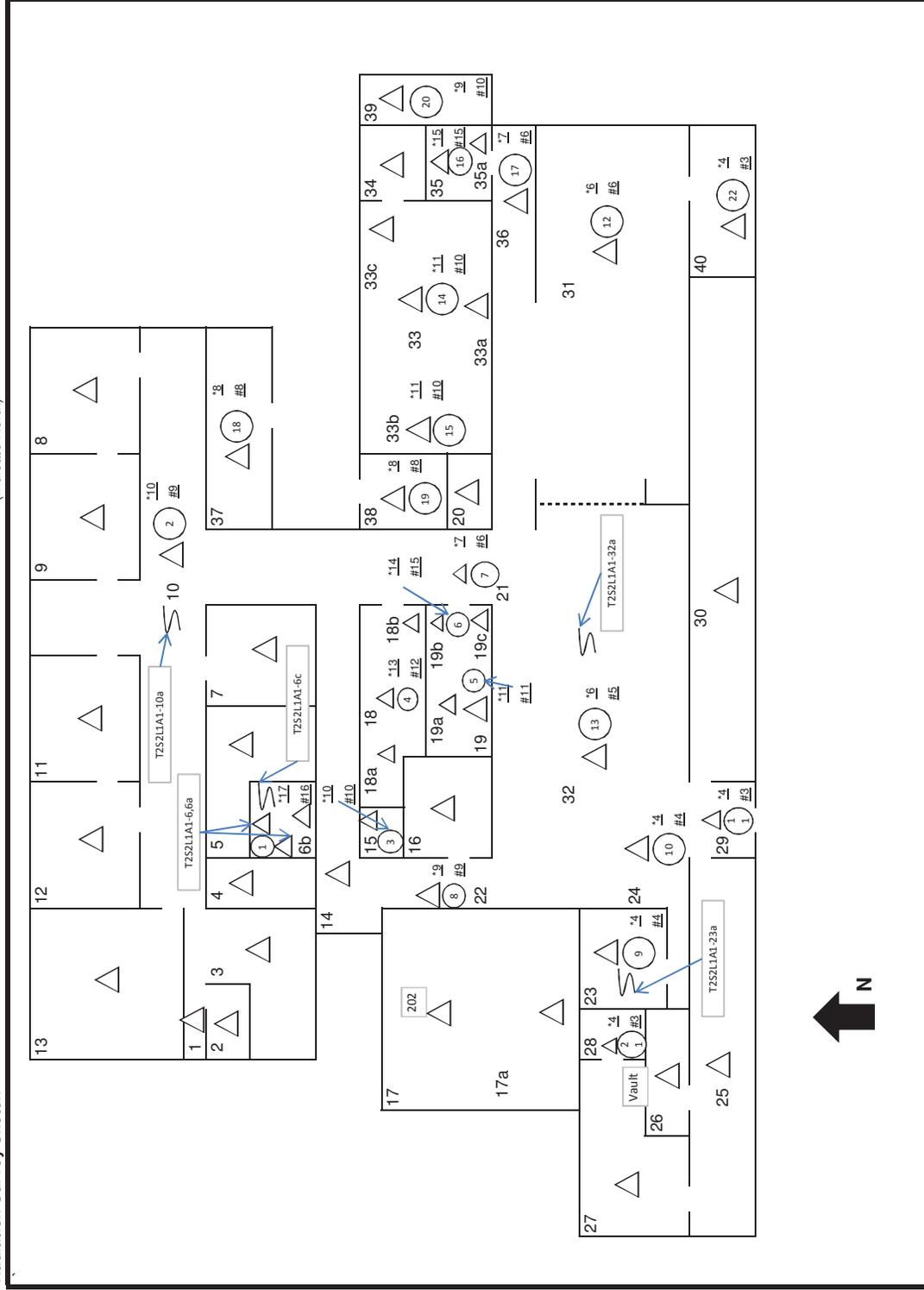
Team No. : 2

Survey No. : T2S2L1A1

Approx. Scale N/A

Key:

- Contamination
 - Large Area Wipe (LAW)
 - Wipe Test (100 cm²)
 - (1 min)
- * - Contact
- # - Gen Area
- A/S - Air Sampling
 - Location



Performed by:

Randall Killpack

Reviewed by:

Bones

TerranearPMC Radiological Survey Record - Survey Locations

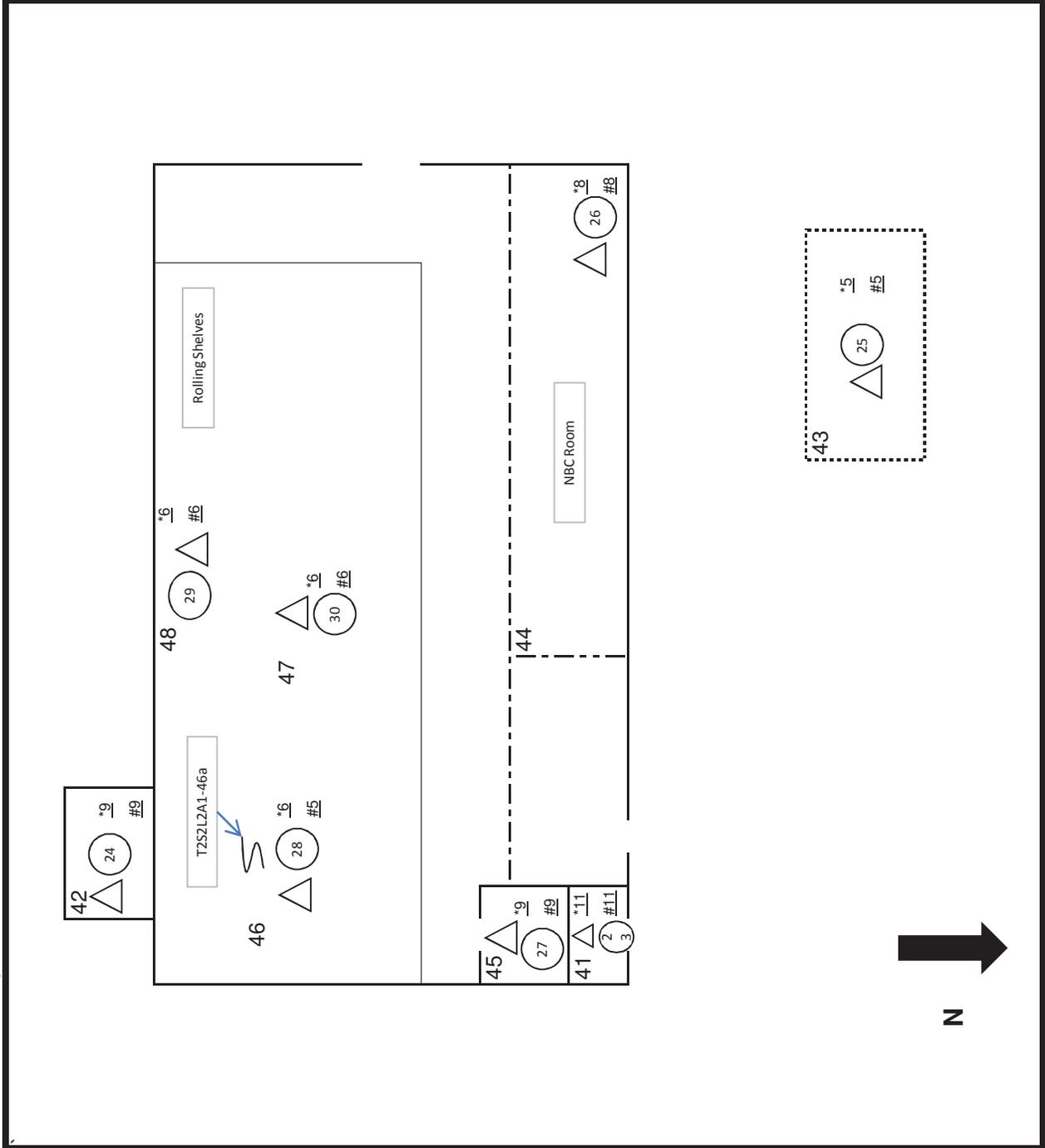
BRAC Site Desc: Garrett USAR

Date : 09/30/11

Team No. : 2

Radiation Survey Sketch

(Indicate North)



Approx. Scale N/A

Key:

Contamination	Large Area Wipe (LAW)	Wipe Test (100 cm²)	Direct Reading (1 min)

All dose rates are in $\mu\text{R/hr}$ and underlined

* - Contact
- Gen Area

Air Sampling

A/S - Location

Performed by:

Randall Killpack

Reviewed by:

Joe Wise

DAILY LOG

BRAC Site Desc: Garrett USAR

Date/Time	Activity Description
9/30/2011	
800	Met POC at the site. The POC is Tim Bastien. He opened most of the areas and was missing keys for some rooms in the main building and could not access the interior of the rear building. There were 3 exterior rooms on the main building and 2 exterior rooms on the rear building. We walked it down together. There is evidence of where a Connex and a storage building were once located in the parking areas. He stated that he had been here about 32 years and that there had never been anything here that was radioactive in nature. Upon specific questioning, the only low level commodities were a few compasses. Because of the nature of the units, there were no radiac sets, tritium sights, or anything else.
845	Randall began checking the instruments and check sources.
930	Jesus and I went through the main building again and marked all the areas for the smears. Discussed the survey approach with the team
1115	Started taking smears and readings.
1130	POC was able to get access to all areas except the interior of the rear building.
1320	Locksmith arrive to access rear building.
1330	Completed doing the smears and readings in the Main Building.
1426	Counted all the field swipes completed
1430	Locksmith declares he can not open the door and wants to drill out the lock cylinder. After discussing with POC, it is agreed the locksmith will return first thing in the morning to drill out the lock.
1545	Data entered into the spreadsheet. The only high readings were the restrooms that had a porcelain or ceramic tile. There were multiple bathrooms. Additional background readings were taken in these rooms and the background readings were elevated also. Additional readings will be taken tomorrow to confirm the readings. All of these readings are consistent with NORM.
1610	Tritium Smears and LAWs collected.
1645	LAW readings completed with no elevated reading anywhere except the restrooms where there is tile.
1700	Post source check readings conducted and finished work at the site for the day.
10/1/2011	
810	Arrived on site.
900	Instruments set-up and checked.
925	Verified reading in all the restrooms and confirmed similar readings which are consistent with NORM.
930	Team moved up to rear building to wait for locksmith, take readings and LAWs of the two spots in the parking area, and survey the two exterior accessed rooms.
1200	Locksmith arrives and opens up rear building. The rear building is split into 3 cages and a restroom. One cage appears to have stored PRO Masks. This would have been a place if any radioactive commodities would have been stored. There was no evidence of any radio active commodities being stored in the rear building
1230	Wipes, smears and readings collected in rear building
1400	All field readings and post check source readings completed.
1700	Worked on reports and documented readings.

APPENDIX H
ANALYTICAL RESULTS



October 07, 2011

Daniel F. Caputo
TPMC-Energy Solutions
1009 Commerce Park, Suite 100
Oak Ridge, Tennessee 37830

Re: Team 2-Site 2 (Garrett USARC)
Work Order: 287309

Dear Daniel Caputo:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on October 04, 2011. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4707.

Sincerely,

LaToya Hughes
Project Manager

Purchase Order: Signed Quote
Enclosures



GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 – (843) 556-8171 – www.gel.com

Certificate of Analysis Report for

TPMC003 TPMC–TerranearPMC, LLC (Project No. 34501)

Client SDG: 287309 GEL Work Order: 287309

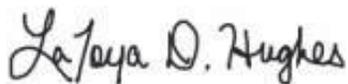
The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a surrogate compound
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the detection limit.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, LaToya Hughes.



Reviewed by _____

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: October 6, 2011

Company : TPMC-Energy Solutions
Address : 1009 Commerce Park, Suite 100

Oak Ridge, Tennessee 37830
Contact: Daniel F. Caputo
Project: Team 2-Site 2 (Garrett USARC)

Client Sample ID: T2S2L1A1-1AB
Sample ID: 287309001
Matrix: Swipe
Collect Date: 30-SEP-11 13:30
Receive Date: 04-OCT-11
Collector: Client

Project: TPMC00311
Client ID: TPMC003

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, filter "As Received"											
Alpha	U	0.715	2.68	20.0	dpm/Filter		DXF3	10/06/11	1146	1147399	1
Beta	U	-0.385	1.78	200	dpm/Filter						

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 900.0/SW846 9310/SM 7110B Modified	

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: October 6, 2011

Company : TPMC-Energy Solutions
Address : 1009 Commerce Park, Suite 100

Oak Ridge, Tennessee 37830
Contact: Daniel F. Caputo
Project: Team 2-Site 2 (Garrett USARC)

Client Sample ID: T2S2L1A1-2AB
Sample ID: 287309002
Matrix: Swipe
Collect Date: 30-SEP-11 13:30
Receive Date: 04-OCT-11
Collector: Client

Project: TPMC00311
Client ID: TPMC003

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, filter "As Received"											
Alpha	U	-0.232	2.15	20.0	dpm/Filter		DXF3	10/06/11	1146	1147399	1
Beta	U	-0.153	2.67	200	dpm/Filter						

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 900.0/SW846 9310/SM 7110B Modified	

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: October 6, 2011

Company : TPMC-Energy Solutions
Address : 1009 Commerce Park, Suite 100

Oak Ridge, Tennessee 37830
Contact: Daniel F. Caputo
Project: Team 2-Site 2 (Garrett USARC)

Client Sample ID: T2S2L1A1-3AB
Sample ID: 287309003
Matrix: Swipe
Collect Date: 30-SEP-11 13:30
Receive Date: 04-OCT-11
Collector: Client

Project: TPMC00311
Client ID: TPMC003

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, filter "As Received"											
Alpha	U	0.105	2.21	20.0	dpm/Filter		DXF3	10/05/11	1504	1147399	1
Beta	U	-0.857	2.89	200	dpm/Filter						

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 900.0/SW846 9310/SM 7110B Modified	

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: October 6, 2011

Company : TPMC-Energy Solutions
Address : 1009 Commerce Park, Suite 100

Oak Ridge, Tennessee 37830

Contact: Daniel F. Caputo
Project: Team 2-Site 2 (Garrett USARC)

Client Sample ID: T2S2L1A1-4AB

Project: TPMC00311

Sample ID: 287309004

Client ID: TPMC003

Matrix: Swipe

Collect Date: 30-SEP-11 13:30

Receive Date: 04-OCT-11

Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, filter "As Received"											
Alpha	U	0.448	2.21	20.0	dpm/Filter		DXF3	10/06/11	1146	1147399	1
Beta	U	1.29	2.89	200	dpm/Filter						

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 900.0/SW846 9310/SM 7110B Modified	

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: October 6, 2011

Company : TPMC-Energy Solutions
Address : 1009 Commerce Park, Suite 100

Oak Ridge, Tennessee 37830
Contact: Daniel F. Caputo
Project: Team 2-Site 2 (Garrett USARC)

Client Sample ID: T2S2L1A1-5AB
Sample ID: 287309005
Matrix: Swipe
Collect Date: 30-SEP-11 13:30
Receive Date: 04-OCT-11
Collector: Client

Project: TPMC00311
Client ID: TPMC003

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, filter "As Received"											
Alpha	U	0.930	2.23	20.0	dpm/Filter		DXF3	10/06/11	1146	1147399	1
Beta	U	-0.373	2.45	200	dpm/Filter						

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 900.0/SW846 9310/SM 7110B Modified	

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: October 6, 2011

Company : TPMC-Energy Solutions
Address : 1009 Commerce Park, Suite 100

Oak Ridge, Tennessee 37830
Contact: Daniel F. Caputo
Project: Team 2-Site 2 (Garrett USARC)

Client Sample ID: T2S2L1A1-6AB
Sample ID: 287309006
Matrix: Swipe
Collect Date: 30-SEP-11 13:30
Receive Date: 04-OCT-11
Collector: Client

Project: TPMC00311
Client ID: TPMC003

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, filter "As Received"											
Alpha	U	0.204	2.00	20.0	dpm/Filter		DXF3	10/06/11	1146	1147399	1
Beta	U	0.154	2.08	200	dpm/Filter						

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 900.0/SW846 9310/SM 7110B Modified	

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Certificate of Analysis

Report Date: October 6, 2011

Company : TPMC-Energy Solutions
Address : 1009 Commerce Park, Suite 100

Oak Ridge, Tennessee 37830
Contact: Daniel F. Caputo
Project: Team 2-Site 2 (Garrett USARC)

Client Sample ID: T2S2L1A1-7AB
Sample ID: 287309007
Matrix: Swipe
Collect Date: 30-SEP-11 13:30
Receive Date: 04-OCT-11
Collector: Client

Project: TPMC00311
Client ID: TPMC003

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, filter "As Received"											
Alpha	U	0.216	1.93	20.0	dpm/Filter		DXF3	10/05/11	1504	1147399	1
Beta	U	1.32	2.29	200	dpm/Filter						

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 900.0/SW846 9310/SM 7110B Modified	

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Report Date: October 6, 2011

Company : TPMC-Energy Solutions
Address : 1009 Commerce Park, Suite 100

Oak Ridge, Tennessee 37830
Contact: Daniel F. Caputo
Project: Team 2-Site 2 (Garrett USARC)

Client Sample ID: T2S2L1A1-8AB
Sample ID: 287309008
Matrix: Swipe
Collect Date: 30-SEP-11 13:30
Receive Date: 04-OCT-11
Collector: Client

Project: TPMC00311
Client ID: TPMC003

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, filter "As Received"											
Alpha	U	-0.258	2.22	20.0	dpm/Filter		DXF3	10/06/11	1147	1147399	1
Beta	U	0.208	2.07	200	dpm/Filter						

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 900.0/SW846 9310/SM 7110B Modified	

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Report Date: October 6, 2011

Company : TPMC-Energy Solutions
Address : 1009 Commerce Park, Suite 100

Oak Ridge, Tennessee 37830
Contact: Daniel F. Caputo
Project: Team 2-Site 2 (Garrett USARC)

Client Sample ID: T2S2L1A1-9AB
Sample ID: 287309009
Matrix: Swipe
Collect Date: 30-SEP-11 13:30
Receive Date: 04-OCT-11
Collector: Client

Project: TPMC00311
Client ID: TPMC003

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, filter "As Received"											
Alpha	U	0.653	1.80	20.0	dpm/Filter		DXF3	10/05/11	1504	1147399	1
Beta	U	0.0311	2.29	200	dpm/Filter						

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 900.0/SW846 9310/SM 7110B Modified	

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Report Date: October 6, 2011

Company : TPMC-Energy Solutions
Address : 1009 Commerce Park, Suite 100

Oak Ridge, Tennessee 37830
Contact: Daniel F. Caputo
Project: Team 2-Site 2 (Garrett USARC)

Client Sample ID: T2S2L1A1-10AB
Sample ID: 287309010
Matrix: Swipe
Collect Date: 30-SEP-11 13:30
Receive Date: 04-OCT-11
Collector: Client

Project: TPMC00311
Client ID: TPMC003

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, filter "As Received"											
Alpha	U	0.267	2.17	20.0	dpm/Filter		DXF3	10/05/11	1504	1147399	1
Beta	U	0.382	2.05	200	dpm/Filter						

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 900.0/SW846 9310/SM 7110B Modified	

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Address : 1009 Commerce Park, Suite 100

Oak Ridge, Tennessee 37830
Contact: Daniel F. Caputo
Project: Team 2-Site 2 (Garrett USARC)

Client Sample ID: T2S2L1A1-11AB
Sample ID: 287309011
Matrix: Swipe
Collect Date: 30-SEP-11 13:30
Receive Date: 04-OCT-11
Collector: Client

Project: TPMC00311
Client ID: TPMC003

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, filter "As Received"											
Alpha	U	-0.0815	2.79	20.0	dpm/Filter		CAS2	10/05/11	1508	1147401	1
Beta	U	0.607	2.12	200	dpm/Filter						

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 900.0/SW846 9310/SM 7110B Modified	

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Report Date: October 6, 2011

Company : TPMC-Energy Solutions
Address : 1009 Commerce Park, Suite 100

Oak Ridge, Tennessee 37830

Contact: Daniel F. Caputo
Project: Team 2-Site 2 (Garrett USARC)

Client Sample ID: T2S2L1A1-12AB

Project: TPMC00311

Sample ID: 287309012

Client ID: TPMC003

Matrix: Swipe

Collect Date: 30-SEP-11 13:30

Receive Date: 04-OCT-11

Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, filter "As Received"											
Alpha	U	0.163	2.36	20.0	dpm/Filter		CAS2	10/05/11	1508	1147401	1
Beta	U	1.09	2.88	200	dpm/Filter						

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 900.0/SW846 9310/SM 7110B Modified	

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Company : TPMC-Energy Solutions
Address : 1009 Commerce Park, Suite 100

Oak Ridge, Tennessee 37830

Contact: Daniel F. Caputo
Project: Team 2-Site 2 (Garrett USARC)

Client Sample ID: T2S2L1A1-13AB

Project: TPMC00311

Sample ID: 287309013

Client ID: TPMC003

Matrix: Swipe

Collect Date: 30-SEP-11 13:30

Receive Date: 04-OCT-11

Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, filter "As Received"											
Alpha	U	-0.503	2.79	20.0	dpm/Filter		CAS2	10/06/11	1340	1147401	1
Beta	U	-0.0305	2.12	200	dpm/Filter						

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 900.0/SW846 9310/SM 7110B Modified	

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Company : TPMC-Energy Solutions
Address : 1009 Commerce Park, Suite 100

Oak Ridge, Tennessee 37830

Contact: Daniel F. Caputo
Project: Team 2-Site 2 (Garrett USARC)

Client Sample ID: T2S2L1A1-14AB

Project: TPMC00311

Sample ID: 287309014

Client ID: TPMC003

Matrix: Swipe

Collect Date: 30-SEP-11 13:30

Receive Date: 04-OCT-11

Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, filter "As Received"											
Alpha	U	0.276	2.15	20.0	dpm/Filter		CAS2	10/05/11	1508	1147401	1
Beta	U	-0.53	2.97	200	dpm/Filter						

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 900.0/SW846 9310/SM 7110B Modified	

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Report Date: October 6, 2011

Company : TPMC-Energy Solutions
Address : 1009 Commerce Park, Suite 100

Oak Ridge, Tennessee 37830

Contact: Daniel F. Caputo
Project: Team 2-Site 2 (Garrett USARC)

Client Sample ID: T2S2L1A1-15AB

Project: TPMC00311

Sample ID: 287309015

Client ID: TPMC003

Matrix: Swipe

Collect Date: 30-SEP-11 13:30

Receive Date: 04-OCT-11

Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, filter "As Received"											
Alpha	U	-0.156	2.15	20.0	dpm/Filter		CAS2	10/06/11	1341	1147401	1
Beta	U	1.02	2.97	200	dpm/Filter						

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 900.0/SW846 9310/SM 7110B Modified	

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Company : TPMC-Energy Solutions
Address : 1009 Commerce Park, Suite 100

Oak Ridge, Tennessee 37830
Contact: Daniel F. Caputo
Project: Team 2-Site 2 (Garrett USARC)

Client Sample ID: T2S2L1A1-16AB
Sample ID: 287309016
Matrix: Swipe
Collect Date: 30-SEP-11 13:30
Receive Date: 04-OCT-11
Collector: Client

Project: TPMC00311
Client ID: TPMC003

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, filter "As Received"											
Alpha	U	-0.0894	2.58	20.0	dpm/Filter		CAS2	10/05/11	1508	1147401	1
Beta	U	2.07	2.45	200	dpm/Filter						

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 900.0/SW846 9310/SM 7110B Modified	

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Company : TPMC-Energy Solutions
Address : 1009 Commerce Park, Suite 100

Oak Ridge, Tennessee 37830

Contact: Daniel F. Caputo
Project: Team 2-Site 2 (Garrett USARC)

Client Sample ID: T2S2L1A1-17AB

Project: TPMC00311

Sample ID: 287309017

Client ID: TPMC003

Matrix: Swipe

Collect Date: 30-SEP-11 13:30

Receive Date: 04-OCT-11

Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, filter "As Received"											
Alpha	U	0.293	2.55	20.0	dpm/Filter		CAS2	10/05/11	1509	1147401	1
Beta	U	0.536	2.49	200	dpm/Filter						

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 900.0/SW846 9310/SM 7110B Modified	

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Company : TPMC-Energy Solutions
Address : 1009 Commerce Park, Suite 100

Oak Ridge, Tennessee 37830

Contact: Daniel F. Caputo
Project: Team 2-Site 2 (Garrett USARC)

Client Sample ID: T2S2L1A1-18AB

Project: TPMC00311

Sample ID: 287309018

Client ID: TPMC003

Matrix: Swipe

Collect Date: 30-SEP-11 13:30

Receive Date: 04-OCT-11

Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, filter "As Received"											
Alpha	U	-0.0932	2.58	20.0	dpm/Filter		CAS2	10/06/11	1341	1147401	1
Beta	U	2.29	2.45	200	dpm/Filter						

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 900.0/SW846 9310/SM 7110B Modified	

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Report Date: October 6, 2011

Company : TPMC-Energy Solutions
Address : 1009 Commerce Park, Suite 100

Oak Ridge, Tennessee 37830
Contact: Daniel F. Caputo
Project: Team 2-Site 2 (Garrett USARC)

Client Sample ID: T2S2L1A1-19AB
Sample ID: 287309019
Matrix: Swipe
Collect Date: 30-SEP-11 13:30
Receive Date: 04-OCT-11
Collector: Client

Project: TPMC00311
Client ID: TPMC003

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, filter "As Received"											
Alpha	U	0.739	1.85	20.0	dpm/Filter		CAS2	10/05/11	1509	1147401	1
Beta	U	2.04	2.14	200	dpm/Filter						

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 900.0/SW846 9310/SM 7110B Modified	

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Report Date: October 6, 2011

Company : TPMC-Energy Solutions
Address : 1009 Commerce Park, Suite 100

Oak Ridge, Tennessee 37830
Contact: Daniel F. Caputo
Project: Team 2-Site 2 (Garrett USARC)

Client Sample ID: T2S2L1A1-20AB
Sample ID: 287309020
Matrix: Swipe
Collect Date: 30-SEP-11 13:30
Receive Date: 04-OCT-11
Collector: Client

Project: TPMC00311
Client ID: TPMC003

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, filter "As Received"											
Alpha	U	0.289	2.04	20.0	dpm/Filter		CAS2	10/05/11	1509	1147401	1
Beta	U	0.807	2.10	200	dpm/Filter						

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 900.0/SW846 9310/SM 7110B Modified	

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Report Date: October 6, 2011

Company : TPMC-Energy Solutions
Address : 1009 Commerce Park, Suite 100

Oak Ridge, Tennessee 37830
Contact: Daniel F. Caputo
Project: Team 2-Site 2 (Garrett USARC)

Client Sample ID: T2S2L1A1-21AB
Sample ID: 287309021
Matrix: Swipe
Collect Date: 30-SEP-11 13:30
Receive Date: 04-OCT-11
Collector: Client

Project: TPMC00311
Client ID: TPMC003

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, filter "As Received"											
Alpha	U	0.718	2.11	20.0	dpm/Filter		CAS2	10/05/11	1509	1147401	1
Beta	U	2.11	2.24	200	dpm/Filter						

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 900.0/SW846 9310/SM 7110B Modified	

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Report Date: October 6, 2011

Company : TPMC-Energy Solutions
Address : 1009 Commerce Park, Suite 100

Oak Ridge, Tennessee 37830

Contact: Daniel F. Caputo
Project: Team 2-Site 2 (Garrett USARC)

Client Sample ID: T2S2L1A1-22AB

Project: TPMC00311

Sample ID: 287309022

Client ID: TPMC003

Matrix: Swipe

Collect Date: 30-SEP-11 13:30

Receive Date: 04-OCT-11

Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, filter "As Received"											
Alpha	U	0.106	2.42	20.0	dpm/Filter		CAS2	10/05/11	1526	1147401	1
Beta	U	0.448	2.46	200	dpm/Filter						

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 900.0/SW846 9310/SM 7110B Modified	

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Report Date: October 6, 2011

Company : TPMC-Energy Solutions
Address : 1009 Commerce Park, Suite 100

Oak Ridge, Tennessee 37830

Contact: Daniel F. Caputo
Project: Team 2-Site 2 (Garrett USARC)

Client Sample ID: T2S2L2A1-23AB

Project: TPMC00311

Sample ID: 287309023

Client ID: TPMC003

Matrix: Swipe

Collect Date: 01-OCT-11 12:15

Receive Date: 04-OCT-11

Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, filter "As Received"											
Alpha	U	0.309	2.68	20.0	dpm/Filter		CAS2	10/05/11	1526	1147401	1
Beta	U	0.0451	1.78	200	dpm/Filter						

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 900.0/SW846 9310/SM 7110B Modified	

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Report Date: October 6, 2011

Company : TPMC-Energy Solutions
Address : 1009 Commerce Park, Suite 100

Oak Ridge, Tennessee 37830

Contact: Daniel F. Caputo
Project: Team 2-Site 2 (Garrett USARC)

Client Sample ID: T2S2L2A1-24AB

Project: TPMC00311

Sample ID: 287309024

Client ID: TPMC003

Matrix: Swipe

Collect Date: 01-OCT-11 12:15

Receive Date: 04-OCT-11

Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, filter "As Received"											
Alpha	U	0.120	2.42	20.0	dpm/Filter		CAS2	10/06/11	1341	1147401	1
Beta	U	-0.44	2.46	200	dpm/Filter						

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 900.0/SW846 9310/SM 7110B Modified	

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Report Date: October 6, 2011

Company : TPMC-Energy Solutions
Address : 1009 Commerce Park, Suite 100

Oak Ridge, Tennessee 37830
Contact: Daniel F. Caputo
Project: Team 2-Site 2 (Garrett USARC)

Client Sample ID: T2S2L2A1-25AB
Sample ID: 287309025
Matrix: Swipe
Collect Date: 01-OCT-11 12:15
Receive Date: 04-OCT-11
Collector: Client

Project: TPMC00311
Client ID: TPMC003

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, filter "As Received"											
Alpha	U	-0.0924	2.68	20.0	dpm/Filter		CAS2	10/06/11	1342	1147401	1
Beta	U	-0.158	1.78	200	dpm/Filter						

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 900.0/SW846 9310/SM 7110B Modified	

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Report Date: October 6, 2011

Company : TPMC-Energy Solutions
Address : 1009 Commerce Park, Suite 100

Oak Ridge, Tennessee 37830

Contact: Daniel F. Caputo
Project: Team 2-Site 2 (Garrett USARC)

Client Sample ID: T2S2L2A1-26AB

Project: TPMC00311

Sample ID: 287309026

Client ID: TPMC003

Matrix: Swipe

Collect Date: 01-OCT-11 12:15

Receive Date: 04-OCT-11

Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, filter "As Received"											
Alpha	U	0.0613	2.34	20.0	dpm/Filter		CAS2	10/05/11	1526	1147401	1
Beta	U	0.909	2.12	200	dpm/Filter						

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 900.0/SW846 9310/SM 7110B Modified	

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Report Date: October 6, 2011

Company : TPMC-Energy Solutions
Address : 1009 Commerce Park, Suite 100

Oak Ridge, Tennessee 37830

Contact: Daniel F. Caputo
Project: Team 2-Site 2 (Garrett USARC)

Client Sample ID: T2S2L2A1-27AB

Project: TPMC00311

Sample ID: 287309027

Client ID: TPMC003

Matrix: Swipe

Collect Date: 01-OCT-11 12:15

Receive Date: 04-OCT-11

Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, filter "As Received"											
Alpha	U	1.13	2.19	20.0	dpm/Filter		CAS2	10/06/11	1342	1147401	1
Beta	U	-0.905	2.20	200	dpm/Filter						

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 900.0/SW846 9310/SM 7110B Modified	

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Report Date: October 6, 2011

Company : TPMC-Energy Solutions
Address : 1009 Commerce Park, Suite 100

Oak Ridge, Tennessee 37830

Contact: Daniel F. Caputo
Project: Team 2-Site 2 (Garrett USARC)

Client Sample ID: T2S2L2A1-28AB

Project: TPMC00311

Sample ID: 287309028

Client ID: TPMC003

Matrix: Swipe

Collect Date: 01-OCT-11 12:15

Receive Date: 04-OCT-11

Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, filter "As Received"											
Alpha	U	0.484	2.21	20.0	dpm/Filter		CAS2	10/05/11	1526	1147401	1
Beta	U	-0.433	2.89	200	dpm/Filter						

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 900.0/SW846 9310/SM 7110B Modified	

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Report Date: October 6, 2011

Company : TPMC-Energy Solutions
Address : 1009 Commerce Park, Suite 100

Oak Ridge, Tennessee 37830

Contact: Daniel F. Caputo
Project: Team 2-Site 2 (Garrett USARC)

Client Sample ID: T2S2L2A1-29AB

Project: TPMC00311

Sample ID: 287309029

Client ID: TPMC003

Matrix: Swipe

Collect Date: 01-OCT-11 12:15

Receive Date: 04-OCT-11

Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, filter "As Received"											
Alpha	U	1.71	2.23	20.0	dpm/Filter		CAS2	10/05/11	1526	1147401	1
Beta	U	0.460	2.45	200	dpm/Filter						

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 900.0/SW846 9310/SM 7110B Modified	

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Report Date: October 6, 2011

Company : TPMC-Energy Solutions
Address : 1009 Commerce Park, Suite 100

Oak Ridge, Tennessee 37830

Contact: Daniel F. Caputo
Project: Team 2-Site 2 (Garrett USARC)

Client Sample ID: T2S2L2A1-30AB

Project: TPMC00311

Sample ID: 287309030

Client ID: TPMC003

Matrix: Swipe

Collect Date: 01-OCT-11 12:15

Receive Date: 04-OCT-11

Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, filter "As Received"											
Alpha	U	0.213	2.00	20.0	dpm/Filter		CAS2	10/05/11	1526	1147401	1
Beta	U	-0.269	2.08	200	dpm/Filter						

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 900.0/SW846 9310/SM 7110B Modified	

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: October 6, 2011

Company : TPMC-Energy Solutions
Address : 1009 Commerce Park, Suite 100

Oak Ridge, Tennessee 37830
Contact: Daniel F. Caputo
Project: Team 2-Site 2 (Garrett USARC)

Client Sample ID:	T2S2L1A1-T1	Project:	TPMC00311
Sample ID:	287309031	Client ID:	TPMC003
Matrix:	Swipe		
Collect Date:	30-SEP-11 12:15		
Receive Date:	04-OCT-11		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Liquid Scintillation Analysis											
LSC, Direct Tritium, Filter "As Received"											
Tritium	U	-6.17	25.5		dpm/Filter		MYM1	10/06/11	1056	1147545	1

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	GL-RAD-A-002	

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: October 6, 2011

Company : TPMC-Energy Solutions
Address : 1009 Commerce Park, Suite 100

Oak Ridge, Tennessee 37830
Contact: Daniel F. Caputo
Project: Team 2-Site 2 (Garrett USARC)

Client Sample ID: T2S2L1A1-T2
Sample ID: 287309032
Matrix: Swipe
Collect Date: 30-SEP-11 12:26
Receive Date: 04-OCT-11
Collector: Client

Project: TPMC00311
Client ID: TPMC003

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Liquid Scintillation Analysis											
LSC, Direct Tritium, Filter "As Received"											
Tritium	U	7.52	24.0		dpm/Filter		MYM1	10/06/11	0337	1147545	1

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	GL-RAD-A-002	

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: October 6, 2011

Company : TPMC-Energy Solutions
Address : 1009 Commerce Park, Suite 100

Oak Ridge, Tennessee 37830
Contact: Daniel F. Caputo
Project: Team 2-Site 2 (Garrett USARC)

Client Sample ID: T2S2L2A1-T3
Sample ID: 287309033
Matrix: Swipe
Collect Date: 01-OCT-11 11:45
Receive Date: 04-OCT-11
Collector: Client

Project: TPMC00311
Client ID: TPMC003

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Liquid Scintillation Analysis											
LSC, Direct Tritium, Filter "As Received"											
Tritium	U	5.30	19.1		dpm/Filter		MYM1	10/06/11	0353	1147545	1

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	GL-RAD-A-002	

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Report Date: October 6, 2011
Page 1 of 2

TPMC-Energy Solutions
1009 Commerce Park, Suite 100
Oak Ridge, Tennessee

Contact: Daniel F. Caputo

Workorder: 287309

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gas Flow											
Batch	1147399										
QC1202501568	287308021	DUP									
Alpha			U	-0.0817	U	0.538	dpm/Filter	0.00	N/A	DXF3	10/05/11 15:10
Beta			U	0.825	U	-0.0233	dpm/Filter	0.00	N/A		
QC1202501567	MB										
Alpha				U		-0.29	dpm/Filter				10/05/11 15:03
Beta				U		0.130	dpm/Filter				
Batch	1147401										
QC1202501573	287309011	DUP									
Alpha			U	-0.0815	U	0.719	dpm/Filter	0.00	N/A	CAS2	10/05/11 15:30
Beta			U	0.607	U	1.46	dpm/Filter	0.00	N/A		
QC1202501572	MB										
Alpha				U		-0.177	dpm/Filter				10/05/11 15:19
Beta				U		0.512	dpm/Filter				
Rad Liquid Scintillation											
Batch	1147545										
QC1202501970	LCS										
Tritium				232		221	dpm/Filter		95.2	(75%-125%)	MYM1 10/06/11 06:36
QC1202501971	LCSD										
Tritium				232		221	dpm/Filter	0.369	95.6	(0%-20%)	10/06/11 06:52
QC1202501969	MB										
Tritium				U		2.92	dpm/Filter				10/06/11 06:20

Notes:

The Qualifiers in this report are defined as follows:

- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- F Estimated Value
- H Analytical holding time was exceeded
- J Value is estimated
- K Analyte present. Reported value may be biased high. Actual value is expected to be lower.
- L Analyte present. Reported value may be biased low. Actual value is expected to be higher.

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 287309

Page 2 of 2

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
M		M									
M											
N/A											
ND											
NJ											
Q											
R											
U											
UI											
UJ											
UL											
X											
Y											
^											
h											

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

* Indicates that a Quality Control parameter was not within specifications.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

There are no "Data Exception Reports" associated with this analytical report.

GEL Chain of Custody and Analytical Request

GEL Laboratories, LLC
 2040 Savage Road
 Charleston, SC 29407
 Phone: (843) 556-8171
 Fax: (843) 766-1178

GEL Work Order Number: 287309

Client Name: TERRANEAR PMC Phone #: (860) 836-1046
 Project/Site Name: CABRET USAR Fax #: _____
 Address: EL DORADO AR

Collected by: Randall Killpatrick Send Results To: DAN CAPUTO
 * For composites - Indicate start and stop date/time

Sample ID	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code (a)	Field Filtered (b)	Sample Matrix (c)	Should this sample be considered:		TSCA Regulated	Total number of containers	Sample Analysis Requested (6) (Fill in the number of containers for each test)	Preservative Type (6)	Comments
						Radioactive	Radioactive					
T2 S2 L1 A1, 1 AB → 22 AB	9/30/11	1330	N	N	P					X (Cross & X (Cross B- TRITIUM		Note: extra sample is required for sample specific QC
T2 S2 L1 A1 10/1/11												
T2 S2 L2 A1, 23 MB → 30 AB	10/1/11	1215	N	N	P					X X		
T2 S2 L1 A1 - T1	9/30/11	1215	N	N	P				1	X		
T2 S2 L1 A1 - T2	9/30/11	1226	N	N	P				1	X		
T2 S2 L2 A1 - T3	10/1/11	1145	N	N	P				1	X		

TAT Requested: Normal: Rush: _____ Specify: _____ (Subject to Surchage) Fax Results: Yes / No / _____
 Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4
 Sample Collection Time Zone: Eastern Pacific Other _____
 Remarks: Are there any known hazards applicable to these samples? If so, please list the hazards.
NO KNOWN HAZARDS.

Chain of Custody Signatures			Sample Shipping and Delivery Details		
Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
<u>Randall Killpatrick</u>	<u>10/1/11</u>	<u>1300</u>	<u>Latoya Hughes</u>	<u>10/4/11</u>	<u>9:25</u>
2					
3					

Method of Shipment: FEDEX Date Shipped: _____
 Airbill #: _____
 Airbill #: _____
 For Lab Receiving Use Only
 Custody Seal Intact? YES NO
 Cooler Temp: 22 C

1.) Chain of Custody Number = Client Determined
 2.) QC Codes: N = Normal Sample, TB = Trip Blank, FD = Field Duplicate, EB = Equipment Blank, MS = Matrix Spike Sample, MSD = Matrix Spike Duplicate Sample, G = Grab, C = Composite
 3.) Field Filtered: For liquid matrices, indicate with a - Y - for yes the sample was field filtered or - N - for sample was not field filtered.
 4.) Matrix Codes: DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, W=Water, SO=Soil, SD=Sediment, SL=Sludges, SS=Solid Waste, O=Oil, F=Filter, P=Wipe, U=Urine, F=Faecal, N=Nasal
 5.) Sample Analysis Requested: Analytical method requested (i.e. 8260B, 6010B/7470A) and number of containers provided for each (i.e. 8260B - 3, 6010B/7470A - 1).
 6.) Preservative Type: HA = Hydrochloric Acid, NI = Nitric Acid, SH = Sodium Hydroxide, SA = Sulfuric Acid, AA = Ascorbic Acid, HX = Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank
 WHITE = LABORATORY
 YELLOW = FILE
 PINK = CLIENT



SAMPLE RECEIPT & REVIEW FORM

Client: <u>TPMC</u>		SDG/AR/COC/Work Order: <u>287308, 287309, 287310, 287311</u>	
Received By: <u>Shanta Whitlock</u>		Date Received: <u>10/4/11 @ 9:25</u>	
Suspected Hazard Information	Yes	No	*If Counts > x2 area background on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
COC/Samples marked as radioactive?		<input checked="" type="checkbox"/>	Maximum Counts Observed*:
Classified Radioactive II or III by RSO?		<input checked="" type="checkbox"/>	
COC/Samples marked containing PCBs?		<input checked="" type="checkbox"/>	
Shipped as a DOT Hazardous?		<input checked="" type="checkbox"/>	Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?		<input checked="" type="checkbox"/>	

Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1 Shipping containers received intact and sealed?	<input checked="" type="checkbox"/>			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2 Samples requiring cold preservation within (0 ≤ 6 deg. C)?			<input checked="" type="checkbox"/>	Preservation Method: <u>22</u> Ice bags Blue ice Dry ice <u>None</u> Other (describe)
2a Daily check performed and passed on IR temperature gun?	<input checked="" type="checkbox"/>			Temperature Device Serial #: <u>51050004</u> Secondary Temperature Device Serial # (If Applicable):
3 Chain of custody documents included with shipment?	<input checked="" type="checkbox"/>			
4 Sample containers intact and sealed?	<input checked="" type="checkbox"/>			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
5 Samples requiring chemical preservation at proper pH?			<input checked="" type="checkbox"/>	Sample ID's, containers affected and observed pH: If Preservation added, Lot#:
6 VOA vials free of headspace (defined as < 6mm bubble)?			<input checked="" type="checkbox"/>	Sample ID's and containers affected:
7 Are Encore containers present?			<input checked="" type="checkbox"/>	(If yes, immediately deliver to Volatiles laboratory)
8 Samples received within holding time?	<input checked="" type="checkbox"/>			ID's and tests affected:
9 Sample ID's on COC match ID's on bottles?	<input checked="" type="checkbox"/>			Sample ID's and containers affected:
10 Date & time on COC match date & time on bottles?			<input checked="" type="checkbox"/>	Sample ID's affected: <u>See Attached sheet</u>
11 Number of containers received match number indicated on COC?	<input checked="" type="checkbox"/>			Sample ID's affected:
12 Are sample containers identifiable as GEL provided?	<input checked="" type="checkbox"/>			
13 COC form is properly signed in relinquished/received sections?	<input checked="" type="checkbox"/>			
14 Carrier and tracking number.				Circle Applicable: FedEx Air FedEx Ground UPS Field Services Courier Other <u>FedEx Air</u> 8769 2215 0669 8758 3117 6708 8758 3117 3087 8769 2215 0058

Comments (Use Continuation Form if needed):

List of current GEL Certifications as of 06 October 2011

State	Certification
Arizona	AZ0766
Arkansas	88-0651
CLIA	42D0904046
California – NELAP	01151CA
Colorado	E87156 (FL/NELAP)
Connecticut	PH-0169
DoD ELAP – A2LA	2567.01
Florida – NELAP	E87156
Foreign Soils Permit USDA	P330-09-00191
Georgia	E87156 (FL/NELAP)
Georgia SDWA	967
Hawaii	E87156 (FL/NELAP)
ISO 17025	2567.01
Idaho	SC00012
Illinois – NELAP	200029
Indiana	C-SC-01
Kansas – NELAP	E-10332
Kentucky	90129
Louisiana – NELAP	03046 (AI33904)
Louisiana SDWA	LA110006
Maryland	270
Massachusetts	M-SC012
Mississippi	E87156 (FL/NELAP)
Nevada	SC00012
New Hampshire	2054
New Jersey – NELAP	SC002
New Mexico	E87156 (FL/NELAP)
New York – NELAP	11501
North Carolina	233
North Carolina DW	45709
Oklahoma	9904
Pennsylvania – NELAP	68-00485
South Carolina	10120001/10120002
Tennessee	TN 02934
Texas – NELAP	T104704235-11-4
Utah – NELAP	SC00012
Vermont	VT87156
Virginia	00151
Washington	C780-11
Wisconsin	999887790

Record of Communication

Date and Time:	21 November 2011; 1430 hours
Project/FAC ID:	El Dorado (AR009)
Installation/RSC:	63d RSC
Recorded By:	Charles Martin
Talked With:	Mr. Nick Flannery
Of:	Bara Infoware in support of 63D RSC, Environmental
Nature of Interview:	Site visit
Phone No.:	501-442-1617

Notes

Mr. Nick Flannery conducted a site reconnaissance on 9 NOV 2011 to ensure conditions of the property had not changed since the completion of the Environmental Condition of Property dated 6 February 2007.

Record of Communication

Date and Time:	16 May 2012; 1430 hours
Project/FAC ID:	El Dorado (AR009)
Installation/RSC:	63d RSC
Recorded By:	Charles Martin
Talked With:	Mr. Nick Flannery
Of:	Bara Infoware in support of 63D RSC, Environmental
Nature of Interview:	Site visit
Phone No.:	501-442-1617

Notes

Mr. Nick Flannery conducted a site reconnaissance on 8 May 2012 to ensure conditions of the property had not changed since the compilation of the Environmental Condition of Property dated April 2007 and his previous visit of 9 NOV 2011. There were no changes in the condition of the property.

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APPENDIX C
ENVIRONMENTAL PROFESSIONAL'S RESUME

Charles D. Martin

Summary of Qualifications

Professional experience includes 25 years in the environmental, health and safety profession. Demonstrated expertise with environmental, health and safety laws, policy interpretation and program implementation. Experience in the environmental profession includes working with state legislature, Federal and state environmental agencies, industry organizations, and local governments on Clean Water Act, Clean Air Act, Resource Conservation and Recovery Act, National Environmental Policy Act, Toxic Substances Control Act, Superfund, Occupational Safety and Health, Surface Mining, recycling, pest management, pollution prevention and waste minimization, conservation and environmental education. Team builder with a strong commitment to achieving complete compliance in programs and operations.

Experience and Work History

2011-Present Vernadero Group, Inc. North Little Rock, AR
Environmental Manager

Supporting the implementation of ISO 14001 Environmental Management System and the Arkansas Area Environmental Manager for the 63d Regional Support Command of the U. S. Army Reserve. Responsibilities include environmental compliance for facilities in all program areas.

2005-2011 Engineering and Environment, Inc. North Little Rock, AR
Environmental Scientist

Supporting the implementation of ISO 14001 Environmental Management System in the 90th Regional Readiness Command and the 63d Regional Support Command of the U. S. Army Reserve.

Coordinating the Pest Management Program and improving the Pollution Prevention and Solid Waste Management Programs.

Also working in the air, water, hazardous waste/materials, asbestos, Community Right-to-Know, NEPA, and natural and cultural resources protection programs.

2003-2005 Bregman and Company, Inc. North Little Rock, AR
Environmental Protection Specialist

Supporting the implementation of ISO 14001 Environmental Management System in the 90th Regional Readiness Command of the U. S. Army Reserve.

Improving the Pollution Prevention and Solid Waste Management Programs.

Also working in the air, water, hazardous waste/materials, asbestos, Community Right-to-Know, pest management control, and natural and cultural resources protection programs.

2001-2003 Arkansas Home Builders Association, Inc. Little Rock, AR
Executive Director

Ensured membership had knowledge of laws including compliance with stormwater permitting and asbestos laws and regulations.

Promoted programs to prevent mold and improve indoor air quality.

Promoted conservation with green building programs and encouraged recycling of and reuse of construction material.

Monitored and reported on worksite occupational safety and health.

Improved technology capabilities of the office by adding network, web page, and enhanced hardware and software.

Improved financial and membership management systems.

Served as the administrator of the Association's Worker Compensation Program.

Improved quality of publications and work products.

1995-2001 HomeCare Association of Arkansas, Inc. Little Rock, AR
Executive Director

Promoted health and safety programs of association.

Ensured membership was aware of OSHA programs and regulations.

Provided assistance in writing health and safety laws and regulations.

Increased productivity of office operations and activities.

Improved quality of association education workshops and conferences.

Worked closely with Federal, state and local agencies.

1993-1995 Industrial Compliance, Inc. Little Rock, AR
Division Administrator

Served as the manager of the firm's medical health and safety programs.

Office performed environmental risk assessments and compliance assessments of Superfund sites and hazardous waste contaminated areas.

Office provided Occupational Safety and Health consulting including indoor air quality monitoring.

Provided clients with regulatory and policy interpretation and program and compliance support.

Created a mentoring program for younger professionals.

Assessed and planned staff training

Supervised 27 employees.

1986-1993 Arkansas Environmental Federation, Inc. Little Rock, AR
Executive Director

Provided input in the development of new and revised state environmental laws and regulations.

Worked closely with the U. S. Environmental Protection Agency on environmental programs to the state of Arkansas.

Worked closely with the Arkansas General Assembly in developing environmental

Education

2002-2005	U.S. Army War College	Carlisle, PA
	Masters Degree, Strategic Studies	
1978-1985	University of Arkansas at Little Rock	Little Rock, AR
	Masters Degree, Public Administration (Thesis was a case study in Hazardous Waste Management)	
1974-1978	Ouachita Baptist University	Arkadelphia, AR
	B.A., Political Science	

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